

Governance, Citizenship, and the New Sciences
Lessons from Dewey and Follett on Realizing
Democratic Administration

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(ABSTRACT)

Administrative reform as we have known it has been constrained by the ontological and epistemological premises and assumptions of Newtonian physics and the positivism of the early behavioral sciences, leaving constructs vital to a democratic polity impoverished and problematized by power inequities and distorted communication. If public administration could be liberated from those ontological limits through adoption of concepts from the new sciences—quantum theory, chaos theory, complexity theory, and today’s ecological sciences—it might be possible to restore to the practices of citizenship and governance appropriate institutional structures which will preserve and nurture them. This dissertation develops lessons and activities pertinent to the practices of citizenship and governance drawn from the life work of John Dewey and Mary Parker Follett—lessons clarified by the premises and assumptions of the new sciences and activities congruent with those lessons.

This dissertation is comprised of four broad components: a history of administrative reform as told through the literatures of the fields of public administration and public space philosophy; a history of science in two parts—the development of classical science and the development of the new sciences—from which defining ontological and epistemological characteristics of each are abstracted; case studies from American history that demonstrate the influence of classical science on political and social thought and action; and lessons and activities for public administration and its practitioners, framed in the context of the new sciences, drawn from the life work of John Dewey and Mary Parker Follett.

The argument this dissertation makes is twofold. First, it is argued that, given the pervasiveness of the influence of modern thought in American society, it is unlikely that early reformers could have conceptualized administrative structure differently than they did. The modern worldview still dominates our thinking, despite the new understandings of how the world works that are available to us now. The second argument is that it is

possible, if we choose to do so, to overcome the modern worldview and the structure it imposes on how we think and act, and that this could lead to alternative practices for public administration. The lessons that are our heritage from Dewey and Follett, and from the traditionalists of our own field, if viewed through the lens of the new sciences, resonate with the ontological perspectives of those sciences and provide a starting point for a reconceptualization of democratic administrative practice.

Dedication

This dissertation is dedicated to my family who have been steadfast in their support throughout this process.

To my husband **Keith** who has put up with my moods, edited my text, and learned to cook. He also confessed, well into this five-year trauma, that his initial enthusiasm was predicated on the seemingly low chance that I would receive the fellowship that would make my study financially feasible. Lots of “brownie points” with a relatively low risk. We were both surprised by the fellowship, but he was able to take his “loss” with grace and style. Thanks, Shep!

To my children: **Allan, Sean** and **Susan, Melissa** and **Jeffry**, whose initial doubts about my sanity (giving up a good job, changing careers with a lot of expense involved, running off to Virginia leaving Dad to cope on his own for a while) were eventually replaced with encouragement, some nagging, and maybe a little pride.

To my animal companions: **Muffit**, whose adaptability in the face of blindness and diabetes humbles me, and **Schrödinger** (a stubby-tailed Manx, also known as Bubba, named for the famous experiment because he is both a presence and not all there at the same time), who kept my computer chair warm and might actually have learned to type if this had taken any longer.

And especially to my granddaughter, **Stephanie Alexis Kehl**, with the hope that she may be nurtured by the kind of “quantum” community alluded to in this dissertation, one where the joy of the dance of life is evoked in all of our unique children.

Dancing to the rhythms of the universe

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We dance to the rhythms of the universe.
We dance sometimes alone; sometimes in groups,
Each sensing and responding to a slightly different beat in the chaotic
rumble;
Each encompassing the whole, yet remaining unique.
Not random error, or noise,

The out-of-step footsteps
follow a path charted in the infinity of time, rational and beautiful,
if only we could see it from outside ourselves.

We live and celebrate life
Made possible in the violent death of stars so long ago -
lost to human memory.
Can we comprehend the reasons and the patterns with our puny minds?
If we can't, is truth then less true?
Can we deny the meaning in complexity because we haven't been able to
reduce it to our size?
Can we learn to see the universe without confining it inside borders of
our own creation and the accepted meters of our times?
We look for revealed truth and discard what doesn't fit our craving for
certainty.
Yet, life is uncertainty—surprise and adventure, the unexpected.

We dance to the rhythms of the universe.
If one dance is lost, all our science can't replace it.
We all are pieces of a puzzle,
our bends and straight lines mesh to make a picture -
a whole.
Are our footsteps set for us by some mad choreographer?
Can we deconstruct, then reconstruct, the dance?
Do we truly want to?
Perhaps -
Only if we can learn to visualize, to internalize, life in
multiple dimensions, drawn through time.

In a brilliant burst of light and energy -
long since dissipated -
we are born to dance to the rhythms of the universe.

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This dissertation is my small contribution to the long-running alternative public administration discourse that is the Blacksburg perspective. When Charles Goodsell and Larry Terry "recruited" me for CPAP, theirs was an easy task—most of the work had already been done by a book. Reading *Refounding Public Administration* was a turning point in my intellectual life. The opportunity to study with its authors and all of CPAP's wonderful faculty, and to become a part of their extended family has been an experience that has and will continue to shape me and my work in the years ahead.

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Preface

On April 19, 1995, as the working day began, a truck bomb exploded near the Alfred F. Murrah Federal Office Building in Oklahoma City, reducing the building to rubble and ultimately bringing one hundred sixty eight lives to an end. More than concrete and glass and individual human lives, however, came to be destroyed that spring morning. As it became increasingly clear that this tragedy was not the responsibility of foreign terrorists, but was the act of Americans against their fellow Americans, part of the American dream lay in ruins. Rather than being the locus of discourse about differences in our plural society, the public space was shattered by mindless violence defended in the language of rights.

As best we could reconstruct what happened that morning, someone or ones prepared a bomb and left it to explode—neither knowing nor caring who would die in the Murrah Building. To the perpetrators, the victims of their actions were anonymous—it was a matter of little or no importance that nineteen innocent children would become “collateral damage” in this attack on government in America. The men and women working in the building were not seen by the bombers as their neighbors—as parents and children—as human beings with families who loved them, with joys and sorrows, and even with their own frustrations of a social or political nature. Those who set the bomb did not see that building as being full of people who were at one moment laughing, playing, working, talking—alive—and in the next, broken bodies, buried in tons of

concrete and twisted metal. To the perpetrators, then, these were random, faceless sacrifices—symbols—not real living people. Just numbers. The exquisite irony of such an attitude is that the one consistent complaint we hear about government is that “it” treats citizens—us—as if we were just “numbers.”

There once was a time, when service to one’s fellow citizens through government employment was an honored calling—one imbued with a sense of vocation and mission. In that time, citizens seemed to have a clearer understanding than we have today of the inseparable relationship between the rights and obligations connected with citizenship. We had, as well, a clearer vision that *we* are our government. Today, it seems that we have come to separate ourselves from the process of governance. We can, and often do, visualize government as something out there—not connected with us, with our aspirations, with our actions.

I think that this process of separation, inherent in the modern project itself and in its atomistic individualism, was hastened by the activities collectively known as the Progressive Reform Movement. With the intention of making government more honest and efficient, reformers developed a model of administrative reform which crystallized a distinction between citizens in service and ordinary citizens—making the former into professional, neutral, technical experts in government. Roles for citizens in the process of governance (beyond voting in elections) were reduced—they often became “clients,” “recipients,” “petitioners,” and lately, “customers.” Where once information was provided to government by citizens and through such institutions as the Bureau of Municipal Research, it is now provided by consultants—for a fee—or by think tanks,

each with its own ideological bent. Where once we learned the value of participation in governance in such institutions as the family, the church, the neighborhood, and a wide variety of civic and political associations, we are now “educated” in our citizen roles by means of carefully selected and edited news and a wide variety of television “infotainment” programs and radio talk shows which boast a spectrum of political opinions but share a rhetoric of hyperbole. The pervasiveness of consumerism, the erosion of a previously rich associational life, our failure to recognize our interdependence, have left modern Americans with an image of ourselves as “dispensable”, isolated and powerless.¹ These feelings inevitably lead to fear, anxiety, and depression, and, all too often, to violence.

The result of all this has been a concomitant reduction in our sense of responsibility, as citizens, for our government and a loss of respect by civil servants for the citizens they serve and by citizens for civil servants. It is easier today to feel unconnected from government and not responsible for choices and their outcomes and consequences. Citizens have lost a sense of agency—of realizing an ability to have an impact on the course of events—and of belonging to a community. Shrouded in the isolation engendered by our exaggerated sense of individualism, it now seems easier to withdraw from the open critique of government which constitutes the public space into private, and sometimes violent, responses.

¹ Elstain, J. B. (1996) Democracy at century’s end. The Hammond Lecture in Religious Ethics and Society, given October 8, 1996, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

It is unlikely that we Americans will ever come into complete agreement on some of the issues that divide us. However, for our nation to prosper and for ourselves to grow as human beings, we must find some means of living together peaceably despite our fundamental disagreements. A tentative first step involves bringing those disagreements into the open, airing them in a healthy public arena rather than allowing them to fester. If our government has higher purposes than efficiently conducting our common business, it seems to me that the fostering of such a public space must be one of these. Exploration of the historic and social climate in which today's government and public space developed is the purpose of this dissertation; its goal is to clarify the possibilities for rebuilding a public space in which social tensions are dissipated rather than magnified.

Chapter 1

Newton's Single Vision and Administrative Reform¹

Introduction

The bombing of the Murrah Building in Oklahoma City is offered as only the most recent and dramatic example of the rift that has developed between citizens and government and the loss of meaning that has occurred in our collective pursuit of public happiness—as one indication that the American public space has become tragically flawed. In this dissertation, I will attempt to show how the administrative reform agenda of the first half of this century, the model it created of the administrative state, and its lasting effects and influence represent a significant factor contributing to this fragmentation. By creating an ever-widening gap between public servants, as technical experts in a “rational” bureaucracy, and the citizens whom they serve, the early reform movements and all those that followed have inhibited meaningful dialogue between citizens and their government and have led to the hyperrationalization of institutions and the marginalization of the practices of governance and citizenship.

The model of reform adopted in the early part of this century did not represent the only available means of creating capable government. However, as this dissertation will argue, it may well have been the only means consonant with the ontological matrix widely accepted at that time as the true picture of the world and of mankind's relationship with that world. Alternate visions of the public space, citizenship, and civil democratic society could have been pieced together from John Dewey's instrumental pragmatism and from the democratic and organization theory of Mary Parker Follett when these are combined, interpreted, and legitimated by the ontological revelations of quantum theory and the other new sciences of complexity. All of these theoretical threads had entered into the scholarly discourse before or during the reform period, however, the worldview required to make a coherent whole of them was yet to come.

Ross (1991) argues that American social science, even more than European, was faithfully modeled on the natural sciences.² Berger and Luckmann (1989) contend that science is one of the premier legitimating institutions for an accepted understanding of social order—science bestows an aura of objectivity on those socially constructed roles and rules that constitute the universe of reality in which we act.³ Expressed in philosophy

¹ The phrase “Newton's single vision” comes from William Blake, in a letter to Thomas Butts, 22 November 1802, cited in Roszak, T. (1972) *Where the wasteland ends: Politics and transcendence in postindustrial society*. Garden City, NJ: Doubleday & Company, Inc., p. 107.

² Ross, D. (1991) *The origins of American social science*. Cambridge: Cambridge University Press.

³ Berger, P. L. and T. Luckmann (1989) *The social construction of reality: A treatise in the sociology of knowledge*. New York: Anchor Books.

by Descartes, the doctrine of mechanism established a powerful explanatory metaphor for Newton's physics and cosmology. This framework for understanding the physical world became the broadly understood and accepted ontology of 19th and early 20th century America and was the lifeblood of the modern project in the West. Weinberg (1993) calls this doctrine of mechanism an heroic idea that has outlived its usefulness in science and has gone astray in application to social phenomena.⁴ While it served well in its scientific context until the discoveries of quantum theorists brought the clockwork universe into question, its application to social questions and problems, as in Marxist materialist philosophy, has created a world where the human spirit and possibilities for human agency have been severely limited.

This absolutist, foundational, and mechanistic worldview made impossible understanding and acceptance of the thinking of Dewey and Follett in their own time and on their own terms. It may even be said that the intended meaning of the work of these theorists was "lost" because of the ontological barrier constructed by the acceptance of mechanism as the correct view of the world. Fragments of their writing that could be used to support the direction being taken in political debate and administrative reform were co-opted, but in the case of each, the implications of the whole of their work were either blurred or ignored.

Technology and the Rise of the Corporation

At the turn of this century, the "technique" of the capitalist corporation, as Ellul (1964) defines that term,⁵ promised to lead the people along the one right way to the good life. It did not merely marry man to the machine in the production process, Ellul argues, it substantively changed man's understanding of himself and of his relationship to nature in such a way as to create the atomistic individual, to erode the community, and to give definition to and reinforce an artificial division between public and private, and consequently between citizen and government.

The promises of technique were seductive and appeared to be backed up with substance—production, improved by technology and spurred by the growth of the country had made amazing strides. "Nowhere else and never before was the number of inventions per capita as great as in America in the 60s of that [the 19th] century."⁶ Science and technology seemed to have the ability to solve any problem. In this climate of "progress," the expert and the language of scientific expertise became privileged. Linear thinking,

⁴ Weinberg, S. (1993) *Dreams of a final theory: The scientist's search for the ultimate laws of nature*. New York: Vintage Books, pp. 169-171.

⁵ The term "technique" was used by Ellul to describe more than merely a set of tools or a routinized way of doing things. It implied a way of thinking and a way of living in which the human spirit was subordinated to technology and to an assumed need to use technology to manipulate nature and to enhance wealth. Ellul, J. (1964) *The technological society*, trans. J. Wilkinson. New York: Vintage Books.

⁶ *Ibid.*, p. 52.

reliance on a foundation of absolute, objective, “capital-T” truth, and the formalisms of mathematics and engineering created an all-encompassing worldview which was incommensurable with alternative models for society.

The model of a reformed public administration, adopted from the organization of the business corporation, reflected this kind of linear thinking perfectly. Hierarchical form, strict accountability, neutral competence in staffing, and division by function were elements of a perfect solution for such problems of “democratized” government as patronage, spoils and machine welfare in the growing cities. The Populist revolt of the late nineteenth century had proven unequal to the task of diminishing corporate growth and undermining finance capitalism. But the threat it posed to the centralized private power structure built on industrial and finance monopoly had shaken corporate liberalism. The prevailing strain of progressivism, middle-class, urban and professional, sought to contain, not destroy private interests by building strong national government that relied on technical expertise, not on influence or private interests.

As Lowi points out, the concepts of power and authority are difficult to manage in a democratic polity.⁷ Yet, it was obvious that the corporations were wielding considerable power and the reformers strongly felt that only a commensurate increase in administrative organization at all levels of government could provide a balance against that power. The rise of interest-group liberalism seemed to preserve the forms of democracy, yet eroded the substance. The successes on the local level of a ‘managerial’ form of city government—again, with amazing success stories of increased productivity in public goods and services often accompanied by lower taxes—exerted a further influence on reform at a national level.⁸ Indeed, those successful progressive reformers insisted that reform, to be effective, must be centered in an appropriately strong national administrative state.

It was in this milieu that John Dewey struggled against the idealist philosophy of the age. The anti-foundationalist epistemology he developed called for emphasis on knowing as an activity in ordinary life rather than specialized and compartmentalized knowledge as an end state.⁹ He called for the application of the method of inquiry to all aspects of life. He considered a philosophy that did not assist the ordinary person in living life—an activity-based experiential philosophy—was not worth developing. What his age derived from this work was only a “vulgar” sense of pragmatism—espousing experimentation and

⁷ Lowi, T. (1969) *The end of liberalism: Ideology, policy, and the crisis of public authority*. New York: W. W. Norton & Company, Inc. and (1995) *The end of the republican era*. Norman, OK: University of Oklahoma Press.

⁸ Weinstein, J. (1968) *The corporate ideal in the liberal state: 1900-1918*. Boston: Beacon Press.

⁹ See, for example, Dewey, J. (1988) *The Later Works, 1925-1953, Vol. 4 (The quest for certainty [1929])* Jo Ann Boydston, ed. Carbondale, IL: Southern Illinois University Press; (1991) *The Later Works, 1925-1953, Vol. 12. (Logic: The theory of inquiry [1938])* Jo Ann Boydston, ed. Carbondale, IL: Southern Illinois University Press; and (1958) *Experience and nature*. New York: Dover Publications

practicality, not a change in the rules of knowledge and validity. Many prominent writers and publicists of the Progressive movement—Croly, Weyl, Lippmann, and others—labeled themselves pragmatists, borrowing from the teachings of Dewey such of his concepts as proved politically useful at the time. Much of Dewey’s social and political writing during the Progressive era appeared on the pages of *The New Republic*,¹⁰ however none of his contemporaries seems to have captured or adopted Dewey’s pragmatic social vision in its entirety.

Dewey valued technology and science as relevant and central activities and saw no reason to fear the rise of technical expertise. His experiential pedagogy was based on the idea that primary education should provide the key that would unlock the use of scientific thinking by all Americans as they encountered the inevitable uncertainties in daily life. His clashes with educators of his day centered on his belief that children should be taught how to think, not what to think. Despite his passion for science and the scientific method, Dewey eschewed the developing epistemology of logical positivism that came to dominate philosophy of science. The popularity of that epistemological stance in the developing behavioral sciences, an understanding of truth which remains a potent argument in social science today, has contributed to our failure to see the potential contained in Dewey’s work for public administration.

For Dewey, democracy is not political theory nor is it a descriptor for political process. Instead, Dewey defined democracy as a way of living together in which individual participation was widespread. He saw education as the means of transmission from one generation to the next of the values or elements that are the glue that holds such a community together. As he put it,

Society not only continues to exist *by* transmission, *by* communication, but it may fairly be said to exist *in* transmission, *in* communication....Men live in a community in virtue of the things which they have in common; and communication is the way in which they come to possess things in common. What they must have in common in order to form a community or society are aims, beliefs, aspirations, knowledge—a common understanding—like-mindedness as the sociologists say.¹¹

As Campbell (1995) notes, Dewey contended that:

¹⁰ The founding editors of *The New Republic* were Herbert Croly, Walter Lippmann, and Walter Weyl, the first two of which were introduced to pragmatism by William James during their college days at Harvard (Forcey, 1961).

¹¹ Dewey, John (1985) *The Middle Works, 1899-1924*, Vol. 9, (*Democracy and Education* [1916]), Jo Ann Boydston, ed., Carbondale, IL: Southern Illinois University Press, p. 7.

with improvements in our systems of education and communication, we could reach a point at which process and emergence are accepted—and even championed—as essential elements of human life. At that point, we would be able to recognize that the values that we hold dear—such as equality, democracy, and justice—are not externally derived ideals that pre-existed humans. They are rather goods that we are creating as we go along, failing and learning, testing and rethinking, in our attempts to build better lives for ourselves and for our children.¹²

Mary Parker Follett saw the community—and, therefore the democratic polity—as interconnected and interdependent persons whose identities and interests were mutually created and supported. In the democratic America of her vision, “every decision of the future is to be based not on my needs or yours, nor on a compromise between them or an addition of them, but on the recognition of the community between us.”¹³ The ongoing process of developing relationship between people, then, is the means by which uncertainties and problematic situations are resolved.

In her management consultant role, she advised a different kind of workplace relationship, where authority based on position gave way to mutually developed respect and “power with” to meet the needs of the situation giving rise to the need for action. These powerfully prescient concepts recognize the folly of the assumption of the isolated individual that is the foundation of the modern project and upon which so much of our social science rests. However, if her work on relationship was understood at all in its own time, it was most likely seen as socialist rhetoric, and therefore suspect and alien, or as an inconsistent and naive dualism blending both the ideal and the pragmatic.¹⁴

Methodology

This dissertation will deconstruct the “modernism” of American life and administrative reform associated with the Progressive Movement and the ontological stance which gave it legitimacy and to construct alternative lessons for democratic life and administrative structure from the epistemological and ontological insights of Dewey and Follett’s ‘ignored’ or ‘misunderstood’ theories. These lessons, energized by the nonlinear thinking of the new sciences, I will argue, provide a new perspective on the practices of citizenship and governance and on an institutional support of public administration and citizens which might work towards healing their severed and impoverished relationship. This

¹² Campbell, J. (1995) *Understanding John Dewey: Nature and cooperative intelligence*. Chicago: Open Court, p. 31.

¹³ Follett, M. P. (1965) *The new state: Group organization the solution of popular government*. Gloucester, MA: Peter Smith, p. 79.

¹⁴ Stever, J. A. (1986) Mary Parker Follett and the quest for pragmatic administration. *Administration & Society*, 18, 2, pp. 159-178.

dissertation will show how the work of Follett on the collective, the group, democracy, and interconnection and how Dewey's work on epistemology, ethics, and education fit into the ontological stance suggested by the new sciences of chaos theory and quantum theory.

The challenge in this project is to go beneath the surface appearances and manifestations of events and activities recorded in history to uncover the underlying deep patterns of structures which reveal the ontological assumptions giving rise to those structures. Such an intensive explication should demonstrate that, given the ontological stance of the turn of the century, alternative models of administration would have been incomprehensible to reformers—who sought “science” in a generic sense as a source of validation for their efforts to achieve honest and responsible government—and either pointless or threatening to citizens. As a consequence, theories with the potential of leading to alternative administrative forms, such as those of Dewey and Follett, were misapplied, misunderstood, or discounted. Before alternative administrative models could be developed, the foundationalist ontology of the modern era would have to be successfully challenged, if not actually replaced.

The technological society born in the late 19th century and nurtured by the progressive movement continues, if somewhat altered by the change in our economic base from the production of manufactured goods and materials to services and information. However, there exists today sufficient ontological diversity and sufficient acceptance of ontological uncertainty for their work to be reexamined and applied in the evolution of a new understanding of the public space and of the practices of democratic governance and citizenship. Such an understanding, with open-ended and pragmatic elements, may lead to the reconciliation of diverging visions of America's future that often are realized in conflict and violence today, or at least to the provision of room for what Gutmann and Thompson (1996) call “deliberative disagreement.”¹⁵ This dissertation will argue that it is possible to develop from such an understanding new theorizing about democratic governance—thinking that provides a clearer understanding of the work of Dewey and Follett and that evokes roles and activities for public administration that are instrumental toward meeting our common social purposes while at the same time nurturing the human spirit.

The design of a research project must meet several important criteria. The research plan is more than merely a road map or “action plan for getting from here to there.”¹⁶ However, some notion of a map or blueprint should guide the development of any project in order to avoid the logical problem of failing, in the long run, to answer the initial research questions. The research design needs to set forth the questions to be addressed or claims to be evaluated, the propositions derived from these, the unit(s) of analysis, the

¹⁵ Gutmann, A. and D. Thompson (1996) *Democracy and disagreement*. Cambridge, MA: Belknap Press.

¹⁶ Yin, R. K. (1989) *Case study research: Design and methods*. Newbury Park, CA: Sage, p. 28.

logic linking the data to the propositions, and most importantly the criteria for interpretation of the findings.¹⁷ And, it is of critical importance that the methodology chosen for a project match the spirit and the substance of that project.

This dissertation initially makes one strong claim—that the dominant ontological view of the people of an historic time and place imposes constraints on the social structures that evolve with or are developed by those people in that time and place. The specific claim is that the prevailing worldview of the American people in the early twentieth century—intellectual elite and common folk alike—effectively precluded the development of administrative reform strategies that did not fit a linear view of the world. Therefore, the first objective of this study is to come to an understanding of the relationship between ontology—or worldview—and the structural relations among people and institutions—specifically, how the ontology which is the context of the modern project informs the structure of government and limits or constrains models of administrative reform in this century. From this understanding, it will be possible to explain both how administrative reform, as we have experienced it, has necessarily developed in the way it has and how alternative models of the relationship between government and citizen were thereby rendered ‘invisible’ or misunderstood in the early part of this century.

To get at this fundamental understanding, it will be necessary to deconstruct administrative reform, but not as a function of language alone. The methodological approach of this dissertation is patterned on the critical theory method of “hermeneutic structuralism.”¹⁸ Critical theory, in its analysis of human interaction, not only regards language and non-verbal exchanges between actors, but must also attend to the “structural settings of power, status, and possible domination in which any interaction takes place and has its actual, situated, practical meaning.”¹⁹ Thus, there is always an element of structural analysis involved in the sense-making process of critical theory—while “human actors make sense of daily life subjectively,...[the content of that] ‘sense’ depends on context or setting.”²⁰ The interpretive analysis I will provide of the historical development and the substantive content of science—both in the classical era of Galileo and Newton and in the “new” sciences of today—will perhaps be less rigorous than a strict use of hermeneutic structuralism might require. However, this pattern of inquiry will allow me to arrive at a list of essential qualities of each era that can be used, in the first case, to analyze the historical influences of modernism on American thought and, in the second, to develop a new approach to governance based on the ontological liberation of the new sciences.

¹⁷ Ibid., p. 29.

¹⁸ Morrow and Brown (1991), p. 24.

¹⁹ Forester, J. (1983) Critical theory and organizational analysis. (pp. 234-46) in G. Morgan, ed. (1983) *Beyond method: Strategies for social research*. Newbury Park, CA: Sage, p. 235.

²⁰ Ibid.

A critical theory approach provides the basis for an appropriate methodology for coming to understand administrative reform because of this structural element. Underpinning this approach is an understanding that the social world is constructed or “constituted or produced by the active doings of subjects.”²¹ According to Giddens (1993), human subjects transform nature and in the process transform themselves, creating the history in which they then live.²² The social structures thus produced not only constrain human action, but also enable it through processes that “involve an interplay of meanings, norms and power...[that are] logically implicated in both the notion of intentional action and that of structure.”²³

The study of historically situated actors, processes and structures necessarily involves interpretation and that interpretation is affected by the researcher’s role, both as an observer and as a lay actor attempting to make sense of human action and structure. Such a task is an essentially moral enterprise, as is the task of governing. Interpretive inquiry “is composed of the intellectual, emotional, political, willful, cultural, social, and spiritual...[is] not really about amassing knowledge, [but] about discerning wisdom...the deeper wisdom...that the most important things in life are not the seen but the unseen or the hard to see.”²⁴ The truth test of interpretation lies in its appeal, through argument or persuasion, both to reason and to intuition and feeling. There exists no absolute standard against which the results of interpretive inquiry can be measured, but their fit to mutually agreed-upon facts, their coherence and internal logic, and their adequacy in explaining or clarifying situations and actions can produce acceptance.

Hermeneutic structuralism, when applied to historically situated political and administrative events, involves examination of communication patterns and their uses in achieving consent and building sufficient consensus to take action. Habermas’s notion of ideal communication is grounded in four claims to validity: truth claims, legitimacy claims, sincerity claims, and clarity claims which, when accepted by the listener, lead to the shaping of beliefs, to gaining consent, to building trust, and to focusing attention, respectively.²⁵ In the context of this dissertation’s modeling of the public space, governance, and citizenship, such a critical theory strategy “exposes the political and structural production, and the vulnerability, of citizens’...beliefs, consent, trust, and attention.”²⁶

²¹Giddens, A. (1993) *New rules of sociological method: A positive critique of interpretive sociologies*. Stanford: Stanford University Press, p. 168.

²² Ibid.

²³ Ibid., p. 169.

²⁴ Poplin, M. S. (1996) The hunger for wisdom. (pp. 144-149) in L. Heshusius and K. Ballard, eds. *From positivism to interpretation and beyond: Tales of transformation in educational and social research*. New York: Teachers College Press, pp. 148-149.

²⁵ Forester, J. (1983), pp. 236ff.

²⁶ Ibid., p. 238.

Hermeneutic structuralism has two component parts—complementary strategies: intensive explication and comparative generalization.²⁷ The research logic of intensive explication is intended to lift “into view the underlying semantic, sociocultural, and structural relations that are constitutive of historically unique actors, mediations, and systems, respectively.”²⁸ In revealing the ontological matrix of an historic period, one exposes significant legitimating factors that can exclude alternative views while reinforcing the current socially constructed reality.

Hermeneutics as methodology is historically associated with interpretation of authoritative texts—religious texts, legal texts, and literature—and can be traced back to ancient Greece and the interpretation of poetry.²⁹ Classical hermeneutics, then, is associated with language and text in a unique way. It is “engaged in two tasks: one, the ascertaining of the exact meaning-content of a word, sentence, text, etc.; two, the discovery of the instructions contained in symbolic forms.”³⁰

Language, in this context, serves two purposes. First, it is the medium for arriving at and then transmitting meaning across time and space. Second, it provides the symbolic structure or set of patterns within which we live our lives and through which we know the world. It is the goal of hermeneutics to reveal both of these purposes and to bring about an understanding of them. “The hermeneutic problem is therefore not a problem of the accurate mastery of a language, but of the correct understanding of the things that are accomplished through the medium of language.”³¹

Comparative generalization is a strategy of “comparing the patterns disclosed through intensive explication across a finite set of historically comparable cases (actors, mediations, or systems)...in order to make limited generalizations regarding identifiable patterns obtaining across several cases at a single point in time or for changes in the pattern of a single case over some duration of time.”³² In this research it is necessary to establish administrative reform as one aspect of a social context scripted by Cartesian ontology—one of a set of cases whose patterns can be shown to match. It will also be necessary to monitor the development of administrative reform for change in that basic script over time, as well as to evaluate points of change in the structure of the administrative state which may be susceptible to change resulting from a shift in ontology.

²⁷ Morrow and Brown (1994).

²⁸ Ibid., p. 212, paraphrasing Sayer, A. (1984) *Method in social science*, 2nd. ed. London: Routledge.

²⁹ Rickman, H. P. (1990) Science and hermeneutics. *Philosophy of the Social Science*, 20 (3), pp. 295-316; pp. 297-298.

³⁰ Bleicher, J. (1980) Contemporary hermeneutics: Hermeneutics as method, philosophy and critique. London: Routledge & Kegan Paul. p. 11.

³¹ Gadamer, H.-G. (*Wahrheit und Methode*. Tübingen, 1960) cited in Giddens, A. (1993). P. 63.

³² Morrow and Brown (1994), p. 212, emphasis added.

The second objective of this study is to derive elements for a model of the public space, governance, and citizenship, from Follett's organization theory and Dewey's pragmatism, which are reflective of the ontological possibilities revealed by the new sciences. Such modeling, it will be argued, will show how that lost alternative thinking may now be utilized in an attempt to heal the relationship between citizen and government. The loss of the ontological certainty that is foundational to Cartesian philosophy and Newtonian science has made possible and visible such alternative modeling and has made the outcomes of this modeling accessible and acceptable to nonexpert, "ordinary" citizens. One consequence of this may explain the re-emergence of the work of Mary Parker Follett and new applications of the philosophical work of John Dewey that we have seen in the past decade.

When we speak of models, we often imagine formal mathematical models (as found in econometrics, for example). However, descriptive models, either static or dynamic, can be built when calculability is either not required or not appropriate to the data being modeled.³³ The data from this project—social constructions of meaning and the institutional and organizational constructs arising from these—do not lend themselves readily to quantitative analysis. Therefore, any tentative models that develop in this project will be descriptive in nature.

There are two necessary elements in modeling as a method in social inquiry: "a logical apparatus and a body of experience at least partly organized into the kinds of patterns needed to fulfill the purposes for which knowledge is sought."³⁴ Modeling as methodology presupposes that both elements are already available, thus assuring that the knowledge gained is accepted and useful, if not necessarily generalizable.

In the project of this dissertation, the logical apparatus are derived from physics—from Newtonian physics for the deconstruction of the historical cases that have shaped administrative reform in America, and from the new sciences for alternative models of the American public space and administrative structures of the future. The body of experience, in each case, is drawn from the cultural, historical, and social context of each period studied—from the founding to the present.

Overview of Chapters That Follow

The body of literature to which this dissertation speaks—the history of administrative reform and public philosophy—is sampled in Chapter 2 below. This literature parallels and reflects the history of public administration as both a field of professional practice

³³ Meehan, E. J. (1994) *Social inquiry: Needs, possibilities, limits*. Chatham, NJ: Chatham House Publishers, Inc., p. 99.

³⁴ Ibid.

and as an academic endeavor, and includes both context, in the form of American public philosophy, and criticisms of the administrative state.

The chapter begins with an examination of reform as a theme in the popular press—from the realist fiction of Upton Sinclair to the muckraking exposés of Tarbell, Baker, and Steffens to the editorial practices and influence of such men as William Allen White. In the broadest sense, the popular press highlighted serious problems facing the nation, often related to the effects of industrial growth and combination. Some of this literature resulted from high quality investigative reporting. Some reflected the passions that felt injustices and inequalities aroused. Some demonstrate the power of the press to influence public opinion and shape governmental policy. All of these sources provide a sense of the context into which administrative reform was born.

The chapter then proceeds to examine various faces the government reform movement has shown since the end of the nineteenth century, beginning with local level reforms like the city-manager movement. It examines the beginnings of national reform, especially in the areas of the executive budget and human resources. Next, it looks at the New Deal expansion of government, and particularly the shift toward a managerial presidency and the design of administrative agencies on the corporate model. The need to deal with the problems engendered by the great depression and World War II brought an expansion of the national government and an entrenchment of the bureaucratic structure and “one best way” philosophy that came from the Brownlow Report.

The next two sections highlight post-New Deal reforms in both civil service and budgeting through the present, and demonstrate how surface changes masked a basic commitment to the premises of the Brownlow philosophy. While the rhetorical emphasis shifts from each “reform” to the next, the basic goals of rationalizing government practice—furthering efficiency, effectiveness, and economy—remain intact from Brownlow through reinventing government.

The academic literature concludes with a sample of the critique of government from various sources, with the common thread of questioning whether democratic ends can be realized through bureaucratic means. While all of these, from the “traditionalist” scholars of public administration through the postmodernists, decry the dehumanizing effects of the bureaucracy, none seem to recognize the pervasiveness of the modern worldview as the source of the bureaucratic structure and goals or seem to be able to look past the modern worldview to some alternative to bureaucracy.

The second body of literature briefly examined concerns the concepts of a public space and a public philosophy. The public space is the context for citizen-government relationships. The idea of a public space arises from the thinking of the early Greek philosophers, and was expanded and modernized during the revolutionary period of the eighteenth century. Today’s public space, as a result, is a modern construct and is

plagued with modern problems. Since the public space is the context in which the relationship between the citizen and his or her government develops, any new understanding of administrative structure and practice necessitates some adjustment to our understanding of the public and private spheres of life as well. Public philosophy is that body of thoughts and values that are commonly held by the polity. In a fragmented and problematized public, finding such common connections is difficult. Any radical reform of the public space and the administrative state, then, requires finding new common bonds and the weaving of a new public philosophy.

The chapter concludes with a brief exploration of the principal argument of this dissertation. American government structures and their subsequent reform were social constructs created by people for whom the modern worldview was the only acceptable and legitimate model for visualizing social organization. The modern worldview, constructed by eighteenth century philosophy out of the premises, findings, and conclusions of contemporary science, was so prevalent and so “comfortable” for nineteenth-century Americans that no other organizing principles for government were ever considered.³⁵

Critics of the administrative state ask the questions: “how could we create government structures so unfriendly to the human and democratic spirit?” and “can we reconcile bureaucracy with democracy, and if so, how?” These are the wrong questions. More appropriate questions would be: “how could we, given the worldview we held, do otherwise than construct government as we did?” and “what sources, if any, can we consult now in an attempt to reconstruct and repair administrative practice and structure to be more in keeping with the democratic ethos?”

This dissertation argues that the government and reform strategies we continue to have are so immersed and constrained by our modern ontological premises that alternatives continue to seem unreasonable—that the progressive reformers could hardly have done other than they did in their construction of the American administrative state. It also proposes that, if ontological constraints are at the root of the problem of today’s government and public space, then to deal with the problem, we must loosen those constraints. The deconstruction of the modern worldview’s roots and influence on American social thought, the examination of what science has discovered about the nature of reality since the classical era of physics, and the application of that ontological stance and the lessons we can learn from Dewey and Follett all contribute to our ability to develop alternate ways of living together and governing ourselves.

Chapter 3 chronicles the development of the project of modern, classical science and examines its premises and conclusions in an attempt to catalogue the defining

³⁵ The modern worldview is comforting because it imposes order on social interactions, and humans seem to have a psychological need for order.

characteristics of that project. One of the emphases of the chapter is humankind's relationship with nature and how this relationship was altered, first through the offices of the Christian church, and later through science, until nature could be seen as an object for science to dissect and study. Another emphasis is the changing understanding of how physical and biological systems function, from early Greek systems thinking through the rise of the cathedral university. These prepared the way for the investigations of early modern scientists like Galileo, Descartes, and Newton.

The principal contributions of these three natural philosophers are discussed briefly, and from their work, a list of defining characteristics of modern ontology are drawn. These characteristics are:

- a belief that there is a uniform foundational truth—an objective reality whose laws can be discovered by those trained to look;
- a belief that it is possible to investigate that truth objectively—from a perspective that stands outside the investigation;
- reduction of complex problems into idealized experimental situations so that direct, linear cause-and-effect relationships could be derived and tested;
- the development of the scientific method and the ability to generalize from the sample to a broader population;
- the derivation of the mind/body divide and its associated denigration of sensory experience that led to valuing cognitive rationality over all other ways of knowing about the world;
- a belief that man was meant to dominate, master, and control nature—a view particularly associated with Sir Francis Bacon;
- a mechanical model for the world—the clockwork—and the development and application of the machine model to all facets of human life;
- a belief that nature follows a deterministic path—that through discovering the laws of nature one could both explain all processes that had gone before and predict all future processes; and
- the growth of positivism, especially in the social sciences, and an understanding of the purposes of human life whose hallmark is the idea of progress.

These characteristics are used in Chapters 4 and 5 to analyze the historical cases presented in these chapters. In Chapter 4, three cases are presented: the period of the American founding, regional differences in the thought and ordinary life of mid-nineteenth century America, and the farmers' revolt and the Populist movement. The analysis will show that the modern worldview—the influence of classical physics on thought—lies underneath both the Federalist and the Anti-federalist positions in the

founding debate. Elements of the modern worldview appear to have influenced the character of all regions of the nation at the time of the Civil War, but its footprints are clearest in the ethos of the urban, industrialized North. The seeds of the idea of “Progress” were watered with the blood shed in the Civil War—the Union victory not only brought forth a nation where once there had been a confederacy but also enthroned the modern ontology as the American ethos. Populism was perhaps our only real attempt to call that modern ontology into question, and to bring its technological output under the control of democratic spirit, but that attempt was brought to an end with the presidential election of 1896.

Chapter 5 is comprised of two longer cases—the progressive era (1900-1920), and the post-World War II era (1945 to the present). Many of the actual administrative reforms of the progressive era were examined in Chapter 2, so the case presented here touches principally on other aspects of the period: the rise of professionalism and consumer marketing; the differences and similarities between the conservatives and progressives; and local progressivism in Wisconsin. The final case examines technocracy in America from the use of atomic energy in war through the turbulent decades of the 1960s and 1970s to the present.

Each of the five cases analyzed demonstrates the influence of the modern worldview on American political and social thought and on organization, however, the two later cases go beyond that to show how deeply into the daily lives of people those modern characteristics had grown. It is unlikely that most Americans would have taken administrative reformers seriously had they proposed reforms inconsistent with that worldview. This explains why pragmatic thinkers like Mary Parker Follett and John Dewey—two people who have a lot to contribute to any alternative “model” we may construct—inspired controversy in their lifetimes and were quietly forgotten after their deaths. Their work often went against the American grain, and was consequently packed away with other uncomfortable thinking like relics in grandmother’s attic.

Science, in the form of a philosophical interpretation of classical physics, had given modern social organization its legitimacy. But, science itself had not stood still in the intervening centuries. Chapter 6 recounts the developments in theoretical science since the beginning of the twentieth century—the “new” sciences of quantum theory, complexity theory, chaos theory, and ecology.³⁶ Some aspects of Newton’s classical dynamics were unsatisfactory in explaining natural phenomena such as, for instance, the nature of light. These anomalies opened the way for a paradigm shift in physics. Quantum theory not only explains these phenomena, but perhaps even more importantly, moves us away from thinking that there is one right way to look at what is real. While

³⁶ The designation of quantum theory, which was formulated in the 1920s based on pioneering work at the turn of the century, as a “new” science is open to challenge. Quantum theory is “new” when compared to classical physics of the seventeenth and eighteenth centuries.

physicists agree on the basic facts of atomic structure and interactions, they hold widely divergent views on why those facts are as they are. Quantum theory describes a reality that is open, unfixed, and non-deterministic.

Chaos and complexity theories describe systems that operate best—that thrive—in conditions that are uncertain and often turbulent. Chaos theory describes a reality that is populated with strange attractors and structures that self-organize, with fractal geometry and order out of disorder. Nature is replete with such structures—the self-similar shape of a tree or a mountain, the fractal nature of a coastline, the information coded in DNA, and the self-organizing character of ecological systems.

These new sciences may allow us to succeed where the Populists failed—to bring technology under the control of the democratic spirit. They may offer an alternate context for our thinking about social organization and social structures such as administrative structures. Minimally, they provide the elements for a new liberating ontological perspective through which we may be able to better interpret the world and integrate theoretical perspectives that had been previously dismissed. These are:

- the notion that what we call reality is observer-created—that there is no privileged position or voice;
- a way to see what is real that denies dualism—a both/and, rather than an either/or perspective;
- a denial of linear causality—an understanding that the causes of events are interconnected and multiple, and often, indirect;
- an understanding that order and chaos are two aspects of events, that neither is privileged, that order often arises out of chaos through self-organization;
- an epistemological stance that denies foundational, universal Truth, and replaces static knowledge with active, experiential knowing—being involved with events, making and connecting and being connected with nature;
- replacing the machine metaphor description of the world with the idea of the ecosystem, and replacing competition as a key value with cooperation and partnership;
- recognizing the responsibility we human actors have for each other and nature because the living system of which we are a part coevolves;
- replacing the notion of Progress as both the goal of the human project and a measure of its success with that of sustainable Growth.

The legitimation of the institutional order that has been the context for political and administrative reform in the United States was provided by the premises and conclusions drawn from the physics of the eighteenth century. The symbolic universe of

intersubjective meaning is integrated with the social constructs of that universe through the auspices of science. “Legitimation justifies the institutional order by giving a normative dignity to its practical imperatives.”³⁷ Without the backing of science as an accepted authority, alternate theories of organization are seen as relativistic. What the new sciences have to say about what is real makes possible legitimate alternatives to administrative ideas that conflict with the democratic spirit.

It is the task of the concluding chapter of this dissertation to weave together the strands of the liberated ontology of new sciences and the social theories and the lessons of Dewey and Follett that we have forgotten or ignored into a different context in which the practices of public administration and citizenship can be enacted. The chapter first describes the potential of a quantum worldview for housing such practices. It then describes the lessons we can learn from Dewey and Follett—lessons that expose a different slant on common themes in our rhetoric.

The chapter concludes with a series of activities in which public administrators might engage to foster a different and healthy relationship among citizens and between citizens and government, and to reshape American institutions of governance—administrative reform of a different order of magnitude than experienced in the past century. This menu of activities does not constitute a prescriptive model, but rather offers some choices individuals can make in the way they approach their work in government, and choices the academic field can make in the way it frames and teaches public administration.

If we can overcome the single vision imposed on our understanding of the world by the “old” science, we may, as individuals and groups, be able to accept the liberating promise of the “new” science to give legitimacy to new institutions we help create. We have, as a field, tried to create new institutions without adjusting our understanding of how the world works. We have tried and we have failed. Our administrative “innovations” amount to old wine in new bottles, and we seem doomed to repeat and even magnify our old mistakes. Before the democratic spirit (that we all want to claim) can triumph, before the relationships that make us a integrated nation can grow and prosper, we need to cast off the limits of the old worldview and undertake to see the world in a new way. If any of the lessons provided by Dewey and Follett can take root, and if public administrators undertake any of the activities those lessons suggest, we may be setting foot on the road leading toward the goal we proclaim—democratic administration.

³⁷ Berger and Luckmann (1989), p. 93.

Chapter 2 Administrative Reform and the Public Space

There are two major streams of public administration literature to which this dissertation will speak. The first, and more important, of these is the broad literature encouraging, analyzing, and/or describing the development of the American administrative state. Included in this grouping are: popular literature, government documents arising from attempts at administrative reform,¹ and the scholarly analyses of such reform that constitutes so much of the foundational and current literature of public administration as a scholarly field. Popular literature can be said to include magazine and newspaper articles, especially those written by journalists Theodore Roosevelt called “muckrakers;” political speeches, tracts, and the articles and books of publicists such as Herbert Croly; accounts of urban conditions and settlement house social work, and even novels and short stories that exposed commercial and government practices calling for reform. Government documents include reports and legislative acts that recommended or enacted structural changes in government. The scholarly literature is accounted by tradition to begin with Wilson (1887) and Goodnow (1900) whose works established as a norm the concept of administration as separate from political process.²

What these disparate sources have in common is a recognition that all was not well in the republic, either politically or economically, in the years following the Civil War. Most presented, either implicitly or explicitly, a call for structural change in government on the assumption that such change could address the ills identified. However, instead of directly challenging the power relationships among institutions, especially those of courts, political parties and private businesses, the progressive reformers (along with many feminists of the period) sought change through influence and educated public opinion.³ In that effort, progressive academics wrote prolifically and published their works both in academic journals and for a wider, more general, audience in popular periodicals and newspapers. Their call for change presumed that public opinion could and would both be influenced by what they wrote—the facts of various situations—and prevail over the entrenched power politics of the late Gilded Age and bring the dawn of a new age of democracy.

¹ Included in this category are those Acts of Congress that served to change the relationship of administrative agencies to the three great branches of government, beginning with the Pendleton Act of 1883, and including such others as the Budget and Accounting Act of 1921 and the Civil Service Reform Act of 1978. Administrative reform was also the object of presidential commissions, of which the Taft Commission, the Brownlow Committee, the Hoover Commissions, the Grace Commission, and the Gore Report are the principal examples. These reform efforts will be described more fully and deconstructed in chapters that follow.

² The advent of public administration as a self-conscious field of study and practice and the onset of formal reform activity occur simultaneously, and these two categories of literature will be discussed together in a later section.

³ Eisenach, E. J. (1994) *The lost promise of progressivism*. Lawrence, KS: The University Press of Kansas.

The Popular Press and the Impulse for Reform

The themes of corruption and reform were available to shape public opinion in the fiction of the progressive era as well as in news and opinion writing. Just as was true in philosophy, a shift from idealism to realism took place in American literature as the old century came to a close. While the literature of the post Civil War years had been “regional and romantic; that of the nineties was sociological and naturalistic.”⁴ Themes from the new discoveries of evolution and psychology replaced the moralistic and lofty tones of the Victorian era. Novelists like Henry James, Stephen Crane, Jack London, Frank Norris, Theodore Dreiser, and Edith Wharton told stories flavored with the paradoxical blend of “deterministic pessimism and transcendental optimism” that characterized the age.⁵ Their novels describe America’s loss of innocence, the rise of the *nouveaux riches* displacing the old landed “aristocracy,” the end of the frontier and the growth of corporate America, and the effects of all of these had on the lives of individuals. Most of this body of fictional literature simply portrayed American life as it was, implying the need for change, without explicitly demanding it.

Perhaps the most explicitly “reformist” of the novels of the period, Upton Sinclair’s *The Jungle* shocked Americans into demanding sanitary reforms in the meat-packing industry, rather than, as he had intended, better working conditions for workers. The campaign for standards of purity in food products in the early 1900s began an era of government regulation in areas directly impinging on the lives of citizens. The work of Dr. Harvey W. Wiley, chief chemist for the Department of Agriculture, shines as an example of the advocacy by government employees for such standards.⁶ But the extent to which, and the nature of, adulteration in products intended for human consumption were largely brought to the public’s attention by crusading journalists, who presented the facts to the reading public and helped define them as problems for government to address.⁷ The general public interest did not coalesce around issues such as labor disputes and stock market regulation. According to Filler (1973), “what the public wanted was safe food, regulated railroads and insurance, and conservation of natural resources.”⁸

⁴ Commager, H. S. (1950) *The American mind: An interpretation of American thought and character since the 1880s*. New Haven, CT: Yale University Press, p. 56.

⁵ Ruland, R. and M. Bradbury (1992) *From puritanism to postmodernism: A history of American literature*. New York: Penguin Books, p. 232.

⁶ See P. Van Riper (1992) Harvey W. Wiley: Pioneering consumer advocate. (pp. 30-56) In T. L. Cooper and N. D. Wright, eds. *Exemplary public administrators: Character and leadership in government*. San Francisco: Jossey-Bass.

⁷ See Sullivan, M. (1996) *Our times: America at the birth of the 20th century*. (D. Rather, ed.), New York: Scribner, pp. 218-243, for a detailed account of the birth of government regulation in the area of food and drugs that arose as the food industry grew from the face-to-face exchange of agricultural products to a national market, where buyers and producers were unknown to each other.

⁸ Filler, L. (1973) The muckrakers and middle America. (pp.25-41) in Harrison, J. M. and H. H. Stein, eds.(1973) *Muckraking: Past, present and future*. University Park, PA: The Pennsylvania State University Press, pp. 31-32.

Journalists such as Ida Tarbell, Lincoln Steffens, and Ray Stannard Baker, and popular magazines like *McClure's* and *The American Magazine* were forerunners of today's investigative reporting. While they aimed primarily at the exposure of big business's indifference to human well-being and lack of fair play, these journals and journalists put pressure on government to take an active role in protecting citizens, as consumers and small producers, from that indifference. The "muckrakers"⁹ as a group sought to present facts, to be objective, not to advocate particular actions or remedies. Their aim was to inform an already uncomfortable public and they trusted that an informed, and aroused, public would demand reform. Muckraking journalists recognized that "a sense of uneasiness about [the] malfunctioning political, economic, and social institutions which had begun to become evident several decades earlier was troubling increasing numbers of Americans."¹⁰

While there were earlier examples of exposure journalism¹¹ the period of the muckrakers is generally accounted to begin in late 1902¹² with *McClure's* first installment of Ida Tarbell's series on Standard Oil and "Tweed Days in St. Louis" by Lincoln Steffens and Claude Wetmore, and to continue through approximately 1912.¹³ The January, 1903, issue included the third installment of the Standard Oil series, Steffen's first independent work on municipal corruption, "The Shame of Minneapolis," and Ray Stannard Baker's article on the anthracite coal strike, "The Right to Work."¹⁴ In one issue, *McClure's* covered the unethical activities of the country's largest corporation, political and business collusion, and one side of the day's hottest labor issue, raising the reading public's consciousness of these pressing issues.

⁹ The term "muckrakers" was applied to investigative reporters by Theodore Roosevelt when he compared them to Milton's "man with a muckrake" who never saw the glory of God because his eye was directed down on the muck he was raking.

¹⁰ Stein, H. H. and J. M. Harrison (1973) Muckraking journalism in twentieth-century America. (pp.11-20) in J. M. Harrison and H. H. Stein, eds. (1973) *Muckraking: Past, present and future*. University Park, PA: The Pennsylvania State University Press, pp. 16-17.

¹¹ For example, according to Dilliard (1973), as early as 1892, *The Ladies Home Journal* ran articles on such taboo topics as venereal disease and campaigned for municipal reform and a safe environment. And, covering the police beat in New York City in the 1880s for the *Sun*, Jacob Riis began campaigning for improved housing for the poor. His experiences ultimately coalesced into a book, *How the Other Half Lives*, published in 1890 See, Smith, P. (1984) *The rise of Industrial America: A people's history of the post-reconstruction era*. (Vol. 6) New York: Penguin Books, p. 383.

¹² Exposure journalism began in 1902, but it was not until a speech by Theodore Roosevelt on April 14, 1906, that the term "muckrakers" was coined to describe it. Bannister, R. C., Jr. (1966) *Ray Stannard Baker: The mind and thought of a progressive*. New Haven, CT: Yale University Press, p. 102.

¹³ Johnson, W. (1947) *William Allen White's America*. New York: Henry Holt and Company, p. 138.

¹⁴ Semonche, J. E. (1969) *Ray Stannard Baker: A quest for democracy in modern America*. Chapel Hill, NC: The University of North Carolina Press, pp. 105-107.

Although space precludes an expansive discussion of exposure journalism and these three reporters, a brief account of their work demonstrates how their contributions to the progressive reform movement helped to shape government as we know it today. Before coming to *McClure's*, Lincoln Steffens worked as a reporter for New York's *Evening Post* and for the *Commercial Advisor*.¹⁵ Steffens' muckraking work centered on graft and corruption at the municipal level. His series of articles on American city governments gave impetus to the local reform movement. Perhaps his unique contribution lay less in exposing corrupt politicians, *per se*, and more in shedding light on the relationship between business leaders and those politicians. According to W. Johnson (1947), Steffens' work "pointed out that the source of bad government was not the politician but the businessman who corrupted the politician in order to obtain favors."¹⁶

Ida Tarbell (1939) says of herself, "my point of attack has always been that of a journalist after the fact, rarely that of a reformer, the advocate of a cause or a system."¹⁷ She came to *McClure's* at its beginning and her early series on the life of Napoleon, foreshadowing her later life of Lincoln, doubled the young magazine's circulation within months.¹⁸ However, she is best remembered for her investigation of the Standard Oil Company, a story about the issue of corporate growth, reflecting both the experiences of her family in the oil fields of western Pennsylvania and the influence of Henry Demarest Lloyd's *Wealth Against Commonwealth*.¹⁹ She did not oppose the corporate form or size or wealth of Standard Oil, but the methods by which those were obtained. In fact, she acknowledged Standard Oil as a great corporation whose legitimacy was tarnished by the tactics used against small oil companies. She saw the activities of this corporate giant as a "brilliant example [that] has contributed not only to a weakening of the country's moral standards but to its economic unsoundness."²⁰ After Tarbell's journalistic career came to a close, she immersed herself in the study of the life of Abraham Lincoln and toured the country giving lectures. These lecture tours gave her the opportunity to observe and record the mood of the American public during the progressive era, which will be discussed in a later chapter.

The last of these great muckrakers, Ray Stannard Baker, had a career in journalism (and in fiction writing, as well) that spanned both the populist and the progressive years. As a reporter for *The Chicago News-Record*, he covered the march of Coxey's Army²¹ and the

¹⁵ Smith, P. (1984) pp. 384-389.

¹⁶ Johnson, W. (1947), p. 138.

¹⁷ Tarbell, I. (1939) *All in the day's work*. New York: The Macmillan Company, p. 399.

¹⁸ Smith, P. (1984), pp. 394-395.

¹⁹ Tarbell, I. (1939) p. 204.

²⁰ *Ibid.*, p. 230.

²¹ Coxey's Army was one of a number of bands of unemployed laborers who marched on Washington, D.C. to dramatize their plight before the Congress. Jacob Coxey led his 20,000 marchers from Massillon, Ohio, and, after being cheered and fed along the way by supporters, reached the capital after two months on the

Pullman Strike in 1894,²² both of which experiences helped to open him to seeing the business point of view on reform as something less than perfect. While in Chicago, he was associated with Jane Addams and others in the settlement house movement.²³ His human interest articles attracted the attention of S. S. McClure, and Baker left the *News-Record* and Chicago for New York City and investigative reporting.

McClure's was unique in that it assigned reporters to do stories in depth, or sent them off to research their own ideas, allowing them "to take weeks or months, if necessary, to track down all the pertinent facts about a particular person or event."²⁴ Early in his career at the magazine, Baker was sent to Germany, where he examined the relation between industry and government there. Part of his research focused on the Carl Zeiss optical works, a company that pioneered extensive employee benefits like "pensions, medical insurance, profit-sharing, and educational opportunities."²⁵ He predicted that this kind of organization would become common, but objected to what he called the "government paternalism" represented in the insurance plans, suggesting that they would impair initiative among workers.²⁶ Baker was impressed overall with the clean and safe cities produced by the "order, system, and discipline" of the German *Zeitgeist*, but equivocated about the close relationship between the state and private enterprises.²⁷ Along the same lines, Baker thought highly of the Civic Federation—a reform organization populated by business leaders—thanks to the organization's "business-like" approach to urban problems and its concern for "efficiency in every operation."²⁸

Baker was an enthusiastic admirer of "great men" or "heroes"—men who "had often to rise above personal concerns and organizational red-tape to achieve results," and, thus, found much to praise in Theodore Roosevelt.²⁹ Like Roosevelt, Baker was an outdoorsman who found the idea of the wild west so entrancing that many of his short adventure stories were situated in the frontier. While acknowledging that many of his heroes had faults, Baker saw them as getting things done. He felt that "a triumph over nature, even symbolic, seemed for the moment, a reasonable substitute for a wilderness that had been conquered and an urban jungle that would not yield."³⁰

road. Although Coxe was arrested for walking on the grass at the Capitol, his "Address of Protest" was read to the Congress by a Populist legislator. Smith, P. (1984), pp. 508-516; Semonche (1969), pp. 61-65.

²² Smith, P. (1984), pp. 520-521; Semonche (1969), pp. 66-69.

²³ Semonche (1969), p. 70.

²⁴ Smith, P. (1984), p. 397.

²⁵ Semonche (1969), p. 94.

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ Bannister (1966), p. 56

²⁹ *Ibid.*, pp. 75-77.

³⁰ *Ibid.*, p. 82.

Other issue areas that Baker investigated for *McClure's* included the railroads and their regulation by government, and, for *The American Magazine*, he wrote articles on lynchings in the South that, although his position was disturbingly ambivalent by today's standards, contributed to a change in cultural climate that allowed organizations like the NAACP to be founded.³¹ The breadth of Baker's and other muckrakers' investigations helped to define the nature of the problems that America had to solve to adjust to its transition from a rural and agrarian society and economy to one that had become irrevocably urban and industrial. The "mugwumps,"³² the reform cadre of the last century, had believed that the guidance of "moral and intelligent leaders" would suffice to return the nation to the founders' ideals.³³ The progressives, by contrast, saw reform as a "vehicle through which ideas and some institutions could be readjusted to the harsh realities" of political and economic life in the new century.³⁴ The muckrakers held that if enough detailed facts were made available to the public, appropriate reforms would follow—would have an opportunity to be realized. According to Ruland and Bradbury (1992), as they look back on this period, "the radical reportage of the early 1900s represents the hopes of an America that saw a Utopian political future which the century has not confirmed, though its critical vision should not be forgotten."³⁵

The Influence of Editors and Publicists

The period from 1890 to 1910 has been called by some the "age of journalists."³⁶ These two decades saw the transformation of journalism from the partisan and personal genre of Horace Greeley and E. L. Godkin to the modern, technologically sophisticated brand of William Randolph Hearst and Adolph Ochs. Economics drove the new journalism. The rising cost of producing and distributing daily newspapers necessitated an increase in advertising revenues, increasing the likelihood that advertisers could influence the editorial stance of the newspaper. Newspapers like Ochs's *New York Times* were businesses in every sense of the word.³⁷ While Ochs and the *Times* are symbolic of what was "admirable" about this new journalism, Hearst "had no conception of a newspaper as

³¹ Semonche (1969), pp. 198-212; Hofstadter, R. (1955) *The age of reform: From Bryan to F. D. R.*, New York: Alfred A. Knopf, p. 202; and Bannister, R. C., Jr. (1973) Race relations and the muckrakers. (pp. 45-64) in Harrison and Stein, Eds. *Muckraking: Past, present and future*. University Park, PA: The Pennsylvania State University Press.

³² The mugwumps, reformers of the middle-to-late nineteenth century, were typically upper-middle to upper class, well educated professionals—editors, academics, doctors, lawyers, politicians, and even some business leaders—who saw moral anger, rather than direct political action, as a tool to wake the public up to the problems of the age. See, Contosta, D. R. (1980) *Henry Adams and the American experiment*. Boston: Little, Brown and Company, pp. 36-56.

³³ *Ibid.*, pp. 36-37.

³⁴ Semonche, p. 227.

³⁵ Ruland, R. and M. Bradbury (1992) *From Puritanism to postmodernism: A history of American literature*. New York: Penguin Books. P. 243.

³⁶ Smith, P. (1984) p. 377.

³⁷ Commager (1950), pp. 67-73.

a public trust and in this was probably closer to the business standards of the nineties” than were his more idealistic contemporaries.³⁸ Thus, in addition to the variety found in reporters’ outputs during this period, there was variety in the quality and substance of editorial policy.

Throughout its history, America has been a nation of words. From the earliest days of the founding debates, the printed word and the spoken word were used to bring some sense of order to the diversity and chaos that was the American people. By the end of the nineteenth century, printing technology had multiplied the effect of lectures, sermons, political speeches, and literary societies’ publications. Newspapers and other periodicals provided the general public with an abundance of information, opinion and drama. While magazines like *McClure’s* could afford the time for in-depth reporting, daily newspapers were limited by publication schedules and costs to straight news, editorials, and human interest stories.³⁹

The newspapers of the late nineteenth century, regardless of the exact political position of their publishers and editors, were characterized by their support of the *status quo*, or rather, by their opposition to the more radical political positions taken by such groups as the Populists and labor unions. From Godkin’s partisan, but intellectual and moral, crusades to the crude sensationalism of “yellow journalism,” the nation’s press was marked with a decided political bias.⁴⁰ To the extent that the press influenced the political process, its purpose seems to have been to lend support to the perspective of big business on such issues as tariffs and combinations. It also encouraged the growing sense of America’s “manifest destiny” so essential to her brief imperialist stage, encouraging her involvement in war with Spain.

Much as is true today, reporters were expected to stick to facts, whether they were assigned to hard news or to human interest stories. It was the editors and publishers of newspapers who expressed opinion explicitly in editorial columns or implicitly through the selection and placement of the various stories of the day.⁴¹ Of the prominent newspaper editors of the progressive period, William Allen White stands out as an example of the influence of editorial opinion on public opinion. As the editor of the Emporia (Kansas) *Gazette* from 1901 to 1917, White “played an ever-increasing role in progressive activities,” but never jumped too far ahead of the ideas and values held by the average American.⁴² He was an enthusiastic supporter of Theodore Roosevelt’s brand of progressive thinking and agreed with him that “government had to see that justice existed between corporations and . . . workers and between corporations and the consuming

³⁸ Ibid., p. 72.

³⁹ Smith, P. (1984), pp. 376-377; Hughes, H. M. (1981) *News and the human interest story*, 2nd ed. New Brunswick, NJ: Transaction Books.

⁴⁰ Commager (1950), p. 69.

⁴¹ Hughes, H. M. (1981), pp. 71-72.

⁴² Johnson, W. (1947), p. 128.

public.”⁴³ Although White was associated for a time with *McClure's*, and maintained friendships with Steffens and Baker, he never wrote muckraking articles,⁴⁴ as he was “more prescriptive, more partisan, and more political than were the muckrakers.”⁴⁵

The *Gazette* was a Republican newspaper. Its editorial policy from before White's day was anti-Populist in the heart of Populist territory, and the paper continued under White's leadership to deplore the extreme positions Populism had taken with regard to economic reform, while quietly endorsing some of its political agenda under the guise of progressivism. White agreed with the position Theodore Roosevelt (and most of the middle class professionals known as progressives) had taken that “the adoption of what is reasonable in the demands of the reformers is the surest way to prevent the adoption of what is unreasonable.”⁴⁶ Despite being a lifelong Republican, White urged voters to elect “honest” Democrats rather than blindly vote the party line. He wrote, “Parties are means for good government and not its ends. It is better to be a bolter to a party than a traitor to the state.”⁴⁷

In addition to editorial columns of newspapers, there were other influential publications in the progressive era that were even more outspoken in taking positions on government and economic reform. Of the writers of these works, known as publicists, three stand out as examples: Herbert Croly, Walter Lippmann, and Walter Weyl, all of whom took advantage of the market the progressive movement created for intellectual production and publication.⁴⁸ According to Forcey (1961), the thinking of these three men, however they differed from each other, helped move America away from the tenets of the old liberalism of the nineteenth century into a new liberalism—one based on “a conviction that only the conscious, co-operative use of government power can bring reform.”⁴⁹

All three were instrumental in the development of, and served as political editors for, *The New Republic*, the nation's foremost liberal journal. As authors they were widely read both by the public at large and by influential political actors. Theodore Roosevelt entertained them at Oyster Bay, and it has been argued that Croly's *The Promise of American Life* inspired the format of Roosevelt's Bull Moose platform and the series of political speeches by candidate Roosevelt later published as his *New Nationalism*. Croly's perspective on government reform was founded on cementing the movement toward preeminence of the national government that had been building since the Civil War. Croly believed that American standardization and industrialization had led to a cultural

⁴³ Ibid., p. 108.

⁴⁴ Ibid., p. 138.

⁴⁵ Ibid., p. 131.

⁴⁶ Ibid., p. 118.

⁴⁷ Ibid., p. 142.

⁴⁸ Forcey, C. (1961) *The crossroads of liberalism: Croly, Weyl, Lippmann, and the Progressive Era*. New York: Oxford University Press, p. xxvii.

⁴⁹ Ibid., p. xiv.

void and that it was a divisive force that had to be counterbalanced by strong central government—government headed by a charismatic leader in the White House.⁵⁰ Despite the period’s relative prosperity—not typically the climate that spawns reform movement—Croly’s work is infused with “a sense of crisis.”⁵¹ He argued that the passive Jeffersonian tradition of democracy in America was vulnerable to the power of concentrated wealth that had amassed since the Gilded Age. Reformers who relied on the noble, if archaic, principles of the early republic were, in his opinion, “unwitting reactionaries.” The kind of reform needed, he contended, would not be aimed against big business, but would, rather, build a national community and government that could contend with the power wielded by big business.⁵² His “new nationalism” sought Jeffersonian ends—democratic governance—by Hamiltonian means—centralizing and concentrating.⁵³

Walter Weyl’s *The New Democracy*, also published in 1912, differed from Croly’s work in that it was not focused on one idea for reform.⁵⁴ Weyl painted the platform for reform with broad strokes, building on many aspects of the progressive agenda. An economist in educational background and pro-labor in perspective, he was much less conservative than muckrakers like Baker had been in the decade before.⁵⁵ As opposed to the “trust-busting” advocated by Croly and most other progressives, Weyl proposed “a long-term policy of nationalization of major industries,” including government ownership of railroads and coal mines.⁵⁶ Weyl recognized that fragmentation of the reform movement endangered its purposes and sought a unifying theme. In *The New Democracy*, he pointed out that one motivating circumstance of those promoting reform was that they were principally consumers as opposed to producers in the economy. Capitalizing on this political bond, tenuous though it was, he argued, could lead to gradual reform and realization of the “impulse for a new democracy.”⁵⁷ This “consumerist” cast to Weyl’s thinking was expounded by the Wisconsin reform movement of Robert LaFollette, and has evolved into one of the principal bases for today’s procedural democracy.⁵⁸

Walter Lippmann was the *enfant terrible* of *The New Republic*’s editors. While at Harvard, he decided on journalism as a career and, as of 1910, worked with Lincoln Steffens as a “leg-man,” and later as an editor, for the muckraking journal *Everybody*’s.⁵⁹

⁵⁰ Forcey, C. (1961), pp. 23-25.

⁵¹ Ibid., p. 26.

⁵² Ibid., p. 27.

⁵³ Ibid., p. 29.

⁵⁴ Ibid., p. 78.

⁵⁵ Weyl and Baker had favored opposing sides in reporting the anthracite coal strike of 1902, with Weyl an avowed partisan of the labor side. See Forcey, pp. 66-70.

⁵⁶ Forcey, C. (1961), p. 84

⁵⁷ Ibid., p. 82.

⁵⁸ Sandel, M. J. (1996) *Democracy’s discontent: America in search of a public philosophy*. Cambridge, MA: Belknap Press.

⁵⁹ Forcey, C. (1961), pp. 101-105.

Lippmann's early infatuation with socialism placed him in opposition to progressive reform ideas that involved business approaches, however, he drifted away from the socialist cause as he could not sustain belief in what he called the "myths" it espoused. Lippmann saw initiative as an individual quality, not something arising from the masses, and he could not accept the misery of the laboring man as a plot of the ruling classes. More than his fellows at *The New Republic*, his move to progressivism involved a considerable shift to the right.⁶⁰ Before he completed that shift, he wrote *A Preface to Politics*, in which he identified "the widespread apathy of the people, not the depredations of the special interests, to be the real cancer of American politics."⁶¹ Influenced by Sigmund Freud, Lippmann argued that because government principally developed negative laws—laws that forbade certain activities or practices—it "invited first-class neurosis."⁶² Forcey (1961) argues that Lippmann carried the application of Freudian psychology to social problems too far—that what might be applicable in understanding individual problematic behavior could not be so easily transferred to social behavior (p. 112). Lippmann's description of the ideal American leader—his creative statesman whose programs would be implemented based on his psychoanalytic understanding of the dynamics of social purposes, not on reason alone—seems more dangerous even than Croly's, especially from a viewpoint that encompasses the rise of fascism yet to come.⁶³ Like Croly, Lippmann centered his hopes for leadership and change in government on Roosevelt. Although Theodore Roosevelt fell short of the perfect enlightened leader, he came closer to that ideal, in Lippmann's view, than did Wilson, because of his vitality and militancy.⁶⁴

The publication and dissemination of editorial and political opinion did much to keep discussion about social and governmental reform alive through the first two decades of the twentieth century. Despite the relative prosperity of the era, newspapers, journal articles, and books managed to portray this as a time of crisis for American democracy. The positions they took and the specific reforms they advocated may have been different in content and degree, still journalists, editors, and publicists kept the movement for reform simmering. And, both the professional practice of public administration as we know it today and public administration as a self-conscious field of study were born out of the impulse for reform that coalesced in their writing at the beginning of the twentieth century.

The Academic Literature and Government Reform

⁶⁰ Ibid., pp. 106-108.

⁶¹ Ibid., p. 109.

⁶² Ibid., p. 111

⁶³ Ibid., pp. 111-117.

⁶⁴ Ibid., p. 116.

It can be argued that the professional practice of public administration and the progressive reform movement are siblings, sharing the same family roots—the rise of an educated middle class, economic growth and the “success” of capitalism, the influence of modern science and technology, and an enduring faith in progress and effective human agency. O’Toole (1984) even declares that American public administration, in its attempts through history to reconcile democratic political principles with bureaucratic form, is characterized by an “orthodoxy of reform.”⁶⁵ Nelson (1982) notes the irony or paradox that “repeated efforts to bring government under political branch control have enhanced the power of bureaucracy.”⁶⁶ In other words, within the public administration family, the two sibling interests—democracy and bureaucracy—engage in a classic rivalry and struggle with bureaucratic form emerging victorious.

Progressive reformers and early practitioners and scholars of public administration had several commonalities, according to O’Toole: the assumption that Americans shared a vision of what constitutes the good life; a rejection of articulated ideology; a desire to solve problems caused by “a failure of means or of an inadequate means-ends organic adjustment” not by structural flaws or other faults inherent in the adopted definition of the good life; a tendency to shift positions on issues on a regular basis, even to the point of “incoherence;” and, a lack of clarity about who the beneficiaries of reform might be.⁶⁷ It is easy to argue that these commonalities remain in today’s field, although the intended reduction in tension between democracy and bureaucracy has been made more difficult by the persistence of the idea that politics, or policy making, can be separated from policy administration.

In his famous *Study of Administration*, Wilson (1992) not only put forward the notion that administration should be kept separate from politics, but also saw the business corporation as an appropriate model for administrative agencies,⁶⁸ and the businessman as the “expert” who is “morally entitled and mentally equipped to run” them.⁶⁹ He considered current activities in civil service reform—efforts on the local level and through the Pendleton Act at the national level—to be first steps in a larger scheme of administrative reform. Changes in personnel would need to be followed by improvement

⁶⁵ O’Toole, L. J., Jr. (1984) American public administration and the idea of reform. *Administration and Society*, 16, 2, pp. 141-166; and D. Waldo (1984) *The administrative state: A study of political theory in American public administration*, 2nd ed. New York: Holmes & Meier, Publishers, pp. 73-75.

⁶⁶ Nelson, M. (1982) A short, ironic history of American national bureaucracy. *The Journal of Politics*, 44, pp. 747-778, p. 774.

⁶⁷ O’Toole (1984), p. 147.

⁶⁸ Wilson, W. (1992) *The Study of Administration*. In Shafritz and Hyde, eds. *The classics of public administration*, 3rd. ed. Pacific Grove, CA, Brooks/Cole Publishing Company, p. 18; Weibe, R.H., *The search for order 1877-1920* (New York, Hill and Wang, 1967), p. 217.

⁶⁹ Waldo, D. (1984) suggests this as Wilson’s notion (p. 91).

in “the organization and methods of our government offices” to bring the benefits of a science of administration to bear on American government.⁷⁰

Wilson pointed out that in a democracy, where the people collectively were sovereign and organization, therefore, more difficult, reform must necessarily be a slow process and “full of compromises.”⁷¹ Politics, resulting as it does from shifting public opinion, could be viewed as disruptive of administrative process. It is difficult to manage government processes and personnel with authority derived from a multiple sovereign. To whom would officials be responsible? How could responsibility be tracked in a political system where power is shared among co-equal branches and its exercise is thereby obscured? How might the balance between expert officials and public opinion be maintained? These questions of Wilson’s have been interpreted as a criticism of the American constitutional arrangement of separation of powers.⁷² He was throughout his academic and political career an eminent constitutional scholar, however, in his *Study*, he seems centrally concerned with maintaining administrative practice pure of politics. He recommends the professionalization of the corps of civil servants through educational programs on the German or French models, suggesting that we may study and adopt their administrative methods—without likewise adopting their political systems—as a means for “putting our own politics into convenient practice. . . . making what is democratically politic towards all [,] administratively possible towards each.”⁷³

Wilson recognized the uniqueness of the American federal arrangement and was concerned about the tension between American local self-government and federal government. He advocated as a duty that students of government and citizens seek to perfect what he called our “systems within systems”—that the federal partners should continue to be their own masters yet be interdependent and cooperative.⁷⁴

Wilson’s argument for the separation of politics and administration was reinforced by that of Frank Goodnow in his (1900) text, *Politics and Administration: A Study in Government*. He defines the political process as the expression of the will of the state and cautions that this must remain separate from the administrative processes involved in the execution of that will.⁷⁵ Not only must execution be a separate function but also be subordinate to what he calls the “expressing authority”⁷⁶ or legislature, a position that foreshadows Finer’s (1940) argument. Goodnow further connects administration to the

⁷⁰ Wilson, W. (1992), p. 11.

⁷¹ Ibid.

⁷² Most notable among such interpretations is John Rohr’s. See his (1986) *To run a constitution*. Lawrence, KS: University Press of Kansas, especially Chapter 5.

⁷³ Wilson, W. (1992), p. 23.

⁷⁴ Ibid., p. 24.

⁷⁵ Goodnow, F. (1992) *Politics and Administration*. (pp. 25-28) in J. M. Shafritz and A. C. Hyde, eds. *Classics of public administration*. Pacific Grove, CA, Brooks/Cole Publishing Company, pp. 26-27.

⁷⁶ Ibid., p. 27.

executive and stresses the difficulty in maintaining congressional political control over administration that is inherent in separation of powers.

The orthodoxy of this politics-administration dichotomy was confirmed by both current trends in the practice of public administration and by early philosophical foundations of the nascent American social sciences.⁷⁷ The natural sciences, as models and legitimating institutions for scholarship at the turn of the century, particularly for American scholars,⁷⁸ did not allow for opinion or passion in their pursuit of knowledge. American scholars incorporated those strains of European social thought that would bolster the ideological stance of “American exceptionalism”⁷⁹—the notion that the benefits of modernity could be enjoyed in the American republic, because of its special properties, unshadowed by the darker interpretations and predictions of pessimistic continental thinkers.⁸⁰ The lawfulness of natural science had left its mark on social thought, as well. As Ross notes, “The major Progressive thinkers continued to believe that human nature and historical evolution embodied norms that science would be able to reveal or construct.”⁸¹ The methods of science and technology, then, could be applied to social problems—those engendered by the rapid industrial and population growth, immigration and urbanization, and economic dislocation which lent the era its sense of uncertainty and its accompanying perceived need for order—affecting their resolution.

Following a bloody civil war that resolved none of the issues that gave rise to it, a need for some kind of government reform was widely felt. The unexpected electoral success of the Populist movement, the economic downturns of the 1870s and 1890s, and the rise of organized labor and the violence of strikes caused understandable concern in conservative elements in American government. Even the most conservative elements of society would approve moderate government reform to prevent more radical change. In the views of many, the populist revolt seemed a precursor of socialism and class warfare. Some controlled and rational change in government, some regulation of the economy, some concessions to popular democracy were considered advisable as a means of forestalling that possibility. This was particularly true if business interests took the lead in designing those means.⁸² It was out of this general logic that the progressive reform movement and, ultimately, the Progressive Party were born.

⁷⁷ See, for example, M. O. Furner (1975) *Advocacy and objectivity: A crisis in the professionalization of American social sciences*. Lexington, KY: The University Press of Kentucky); P. T. Manicas (1987) *A history and philosophy of the social sciences*. London: Basil Blackwell; and D. Ross (1991) *The origins of American social science*. (Cambridge: Cambridge University Press.

⁷⁸ Ross (1991) p. xiii.

⁷⁹ Ross (1991), especially Chapter 2. For a current analysis of the American exceptionalist vision, see S. M. Lipset (1996) *American exceptionalism: A double-edged sword*. New York, W. W. Norton and Co.

⁸⁰ Ross (1991), pp. 48-50.

⁸¹ *Ibid.*, p. 157.

⁸² See, for example, Ross (1991); Goldman, E. F. (1956) *Rendezvous with destiny: A history of modern American reform*, Rev. Ed. New York: Vintage Books; and, Weinstein, J. (1968) *The corporate ideal in the liberal state: 1900-1918*. Boston: Beacon Press.

Progressive Reforms at the Local Level

The earliest successes of the progressive impulse for reform were enjoyed at the local level. It was in growing American cities that middle class reformers saw first hand the abuses of patronage and it was in the cities of the northeast and Great Lakes states that the influx of European immigrants and, later, former slaves, became problematic. These cities were the principal breeding ground for machine politics. Machine politics was not, as Goldman reminds us, a transitory or exceptional phenomenon. It was “a deeply entrenched system, in which the politician, with an appropriate profit for himself, sold the United States to its citizens” in much the same way as any merchant sold goods to the public.⁸³ And, as Hofstadter points out, the few positive services delivered by political machines were unnecessarily costly and their distribution grossly inequitable.⁸⁴

While the practice of machine politics has been justifiably denounced, it was not without any redeeming characteristics. In exchange for their votes, citizens received what we today would label welfare benefits—intercession with an employer on behalf of a “bought” voter, the rent or utilities paid for an unemployed family, minor (or even major) criminal infractions “fixed.” Political appointments went from the hand of the successful machine politico to the ward healers who delivered the votes. Contracts and other monetary rewards were distributed to the party faithful. In cities rapidly outgrowing their capacity to provide minimal services to citizens, these were real benefits, even though they were of the dubious and short-term variety.⁸⁵ It was not until greed went beyond the bounds of “acceptable” dishonesty, that middle class citizens and small businessmen determined that the machines must go. Reformers thought that by bringing about such changes as the direct primary, they could eliminate machine politics. Such measures were not successful in destroying the bosses or the machines, but they had a negative effect on political party organization that is still felt today.⁸⁶

Local government managed by politicians was targeted for reform at the beginning of the 20th century. According to Weibe (1967), it was less a matter of changed conditions in the cities—urban decay and sprawl were already well under way before the turn of the century, but rather the changing perceptions of the middle class and the energetic young reform-minded members of that class that precipitated the push for reform. Where expectations for city services were not realized, where all around there was seen shoddy work and apparent theft in contracts and franchises, these reformers demanded change. The American political system had been unable to deliver the quantity and quality of urban services seen as needed. “A patchwork government could no longer manage the

⁸³ Goldman (1956), p. 12.

⁸⁴ Hofstadter (1955), pp. 266-267.

⁸⁵ Ibid.

⁸⁶ Ibid., p. 267.

range of urban problems with the expertise and economy that articulate citizens believed they must have.”⁸⁷

Progressive reformers were not necessarily anti-business.⁸⁸ Middle class reformers and business leaders participated together in two complementary strategies, developed and spearheaded largely by chambers of commerce or other organizations of local entrepreneurs, for the rationalization of city government: commission government and manager-council or commission-manager government. Natural disaster, in the form of a tidal wave, brought the first commission city government to Galveston, Texas, in 1900, organized by a committee of local businessmen when the corrupt alderman city government proved unable to cope. Their approach to remedying the destruction of the port and city was to envision it as a “great ruined business” and to model a new city government on the most efficient form they knew—the structure and management processes of a business corporation.⁸⁹

The Galveston plan—with a commission replacing mayor and aldermen and each commissioner heading a city department—was copied in cities throughout Texas, and from there spread north. Known in the northern states as the “Texas Idea,” the commission form of city government was adopted by Des Moines, Iowa, in 1907, and from there was widely dispersed across the country. By 1913, more than 300 cities had adopted the commission form of government.⁹⁰

While successful in some respects, the commission form of government was not without serious structural flaws of its own. The combination of the executive and legislative functions of city government provided opportunities for both mismanagement and malfeasance and, when unchecked, brought even more politics into play than had been the case previously. Commissioners were elected more for their political popularity than their executive ability. Logrolling and favor-trading tactics allowed commissioners to consolidate the power positions of their respective departments and, instead of becoming cooperative components of good city government, the departments engaged in destructive rivalries.⁹¹

These difficulties led to the development of the council-manager or commission-manager alternatives, early examples of which are the adoptions of city manager governments by Sumter, South Carolina (1911) and Dayton, Ohio (1913).⁹² This combination of

⁸⁷ Weibe (1967), *The search for order, 1877-1920*. New York: Hill and Wang, p. 167.

⁸⁸ Ibid., and Wiebe, R. H. (1962) *Businessmen and reform: A study of the progressive movement*. Cambridge, MA: Harvard University Press; Sandel (1996); Weinstein (1968); and Goldman (1956).

⁸⁹ Weinstein (1968), p. 96.

⁹⁰ Ibid., p. 97.

⁹¹ Ibid.

⁹² Staunton, Virginia, appointed a city manager in 1908, but its charter did not include a commission, so the city is not generally considered the first to adopt city manager government (Weinstein, 1968, p.98).

commission and manager was seen to curb the worst excesses of the commission model and was widely supported by business communities and reformers alike. In fact, so strong was business support that when a convention of representatives of merchants, bankers and manufacturers unanimously endorsed this model, the legislature of the State of Pennsylvania enacted a law in 1913 requiring all third-class Pennsylvania cities to adopt commission charters.⁹³

Professionalization was another early strategy of the progressive reformers. Where Jacksonian democracy assumed that the tasks of government administration were so simple and straightforward that they could be accomplished by ordinary citizens and could be offered as rewards for political party work, the progressives saw the need for specialists to run the government. Corrupt government practices and jockeying for favors—dramatically highlighted by the assassination of President Garfield in 1881—brought a call for the replacement of partisan political appointees at all levels of government with politically neutral professionals. This theme was embodied at the federal level by passage of the Pendleton Act in 1883. This was a strategy, to some extent, of returning the management of government to “gentlemen” or at least to “sober, industrious middle class persons” whose motives for entering government service would conform to a patrician and pious standard.⁹⁴ The neutrality deemed necessary by reformers required that civil servants be relatively free from political entanglements and pressure and the professionalism to which they aspired was modeled on the business corporation.⁹⁵

The Beginnings of National Reform

One significant contribution of the business community to government form was the notion that the chief executive could control the activities of subordinates with a view to efficient and economic production of goods and services. Among the tools used by corporate chief executives to exercise control were planning, personnel management, and fiscal controls. In its earliest stages, administrative reform aimed at bringing these tools into use in managing government’s provision of public service.

The first of the national reforms designed to eventually counteract the “spoils system” in personnel practices began to take shape, ironically, in the corruption-ridden Grant Administration with the passage of an appropriations bill by the Forty-first Congress (1871) that contained a rider allowing the president to make rules and regulations for the civil service.⁹⁶ This half-hearted response to the excesses of patronage brought

⁹³ Weinstein (1968), p. 97ff.

⁹⁴ Goldman (1956), p. 16.

⁹⁵ Weibe (1967); and Weinstein (1968).

⁹⁶ Shafritz, J. M., N. M. Riccucci, D. H. Rosenbloom, and A. C. Hyde (1994) *Personnel management in government: Politics and process*, 4th Ed., Rev. and Exp., New York: Marcel Dekker, p. 13.

about the first Civil Service Commission, the first examinations, and the first appointments to federal civil service positions in 1872 and 1873. However, seeing that they had created a monster that might bring the political powers of patronage to an end, Congress terminated the program in 1875 by cutting its funding.⁹⁷

In what Van Riper (1987) has called “the second administrative state,”⁹⁸ this early foundation in civil service reform was built upon by local pressure for an end to patronage appointments. The National Civil Service Reform League was established in 1880, and the New York Civil Service Reform Association, one of many local groups, drafted legislation for national reform of personnel practices in that same year. The event that catalyzed reform, the assassination of President James Garfield by a disappointed office-seeker in 1881, merely created a sense of urgency that speeded up a process already well under way. In 1883, the draft legislation became the Pendleton Act, and a merit-based, professional civil service was founded.⁹⁹

Creation of the bipartisan Civil Service Commission in 1883 did not have an immediate effect on partisan patronage—the law only applied to 12 percent of positions in the beginning.¹⁰⁰ The Commission did, however, establish principles for public employment, many of which remain today. Among these are merit as a basis for hiring, retention, and promotion, and public employment free from undue partisan political pressure. The provisions of the Pendleton Act can justifiably be characterized as an expression of the middle class morality of the age, reflecting the reformers’ disgust with machine politics and the patronage system, and fed on their fear of the consequences of a majoritarian democracy under conditions of rapid population growth through immigration.¹⁰¹

The second tool of management control to come under the gun of progressive reformers was the budgeting process. Prior to the twentieth century, the national budgeting process involved individual administrative agencies presenting their appropriations requests to the Congress directly, resulting in policy overlaps, an apparent lack of controls on spending, and enhanced opportunities for certain agencies and their respective oversight committees to develop policy that favored special interests. It was the reformer’s aim to bring order to budgeting by bringing budgeting under the control of the executive.

⁹⁷ Ibid., pp. 14-15.

⁹⁸ P. Van Riper designates the period beginning in the late nineteenth century and extending through the end of the Second World War in this manner. See his (1987) *The American administrative state: Wilson and the founders*. (pp. 3-36) in R. C. Chandler, ed. *A centennial history of the American administrative state*. New York: The Free Press, p. 14.

⁹⁹ Shafritz, et al. (1994), p. 16; Cayer, N. J. (1989) Public personnel and labor relations. In J. W. Rabin, B. Hildreth, and G. J. Miller, eds. (pp. 277-308) *Handbook of public administration*. New York: Marcel Dekker.

¹⁰⁰ Van Riper (1987), p. 19.

¹⁰¹ See, Mosher, F. C. (1982) *Democracy and the public service*. 2nd ed., New York: Oxford University Press; and D. Waldo (1984), p. *xliv*.

The expansion of government that followed the Civil War, although it never kept pace with the expansion of the private economic marketplace, increased the complexity of an already disjointed policy and budget process. Acknowledging this fact and recognizing from first-hand experience the difficulty faced by a president in executing public policy that resulted from it, the Taft Commission on Economy and Efficiency in Government (1912-1913)¹⁰² developed plans for the nation's first executive budget. Because "finance was a jealously guarded legislative function and [because American] separation of powers did not make cooperation easy,"¹⁰³ the proposals outlined in the Taft Report were not enacted into law until the Budget and Accounting Act of 1921. This act created the Bureau of the Budget whose role it was to integrate various agency budget requests into a unified executive budget. The Bureau began "central clearance of agency legislative proposals, allotments and budget ceilings were introduced, and an effort at regional coordination was made."¹⁰⁴ Accounting and pre- and post-audit functions were removed by the Act from executive hands and became the responsibility of Congress's General Accounting Office and the Comptroller General.

Administrative Reform and the New Deal

Building on these beginnings, administrative reforms came to be associated with Franklin Roosevelt's agenda of social reform following the Great Depression. This led to a formalizing of the corporate, bureaucratic model of administration—indeed, the business community was a more than just a willing partner with more ideological reformers and the academic community in early phases of administrative reform.¹⁰⁵ The Brownlow Committee built an executive branch in which management processes and administrative functions were centralized in the Executive Office of the President.¹⁰⁶ The Committee's report took care to point out that "separation of powers [which] places in the President, and the President alone, the whole executive power of the Government of the United

¹⁰² It is interesting to note that among the six members of the Taft Commission were Frederick Cleveland, who was among the organizers of the New York Bureau of Municipal Research, and W. F. Willoughby and Frank Goodnow, who were early writers of public administration textbooks. *Ibid.*, p. 20.

¹⁰³ *Ibid.*, p. 17.

¹⁰⁴ *Ibid.*

¹⁰⁵ See, for example, Rohr (1986); Wiebe, R. H. (1962) *Businessmen and reform: A study of the progressive movement*. Cambridge, MA: Harvard University Press; and, Hofstadter, R. (1955) *The age of reform: From Bryan to F.D.R.* New York: Alfred A. Knopf.

¹⁰⁶ The President's Committee on Administrative Management—Loius Brownlow, Luther Gulick, and Charles Merriam—in their 1937 Report recommended creation of the Executive Office of the President, reduction in the independence of regulatory commissions, streamlining administrative agencies under the direction of 12 Cabinet-level departments, bringing the Bureau of the Budget directly under the President's control and expanding its role in management, and other means of rationalizing the President's authority in policy implementation. The Committee was quite open in its use of the business corporation model. See, *Report of the President's Committee on Administrative Management* (1937) Washington, DC: Government Printing Office.

States.”¹⁰⁷ It also indicated that separation of powers was being confounded by the proliferation of administrative agencies, especially independent regulatory agencies—“a new and headless ‘fourth branch’ of the Government.”¹⁰⁸ Its recommendation was to streamline and reorganize the executive branch ensuring that all administrative agencies would have a head—ultimately, the President. As Rohr (1986) puts it, “instead of dividing executive power in order to weaken it, as the framers had done to legislative power, the Brownlow Committee argue[d] vigorously for its unification under the managerial control of the president.”¹⁰⁹

The reorganization arising from the Committee report brought new emphasis to the role of the president as chief executive officer (similar to the chief executive officer of the business corporation) and as policy maker, stressing that the president is elected by all of the people and is, therefore, the best representative of the public interest.¹¹⁰ It established, as well, a new understanding of the ends of government—a positive state furthering social welfare and enhanced democracy—rather than protection of individual rights.¹¹¹ The Brownlow structural reforms and the development of the executive budgeting process as a tool for presidential management, shifted the balance in the contest between the two political branches for policy primacy toward the president. By the time of the Second World War, administration had become more strongly associated with the presidency, not the Congress where special interests and the political process associated with special interests were assumed to predominate.

The driving force behind the Brownlow administrative reforms and the subsequent development of the managerial presidency was Luther Gulick.¹¹² His “ideal government is one in which the chief executive, supported by a special staff, draws the plans; the legislature accepts or rejects proposed policies; the executive carries out the adopted plan; and the public exercises general control through participation in political parties and pressure groups.”¹¹³ Gulick and Lyndall Urwick co-edited and were contributing authors to a series of professional papers and memoranda created to inform the work of the

¹⁰⁷ *Report* (1937), pp. 31-32.

¹⁰⁸ *Ibid.* Waldo (1984) describes this as an appeal by the Committee to constitutional principles in defense of what seemed like a shift from congressional control of agencies to presidential control. The *Report* did not go unchallenged on this appeal to separation of powers. The young Brookings Institution, following its first director, W. F. Willoughby, identified this as an attempt to increase presidential authority without providing sufficient countervailing power in the Congress, thus upsetting the balance of authority set out in the Constitution (pp. 114-115).

¹⁰⁹ Rohr (1986), p. 146.

¹¹⁰ *Ibid.*, p. 2. The *Report* attributes three roles to the President: political leader—of his party, of the Congress, and of the people; as a “symbol of our American national solidarity;” and as “the Chief Executive and administrator within the Federal system and service.”

¹¹¹ Rohr (1986), pp. 146-149.

¹¹² Fry, B. R. (1989) *Mastering public administration: From Max Weber to Dwight Waldo*. Chatham, NJ: Chatham House Publishers, Inc., pp. 73-97.

¹¹³ *Ibid.*, p. 78.

Brownlow Committee.¹¹⁴ These papers set forth a plan for structuring administrative agencies that reflected the influence of the business corporation and city management movement, and is remembered today by means of the famous acronym—PODSCORB—which is derived from the functions of the executive: planning, organizing, staffing, directing, coordinating, reporting and budgeting.¹¹⁵ Among the principles of administration proposed by Gulick, Urwick, and the Brownlow Committee were: hierarchical line-and-staff structure; authority commensurate with responsibility vested in a single executive (unitary command); staff provided to the administrator for research and evaluation purposes; clear lines of authority and an appropriate span of management at all levels; all related work administered as a unit; functional division of labor;¹¹⁶ and, boards or commissions limited to quasi-judicial or quasi-legislative work.¹¹⁷

Both Gulick and the Brownlow Committee freely borrowed ideas from Henri Fayol, whose 1916 study of the firm from the top down is cited extensively by Urwick, and from Frederick W. Taylor's "scientific management" movement of the 1920s.¹¹⁸ Fayol developed a list of fourteen principles for management: division of work; authority and responsibility; discipline; unity of command; unity of direction; subordination of the individual interest to the general interest; remuneration of personnel; centralization; scalar chain (line of authority); order; equity; stability of tenure of personnel; initiative; and esprit de corps.¹¹⁹ The resemblance of Fayol's principles to the PODSCORB functions of the executive is uncanny. Although Taylor's work was perhaps less influential, it is his understanding of specialization and division of labor that is reinforced in *The Papers* and in the Brownlow report. For Taylor, an engineer, scientific management meant learning the processes involved in the work and then recording and codifying them, through time and motion studies and other techniques, into a science of management; "scientific" selection and development of workers; matching the work processes to the workers; and, perhaps most significantly, dividing the work and responsibility between the managers and the workers.¹²⁰ In scientific management, according to Waldo (1984) one finds the wedding of "the one best way" and "the one best man," a combination that can be seen in both the development of planning and research and in personnel reforms.¹²¹

¹¹⁴ Gulick, L. and L. Urwick, eds. (1937) *Papers on the science of administration*. New York: Institute of Public Administration.

¹¹⁵ Gulick, L. (1937) Notes on the theory of organization. (pp. 3-45) in Gulick and Urwick, *Papers*, p. 13.

¹¹⁶ Tasks could be grouped according to four criteria: purpose, process, clientele or material, and location. See, Fry (1989), p. 85; Gulick, Notes, p. 15.

¹¹⁷ Fry (1989), p. 85.

¹¹⁸ Urwick, L (1937) Organization as a technical problem. (pp. 47-88) in Gulick and Urwick, *Papers*, pp. 77-78.

¹¹⁹ Fayol, H. (1987) *General and industrial management*, rev. and trans. I. Gray. Belmont, CA: David S. Lake, Publishers, pp. 61-82.

¹²⁰ Fry, B. R. (1989), p. 54; Taylor, F. (1992) Scientific management. (pp. 29-32) in Shafritz and Hyde, eds. *Classics*, pp. 29-31.

¹²¹ Waldo, D. (1984), p. 58.

Although he is associated by many with an administrative science based on Wilson's politics/administration dichotomy, Gulick actually saw it as "impractical, impossible, and undesirable to strictly separate politics and policy from administration."¹²² He advocated a tentative blend of the two, assigning different levels of political involvement to different levels of the policy process. In Gulick's scheme of things: elected officials serve to maintain a balance among "experts, bureaucrats, and interest groups;" political appointees act as intermediaries between experts and the public; the administrator, while remaining loyal to the decisions of elected officials, would be the one to interpret and coordinate public policy; and the technician would be limited to the operations requiring his/her technical expertise.¹²³ In this scenario, then, the role of politics for the administrator—in every case less pervasive than that of the political executive—would be centered on providing advice on policy before its adoption and interpretation of policy once elected officials have made the policy decision.

What have come to be known as the classical principles of administration were those embodied in *The Papers* and the Brownlow Committee's *Report*. And, it was these principles that Herbert Simon decried as naive "proverbs of administration."¹²⁴ Simon demonstrated that each of the principles—specialization, unity of command, span of control, and organization by purpose, process, clientele, or place—could be implemented in more than one way, with different results.¹²⁵ He argued that the classical principles were oversimplified description, not conceptually sound bases for theory in administrative science. He proposed that a more accurate, "scientifically relevant" description of an organization would arise from an analysis of its decision processes.¹²⁶

And, once freed from the value-laden sphere of politics, administrative practice could, it was thought, be developed into something approaching a science. This notion dovetailed nicely with the beginnings of public administration as a field of scholarly inquiry and with the growth of the behaviorist movement in the social sciences generally. Simon's (1967) *Administrative Behavior* developed the notion of another dichotomy to parallel that of politics/administration—the fact/value dichotomy. Values are associated with politics—policy direction arises from the sorting and contesting of values in that process. Once policy decisions are reached, Simon argued, administrative science could, by the rational application of fact, determine the most efficient and effective means of implementing that policy. However, while Simon publicly denounced the guiding

¹²² As described by Fry, B. R. (1989), p. 80.

¹²³ *Ibid.*, p. 81.

¹²⁴ An excellent discussion of the development of the principles of administration and of the critique of Simon and others can be found in Light, P. C. (1995) *Thickening government: Federal hierarchy and the diffusion of accountability*. Washington, DC: The Brookings Institution, pp. 1-6.

¹²⁵ Simon, H. (1992) The Proverbs of Administration. (pp. 150-165) in Shafritz and Hyde, eds. *Classics*, pp. 150-158.

¹²⁶ *Ibid.*, p. 159. Waldo, D. (1984) identifies Simon as a logical positivist, and lays at his feet the responsibility for bringing this philosophy to public administration (p. xxxix).

principles of classical administration developed by prior reformers, his stress on efficiency as the ultimate goal of administration served to reinforce past practices.

Reform in the Era of the “Bureaucratic State”¹²⁷

The history of administrative reform which followed World War II can be seen as a series of repeated efforts to achieve that goal of efficiency, and science, in the form of what came to be known as the policy sciences, was utilized in the effort.¹²⁸ While social and scientific research in aid of answering policy questions was conducted before the Second World War, it was the effort of fighting such a war to its conclusion that demonstrated just how productive a wide-scale research agenda could be. Building on the success of operations research and other wartime measures, both the Congress and the President lent their support to government sponsored research in the sciences through creation of the National Science Foundation and the Atomic Energy Commission.¹²⁹ Multidisciplinary, and largely quantitative, social policy research efforts were initiated, as well, and came into their own in the years of the Great Society, particularly in the area of program evaluation.¹³⁰ While not precisely a “reform” movement itself, this emphasis on quantitative science has influenced personnel, budget, and general administrative reforms that followed the war.

The first Hoover Commission, a joint legislative-executive study of government organization, was authorized by Congress in 1947, and made its first report to Congress in 1949. Its provisions in many ways mirrored the findings of the Brownlow Committee—it restated the orthodox view of government organization and “consequently ignore[d] the other possible forms of organization.”¹³¹ While its emphasis was on further rationalizing department arrangements, consolidating and eliminating overlap, it implicitly worked to strengthen the role of the presidency in the policy process.¹³² It reiterated the Brownlow Committee’s constitutional argument concerning accountability—“strength and unity in an executive make clear who is responsible for faults in administration and thus enable the legislature better to enforce accountability to the people”¹³³—and generally sought to enhance presidential power.

¹²⁷ Van Riper’s (1987) characterization of the post WWII era, p. 25.

¹²⁸ Lerner, D. and H. D. Lasswell, eds. (1951) *The policy sciences*. Stanford, CA; Stanford University Press. Lerner and Lasswell were the first to use this phrase and to articulate what it means.

¹²⁹ DeLeon, P. (1988) *Advice and consent: The development of the policy sciences*. New York: The Russell Sage Foundation, p.21 and pp. 56-60; also, Waldo (1984) p. xiv.

¹³⁰ The “war on poverty” of the Lyndon Johnson years created many programs that yielded reams of statistics for analysis. See, for example, Jeffrey Pressman and Aaron Wildavsky’s (1984) classic *Implementation*, 3rd ed. (Berkeley, CA: University of California Press).

¹³¹ Seidman, H. and R. Gilmour (1986) *Politics, position, and power: From the positive to the regulatory state*, 4th Ed. New York: Oxford University Press, p. 21.

¹³² *Ibid.*, p. 35.

¹³³ Commission on Organization of the Executive Branch of the Government (1949) [Hoover I] *Introduction*, Washington, DC: Government Printing Office, p. 2, emphasis added.

The second Hoover Commission had a slightly different mandate—its authorizing legislation included policy as well as function and form as a subject for study and recommendations.¹³⁴ The specific reports of task forces touched on subjects including Budget and Accounting and Personnel and Civil Service, but the principle objective of the Commission as a whole was efficiency and economy—“to recommend methods by which savings could be made in the expenditures of the agencies without injury to the security or welfare of the country.”¹³⁵

Executive branch reorganization entered a new phase in the Nixon Administration. The Advisory Council on Executive Organization, chaired by Roy L. Ash, was composed almost entirely of businessmen and Washington outsiders. President Nixon initially did not see in reorganization a “vehicle for achieving his political goals” and felt that it could be left in the hands of the Ash Council to apply sound business thinking to making government work better.¹³⁶ One significant result of the Ash Council’s work was the redesignation of the Bureau of the Budget as the Office of Management and Budget in recognition of the many management functions it already performed.

The importance of the White House staff, which began growing in response to the Brownlow Committee’s plea: “The President needs help,”¹³⁷ grew to absurd proportions during the Nixon years. Within the White House, the President was virtually isolated, with access limited to top aides. Those top aides could act as “presidential surrogates” within their specialized policy areas, and these aides were also difficult to access.¹³⁸ The significance of this shift in “reform” thinking was the antipathy displayed by the White House to career civil servants. The Nixon Administration sought control of the bureaucracy, not primarily through structural or process changes, but by means of increasing the number of and level of penetration into agencies by political appointees. Especially important was the fact that many positions now occupied by appointees were strategically important—for instance, undersecretary for administration, where budget, personnel, and management services were housed.¹³⁹

Nixon’s position was that the “presidency exists wholly apart from other institutions and is at one with the people”—a Gaullist plebiscitary presidency.¹⁴⁰ In such a view, the presidency is seen as the voice of the public interest and is considered, therefore, to be

¹³⁴ Commission on Organization of the Executive Branch of the Government (1955) [Hoover II] *Final report to the Congress*. Washington, DC: Government Printing Office, pp. 5-6.

¹³⁵ *Ibid.*, p. 19. A complete listing of the separate task forces and their chairs is found on pp. 7-9.

¹³⁶ Seidman and Gilmour (1986), p. 100.

¹³⁷ The President’s Committee on Administrative Management (1937), p. 5.

¹³⁸ Seidman and Gilmour (1986), p. 108.

¹³⁹ *Ibid.*, p. 109; Light, P. (1995).

¹⁴⁰ Seidman and Gilmour (1986), pp. 110-111, paraphrasing A. Wildavsky (1973) *Government and the people*. *Commentary*, August 1973.

first among the branches of government; the president is considered to have implicit constitutional authority to take whatever actions necessary to carry out the public interest as he has defined it; the government is expected to be unswerving in its loyalty to the president; the powers of agency heads derive from the power of the president; there can be no differentiation between the office of the president and the incumbent; and, the bureaucracy is “the principal threat to presidential power...[and] cannot be trusted because [civil servants] are either disloyal or have divided loyalties.”¹⁴¹ This view of the presidency contributed both to the constitutional crisis of Watergate—clearly the most serious challenge to the viability of the American experiment since the Civil War—and to the growing dissatisfaction with and distrust of “government” we experience today.

In the years that have intervened between the President Nixon’s resignation and today, there has been increasing emphasis on the business orientation to administrative reform. The President’s Private Sector Survey on Cost Control (the Grace Commission), initiated by President Reagan in 1982, concentrated on cost savings, not surprising considering the crisis of deficit spending that began in his administration. Its recommendations have been evaluated as largely unrealistic and clearly ideological in intent, even by those who sympathize with the overall goal of eliminating waste. The Commission’s final report claimed that \$424 billion could be saved in a three-year period if identified “wasteful” practices were replaced with sound business practices.¹⁴² However, when examined closely, the case against the government was often built on incomplete information or inappropriate comparisons with private sector practices.¹⁴³ While some findings and recommendations of the Grace Commission made sense, many, if not most, “ignore[d] nonfinancial public values.”¹⁴⁴ Taken as a whole, the Commission’s report was largely discredited as impossible to implement and, therefore, did not have a major impact on government operations, but only served to further the impression that national government is “big government” and that it wantonly wastes money.

Not until 1993, with the publication of David Osborne and Ted Gaebler’s (1993) *Reinventing Government* and the subsequent implementation of government reform contained in Vice President Gore’s *National Performance Review*, did it seem that an understanding of government purpose significantly different from that of the earliest

¹⁴¹ Ibid., p. 110

¹⁴² Kelman, S. (1985) The Grace Commission: How much waste in government? *The Public Interest*, 78, Winter 1985, pp. 62-82; pp. 62-63. Kelman notes that this amount would have eliminated the deficit at that time.

¹⁴³ Ibid., pp. 63-75. Kelman identifies several “Random Examples of Bureaucratic Absurdity” from the report and found the waste either exaggerated or “necessary” from points of view other than the financial.

¹⁴⁴ Goodsell, C. T. (1984) The Grace Commission: Seeking efficiency for the whole people? *Public Administration Review*, 44 (3), pp. 196-204; p. 199. For example, Goodsell argues that closing small post offices would save money, but at the cost of isolating citizens in rural America.

reformers had come into existence. But in terms of stated goals—efficiency, economy, responsiveness—even this phase of reform reflects the goals of past reformers.¹⁴⁵ The underlying premises of past efforts at reorganization were accepted as given for these presidential and congressional commissions and personnel reforms invoked to fix ‘broken’ government, up to and including today’s “reinvention” movement. Improving efficiency in implementation—means—has been accepted as taking priority over reevaluation of the ends of government in these reform efforts, or recognition that means and ends cannot be separated. The goal of professionalizing the civil service has been pitted against the goal of responsiveness to multiple masters, particularly the president.¹⁴⁶ And, in all of these reform movements, the relationship between citizens and their government has been for the most part left out of consideration.

Revisiting Pendleton: Restructuring the Civil Service

After Watergate and the erosion of public trust in “government” that was associated with it, political actors from both parties took care to campaign on platforms that included some reference to governmental reform. For President Jimmy Carter, who represented himself to voters as a genuine outsider, the reform theme was centered on the civil service, and culminated in the Civil Service Reform Act of 1978 and the creation of the Senior Executive Service.

From the time of Brownlow forward, one goal of administrative reform had been to bring powerful instruments of managerial control to the presidency. The Brownlow Committee proposed the replacement of the Civil Service Commission with a Civil Service Administration—with a single administrator acting in an advisory or staff position reporting to the President.¹⁴⁷ Both Hoover Commissions made similar recommendations, trying to move in the direction of greater presidential control of the personnel function—with the first Hoover Commission recommending the creation of an Office of Personnel within the Executive Office of the President.¹⁴⁸ The second Hoover Commission’s recommendations, based on concerns that non-elected administrators were deciding policy issues, led to the development of a two-tiered structure for government employment—with political appointees in top policy making positions and career civil servants in subordinate, purely administrative roles in the agencies.¹⁴⁹ Passage of the

¹⁴⁵ Paul Light, in his (1997) *The tides of reform: Making government work, 1945-1995*. New Haven, CT: Yale University Press, makes the argument that successive attempts at government reform movements can be differentiated in such a way that this latest strategy—reinventing—that he characterizes as “liberation management” can be easily distinguished from previous reforms emphasizing efficiency. This dissertation, on the other hand, argues that all reform strategies emphasizing efficiency, including reinvention, are linked through the legitimacy that modern science has bestowed on their methods and assumptions.

¹⁴⁶ See, Seidman and Gilmour (1986).

¹⁴⁷ The President’s Committee on Administrative Management (1937), p. 10.

¹⁴⁸ Hoover I (1949), p. 25.

¹⁴⁹ Mosher, F. C. (1982).

Civil Service Reform Act (CSRA) of 1978 came close to realizing these goals in the creation of the Senior Executive Service.¹⁵⁰ The fact that more than 30 years of unsuccessful attempts went by before the placement of civil service more directly under presidential control may be viewed as a triumph of merit principles over perceived management needs.

The reforms of the CSRA were influenced, somewhat, by changes taking place in the personnel systems of state and local governments. The National Civil Service League—the same civic organization which had developed the principles of the Pendleton Act in 1883—issued its Model Public Personnel Law of 1970. This model law advocated: “a single personnel director, appointive and removable by the executive, with a citizen advisory board (but no civil service commission); and it encouraged a career service.”¹⁵¹ Roberts (1991) claims that, at the state level, these reforms are bringing an increase in political responsiveness, making agencies more “answerable to their political superiors.”¹⁵² This has been accomplished by exempting many top policy-making positions—careerist positions—from civil service protection and increasing the discretion of the executive and his/her political appointees in personnel matters.

The two-tiered model for federal personnel seems to provide what Appleby (1952) was describing as a protection from dominance by a cadre of technical and professional elites in what critics refer to as the ‘fourth branch’ of government.¹⁵³ These inherent protections are: the openness of the administrative system to political and citizen scrutiny and a hierarchy within administration with political appointees placed at the top. If the executives at these top levels of management have perspectives that are broader, less technical, and more political, then administration can be held more accountable for policy decisions, the process will be more congruent with democratic principles, and administration will be more legitimate.

Since the 1970s, there has been an expansion of political appointments in the federal service.¹⁵⁴ This expansion goes beyond mere numbers to include appointments in positions further down in the bureaucracy.¹⁵⁵ While it is accepted as reasonable by most that top level positions—cabinet secretaries, assistant secretaries and the like—be chosen by the administration and bring with them policy preferences, appointments in the SES (although limited to ten percent of the total of SES positions) have caused tension

¹⁵⁰ See, Mosher (1982) and Shafritz, et al. (1992).

¹⁵¹ Mosher (1928), p. 103.

¹⁵² Roberts, D. D. (1991) A personnel chameleon blending the political appointee and careerist traditions: Exempt managers in state government. (pp. 190-204) in C. Ban and N. M. Riccucci, eds. *Public personnel management: Current concerns—future challenges*. New York: Longman, p. 191.

¹⁵³ Appleby, P. H. (1952) *Morality and administration in democratic government*, Baton Rouge, LA: Louisiana State University Press.

¹⁵⁴ Light, P. C. (1995), p. 7.

¹⁵⁵ *Ibid.*, p.p. 7-31.

between careerists and appointees to escalate. The rationale for making lower level appointments has been to improve the president's control of the bureaucracy; but this rationale may have led to a "point of diminishing returns,"¹⁵⁶ as evidenced by the experience of governors who have found that such lower level appointments "are more a headache than a boon."¹⁵⁷

An additional factor in the escalation of tension within the bureaucracy has been the overt hostility towards the career service executives by successive waves of 'bureaucrat bashing' administrations. Rosen (1986) tells us that "in both the Carter and Reagan administrations, the merit principles in the Civil Service Reform Act were compromised when they conflicted with political considerations of the administration or the OPM [Office of Personnel Management] director."¹⁵⁸ The relationship between careerists and political appointees, never an easy one, becomes strained when personal loyalty to a president is considered the most important qualification for these sensitive positions, as it has since Nixon.¹⁵⁹ For the past 20 years, the authority structure of the SES has allowed political appointees to reassign career executives, escalating the tension between the two. When the above factors are compounded by the reductions in force related to NPR implementation, one can hardly wonder at the level of disorder and mistrust visible in today's civil service.

Budget Reforms: From Incrementalism to Deficit Reduction

The significant result of the Budget and Accounting Act of 1921 was the introduction of the executive budget to American national government, providing a basis for further centralization of control on the model of municipal reform and of corporate structure. Early executive budgets were based on objects of expenditure—line-items—and focused on financial resources allotted to meet the obligations and functions of government.¹⁶⁰ Subsequent changes in the way that the executive budget was to be developed and used since that time have broadened the impact of executive budgeting to include functions related more to management, planning, and control of policy than to purely fiscal considerations, and to management of the economy.

¹⁵⁶ Pfiffner, J. P. (1987) Political appointees and career executives: The democracy-bureaucracy in the third century. *Public Administration Review*, 47 (1), pp. 57-65; p. 62.; cf. Wamsley, G. L., A. D. Schroeder, and L. M. Lane (1996) To politicize is *not* to control: The pathologies of control in Federal Emergency Management. *American Review of Public Administration*, 26 (3) pp. 263-285.

¹⁵⁷ Roberts (1991), p. 195.

¹⁵⁸ Rosen, B. (1986) Crises in the U. S. Civil Service. *Public Administration Review*, 46 (3), pp. 207-214; p. 212.

¹⁵⁹ Newland, C. A. (1983) A mid-term appraisal: The Reagan presidency: Limited government and political administration. *Public Administration Review*, 43 (1), pp. 1-21.

¹⁶⁰ McCaffery, J. L. (1987) The development of public budgeting in the United States. (pp. 345-377) in Chandler, *Centennial history*, p. 366.

New budgeting techniques were adopted, although the original line-item format retained favor with congressional overseers as it permitted their input in a detailed way. The first Hoover Commission recommended moving from the line-item concept of budgeting to program budgeting—“to express the objectives of the Government in terms of the work to be done rather than in mere classification of expenditures.”¹⁶¹ The 1950s saw the advent of performance budgeting—setting performance standards with the intent of using the budget to evaluate results. Central budget offices expanded their roles from the coordination of financial input of the agencies in the budget to include other management processes, offering advice on work standards which was not always well-received.

The Programming, Planning, Budgeting System (PPBS) was the next innovation. It called for a shift in emphasis in the budget from management to planning.¹⁶² PPBS was intended to provide a mechanism for allocating resources among competing programs, concerned more with the “purposes of work” than its processes.¹⁶³ In a way, PPBS was an instrument attempting to answer the normative question of V.O. Key, Jr. (1992), “on what basis shall it be decided to allocate X dollars to Activity A instead of Activity B?”¹⁶⁴ PPBS failed, however, to account for the fact that such decisions are never neutral and rational. As Wildavsky pointed out in 1961 and repeated throughout his career, such allocative decisions, involving as they inevitably do the assignment of “winners” and “losers,” are fundamentally political—a normative theory of budgeting would, of necessity, be no less “than a theory stating what the government ought to do.”¹⁶⁵ PPBS, in assuming it could reduce political decisions to rational economic decisions, was doomed to failure at the national level; as it was implemented PPBS was a vehicle for incrementalism.

When budget decisions are reduced to a process of incrementalism, rather than deliberating and discriminating among policy options, the participants engage in tactics designed to preserve the budgetary base for their programs and to get a “fair share” of whatever additional resources might be available. Such tactics are political tactics—negotiation, use of interest group pressure, testimony before oversight committees, and the like. Usually, the best result that could be expected was an incremental increase in allocation, but this result could only obtain in a climate of healthy economic growth and the strategies employed could only prosper so long as there remained an unspoken accord between the branches.

¹⁶¹ Hoover I (1949), p. 6.

¹⁶² Wamsley, G. L. and K. C. Hedblom (1983) Budgeting: Strategic instrument or mindless ritual? (pp. 327-364) in W. B. Eddy, ed., *Handbook of organization management*. New York: Marcel Dekker.

¹⁶³ *Ibid.*, p. 335, emphasis in original.

¹⁶⁴ Key, V. O. (1992) The lack of a budgetary theory. (pp. 110-115) in Shafritz and Hyde, *Classics*, p. 110.

¹⁶⁵ Wildavsky, A. (1992) political implications of budget reform: A retrospective. *Public Administration Review*, 52 (6), pp. 594-599; p. 595.

The Congressional Budget and Impoundment Control Act of 1974 has been said to have arisen from two primary goals of the Congress: to counteract the president's unceasing activity to use the budget to forward his own policy agenda—even to the point of impounding funds to prevent implementation of policies approved by the Congress—and what Shuman (1992) calls, “the Congress's guilt over its inability to discipline itself and to bring the budget under control.”¹⁶⁶ The Act created the Budget Committees of the two houses—which would set expenditure targets within which appropriations were to be limited, set up the procedure for budget reconciliation (which Reagan would later use in such a skillful manner), and created the Congressional Budget Office as an independent source of financial information to inform congressional budget decisions.

The economy, booming during the 1960s, was in a less healthy condition a decade later, and this made the political process of incremental budgeting increasingly untenable and dangerous. The tactics of all of the participants in the budget process, including those of the appropriations and oversight committees of the Congress, tended toward incremental increases despite the fact that the pie they were dividing was shrinking. No one seemed able to make the tough political choices such a budget climate demanded. The 1974 Act was an attempt to remedy this by forcing budget participants, in the course of debate and reconciliation, to recognize the need to make such choices. It was in this climate that the notion of zero-base budgeting came into the picture. As Schick (1990) points out, “reorienting the budget process from growth to limitation cannot occur without realignment of the relationships between the president and Congress and between OMB (Office of Management and Budget) and executive agencies.”¹⁶⁷ The political climate of the 1970s and 1980s did not foster such a realignment.

Zero-base budgeting (ZZB), mandated by President Carter in 1977, has as its premise the notion that each budget cycle is a fresh start. It was intended that agencies would assume a zero base for each program, examining the assumptions built into the previously accepted base, and then build a rationale for expenditures on the merits and performance of each program in creating new budget requests. As could be expected, it was a rare agency which actually performed this kind of “margin analysis.”¹⁶⁸ ZZB did bring involvement of lower levels of management into the process, but application of the technology—the decision process which encompassed the definition of the decision unit, the packaging of decision units in such a way as to enable evaluation and ranking, a determination of possible alternatives, and the final ranking—was not successfully managed or coordinated by the Office of Management and Budget (OMB).

¹⁶⁶ Shuman, H. E. (1992) *Politics and the budget: The struggle between the President and the Congress*. Englewood Cliffs, NJ: Prentice Hall. P. 21.

¹⁶⁷ Schick, A. (1990) Incremental budgeting in a decremental age. (pp. 365-388) in F. S. Lane, ed., *Current issues in public administration*, 4th ed. New York: St. Martin's Press, p. 381.

¹⁶⁸ Schick, A. (1977) Zero-base budgeting and sunset. (pp. 12-32) *The Bureaucrat*, 6, Spring 1977.

While going through the ritual of ZZB, what played in the back of the mind was the familiar rhythm of “base plus incremental increase.” Assumptions that any other approach would leave an agency vulnerable in this period of reduced resources drove this kind of thinking. Therefore, agencies chose as decision units those which would result in most favorable outcomes—the process was stacked in favor of incremental thinking.

ZZB can be said to have failed because the fundamental “rules” by which budgets were formulated were not substantively different from past practices. The persistence of the “traditional line-item incremental” budget can be explained as a legislative preference as a means of controlling and directing spending and of holding agency administrators responsible for their expenditures.

The politics of divided government—where the president and the congressional majority are from different parties—worked to make the executive budget seem to be more of a symbol than an effective tool for any purpose during this period. Although the reconciliation process seemed to work reasonably well at first, as the pressure on the budget by indexed entitlement spending, multiyear commitments, and other nondiscretionary factors grew, the budget became perceived as more of a fiction than as a working document of either the president or the Congress.¹⁶⁹ President Reagan’s use of the reconciliation process to force his political and economic agenda through the Democratic Congress and the skyrocketing growth of the federal deficit brought further “reform” in the form of the 1985 passage of the Gramm-Rudman-Hollings Act (GRH). GRH called for mandatory spending cuts indexed to deficit reduction targets, which Senator Rudman later regretfully called “a bad idea whose time had come.”¹⁷⁰ GRH did not have a substantive effect other than the development of “creative” projections on the part of both the President and the Congress about the health of the economy, the growth of the deficit, and the effect of proposed spending cuts on it—and our subsequent inability to take such projections at face value regardless of whose figures they were. In addition, as Lynch and Cruise (1992) remind us, the emphasis of GRH was all on the expenditure side of the budget. A great share of its failure to control the deficit can be attributed to “its failure to address the revenue side of the deficit.”¹⁷¹

The constraints imposed on both the Congress and the White House by the struggle against the deficit and the struggle of divided politics are the principal features of the years since the Reagan Administration. Although the fixed deficit reduction targets of GRH have been abandoned, to be replaced in 1990 by discretionary spending caps, there

¹⁶⁹ Caiden, N. (1987) Paradox, ambiguity, and enigmas: The strange case of the executive budget and the United States Constitution. (pp. 84-92) *Public Administration Review*, 47 (1).

¹⁷⁰ Cited in, LeLoup, L., B. L. Graham, and S. Barwick (1987) Deficit politics and constitutional government: The impact of Gramm-Rudman-Hollings. *Public Budgeting and Finance*, 7 (1), pp. 83-103; p. 87.

¹⁷¹ Lynch, T. D. and P. L. Cruise (1992) Federal budgeting prognosis: Madison’s nightmare? *International Journal of Public Administration*, 15 (5), pp. 1053-1066; p. 1055.

has been no “budget revolution.”¹⁷² In fact, the failure of Clinton and the 104th Congress to come to terms on the budget, causing the government to shut down, gives clear evidence that, insofar as budgeting is concerned, not much has changed except for the levels of partisan animosity.

Some possibly revolutionary changes in budgeting have been proposed in the National Performance Review, many of which meet with approval at the General Accounting Office.¹⁷³ The NPR consistently recommends the adoption of “good business practices,” and in the area of budgeting these include franchising internal services, reducing financial regulations and requirements, simplifying reporting requirements, reserving unused balances in agency budgets to fund innovation, and managing fixed assets for the long term.¹⁷⁴ One aspect of budget reform is not, however, stressed in either *Reinventing Government* or the National Performance Review. That is the question of fiscal responsibility and how we can satisfy the need of the public for clear accounts of how the public’s money is handled. The clarion call for public entrepreneurship leaves many citizens worried, and the bankruptcies in Orange County, California, and in other local governments and agencies only serve to confirm that that fear is valid. Whether or not any of the NPR budgeting recommendations are realized, the pressure of the deficit and the sharp divisions among political actors will tend to keep the budgeting process political—not rational, and probably not too obviously “reinvented.”

The Scholarly Critique of Reform: Can Democratic Ends Be Realized Through Bureaucratic Means?

Many analysts of American administrative reform have focused on the inconsistency of the bureaucratic form of administrative agencies with principles of democratic process and have, in some cases, attempted to reconcile the two.¹⁷⁵ If we accept O’Toole’s view, reformist public administration orthodoxy contended that reform served to reduce the tension between administrative form and democratic politics, putting the emphasis on structure.¹⁷⁶ Waldo suggests that our way out of this paradox was to find some optimal mix of the two. As he put it, “I accept democracy as desirable, interpreting it to mean centrally a striving toward equality and freedom. I accept bureaucracy as necessary—as instrumental to many goods, including democratic goods, but also entailing, or likely to

¹⁷² LeLoup, L. T. and P. T. Taylor (1994) The policy constraints of deficit reduction: President Clinton’s 1995 budget. *Public Budgeting and Finance*, 14 (2), pp. 3-25. Le Loup and Taylor ascribe three conditions to a budget revolution: “changes in institutions and processes that produce budgetary policy, a change in the political and partisan landscape, and new national priorities in terms of taxing, spending, and deficits.” (p.23). None of these is apparent in the present case.

¹⁷³ Curro, M. J. (1995) Federal Financial Management and Budgeting: NPR recommendations and GAO views. *Public Budgeting and Finance*, 15 (1), pp. 19-26.

¹⁷⁴ Leonard, B., J. Cook, and J. McNeil (1995) The role of budget and financial reform in making government work better and cost less. *Public Budgeting and Finance*, 15 (1), pp. 4-18; pp. 11-12.

¹⁷⁵ Waldo, D. (1990) Bureaucracy and democracy: Reconciling the irreconcilable? (pp. 200-214 in F. S. Lane, *Current issues*).

¹⁷⁶ O’Toole, L. J. (1984).

entail, many bads.”¹⁷⁷ Some critics of bureaucracy advocate reliance on professional norms and a vigilant and informed public as democratic controls on an increasingly “expert” cadre of public servants.¹⁷⁸ Others question the appropriateness of an expanded administrative state with broad discretionary powers in policy matters and call for congressional oversight.¹⁷⁹ Others still, defend the public bureaucracy and seek to find within our constitutional system a legitimate role for public administration.¹⁸⁰ Within the broader context of democratic theory, the question of what constitute appropriate administrative forms in a polity committed to democracy is discussed in these analyses.

The traditionalist approach denied the presumption that a “science of administration” such as that forwarded by classical thinkers in public administration could be developed and denounced the anti-democratic and anti-politics tone of the public administration that had been based on that presumption.¹⁸¹ The traditionalist scholars sought a public administration identified with the public interest, informed by case studies of the practice, espousing a “pragmatic attitude and experimental method” in implementing public policy, and open to collaboration with those most intimately associated with specific policy situations.¹⁸² White and McSwain (1990) attribute the short life of this approach to the rise of a “technical consciousness” in the field principally fostered by the work of Herbert Simon and reinforced by the increasing influence of operations research and the behaviorist school in the social sciences.¹⁸³ The public administration in which this “technicist episteme” is embedded participates in the fragmentation, or hyperpluralism, that is evident in today’s America rather than works to ameliorate it. Where the short-lived traditionalist approach, had it flourished in the 1940s and 1950s, might have moved public administration in a more democratic direction, Simon’s neo-classical, or technicist, approach has had the opposite effect.¹⁸⁴

¹⁷⁷ Waldo, D. (1990), p. 207.

¹⁷⁸ Friedrich, C. J. (1940) Public policy and the nature of administrative responsibility. (pp. 221-245) in C. J. Friedrich, ed. *Public policy*. Cambridge, MA: Harvard University Press.

¹⁷⁹ Finer, H. (1940) Administrative responsibility in democratic government. (pp. 247-275 in C. J. Friedrich, ed. *Public policy*. Cambridge, MA: Harvard University Press.

¹⁸⁰ See, for example, Goodsell, C. T. (1985) *The case for bureaucracy: A public administration polemic*, 2nd ed. Chatham, NJ: Chatham House Publishers, Inc.; and, Wamsley, G. L., R. N. Bacher, C. T. Goodsell, P. S. Kronenberg, J. A. Rohr, C. M. Stivers, O. F. White, and J. F. Wolf (1990) *Refounding public administration*. Newbury Park, CA: Sage.

¹⁸¹ The designation “traditionalist” for this approach and for its academic constituents is found in White, O. F. and C. J. McSwain (1990) The Phoenix project: Raising a new image of public administration from the ashes of the past. (pp. 23-59) in H. D. Kass and B. L. Catron (eds.) *Images and identities in public administration*. Newbury Park, CA: Sage, p. 24. Among the classical works are those of Gulick and the Brownlow reformers.

¹⁸² *Ibid.*, pp. 30-35.

¹⁸³ *Ibid.*, p. 37.

¹⁸⁴ White has continued this argument and has identified the Blacksburg perspective (*Refounding public administration*) as building on the traditionalist foundations.

In the late 1960s, in part as a response to the proliferation of government intervention through the Great Society social programs and to the division of the nation over American military involvement in Vietnam, a new stream of critical voices arose. In a conference at Minnowbrook, sponsored and organized by Dwight Waldo, a new generation of public administration academics met and argued the issues of bureaucracy, democracy, and the directions public administration education might take in the preparation of professionals in government.¹⁸⁵ This stream of critique addressed: the normative questions of responsibility;¹⁸⁶ the relevance of administrative activity;¹⁸⁷ the ability and need for government to adapt to changing social conditions;¹⁸⁸ public administration in the context of social science;¹⁸⁹ the utility of empirical research and the role of science in public administration;¹⁹⁰ redefinition of administrative rationality;¹⁹¹ different approaches in comparative administration studies;¹⁹² and public administration's role in policy making.¹⁹³ While it is difficult to characterize this "new public administration" as a unified front of critique or as a lasting influence on public administration practice, it is clear that these scholars challenged the premises of classical public administration and that, from their dialogue, a new concern for such issues as social equity became a part of the language of public administration.¹⁹⁴

¹⁸⁵ Minnowbrook is a conference facility of Syracuse University. Waldo was, at that time, the Albert Schweitzer Professor of Humanities at Syracuse, and some of the conference organizers and participants were on the faculty of Syracuse's Maxwell School of Citizenship and Public Affairs.

¹⁸⁶ Harmon, M. M. (1971) Normative theory and public administration: Some suggestions for a redefinition of administrative responsibility. (pp. 172-185) and Painter, J. (1971) Comment: On a redefinition of administrative responsibility. (pp. 185-189) in F. Marini, ed. *Toward a new public administration: The Minnowbrook perspective*. Scranton, PA: Chandler Publishing Company.

¹⁸⁷ LaPorte, T. R. (1971) The recovery of relevance in the study of public organizations. (pp. 17-48) and Friedland, E. (1971) Comment: The pursuit of relevance. (pp. 48-56) in Marini.

¹⁸⁸ White, O. F., Jr. (1971) Social change and administrative adaptation. (pp. 59-83), Crenson, M. A. (1971) Comment: Contract, love, and character building. (pp. 83-89), Biller, R. F. (1971) Some implications of adaptation capacity for organizational and political development. (pp. 93-121), and Joedano, S. B. (1971) Comment: Development, learning, and models. (pp. 121-124) in Marini.

¹⁸⁹ Kirkhart, L. (1971) Toward a theory of public administration. (pp. 127-164) and McGee, F. (1971) Comment: Phenomenological administration—A new reality. (pp. 164-171), in Marini.

¹⁹⁰ Kronenberg, P. S. (1971) The scientific and moral authority of empirical theory of public administration. (pp. 190-225) and Zimring, B. (1971) Comment: Empirical theory and the new public administration. (pp. 225-233) in Marini.

¹⁹¹ Howard, S. K. (1971) Analysis, rationality, and administrative decision-making. (pp. 285-301) and Parker, D. F. (1971) Comment: The inadequacy of traditional theories and the promise of PPB as a systems approach. (pp. 301-307) in Marini.

¹⁹² Henderson, K. M. (1971) A new comparative public administration. (pp. 234-250) and Jowitt, K. (1971) Comment: The relevance of comparative public administration. (pp. 250-259) in Marini.

¹⁹³ Sharkansky, I. (1971) Constraints on innovation in policy making: Economic development and political routines. (pp. 261-279) and Mertins, H., Jr. (1971) Comment: The problems of change in policy-making behavior. (pp. 280-284) in Marini.

¹⁹⁴ Frederickson, H. G. (1971) Toward a new public administration. (pp. 309-331) in Marini.

Redford (1969) coined the phrase “overhead democracy” to describe an appropriate mix of administrative effectiveness with democratic principles.¹⁹⁵ While ours is an administered society, he argued, it can stay in touch with democratic morality by means of political control of the bureaucracy by representative political elites. Pateman (1970) argues that this conception of democracy is central to the problem, not a solution for it. She questions why modern political theorists have apparently accepted the apathy, the lack of a “democratic character,” in ordinary citizens in their haste to build a democratic theory of elite participation.¹⁹⁶

Elshtain (1995) speaks of a “culture of mistrust [that] fuels declining levels of involvement in politics and stokes cynicism about politics and politicians.”¹⁹⁷ This mistrust is a symptom of a decline in “democratic dispositions” among citizens, and such democratic dispositions, along with “laws, constitutions, and authoritative institutions” are necessary conditions for democracy.¹⁹⁸ Her critique goes beyond the administrative apparatus to the foundation of the state and the necessity of maintaining some coherent and acceptable boundary between public and private spheres for democracy as we have known it to flourish.

Such analysis and critique permeates today’s social and political literatures. Strains of it can be found in contemporary and, often critical, social theory.¹⁹⁹ Critical social theory is

¹⁹⁵ Redford, E. S. (1969) *Democracy in the administrative state*. New York: Oxford University Press, p. 71.

¹⁹⁶ Pateman, C. (1970) *Participation and democratic theory*. Cambridge: Cambridge University Press, p. 104.

¹⁹⁷ Elshtain, J. B. (1995) *Democracy on trial*. New York: Basic Books, p. 2.

¹⁹⁸ Ibid.

¹⁹⁹ See, among others, Cohen, J. L. and A. Arato (1992) *Civil society and political theory*. Cambridge, MA: The MIT Press; Giddens, A. (1979) *Central problems in social theory: Action, structure and contradiction in social analysis*. Berkeley, CA: University of California Press; (1982) *Profiles and critiques in social theory*. London: Macmillan; (1984) *The constitution of society: Outline of the theory of structuration*. Berkeley, CA: University of California Press; (1990) *The consequences of modernity*. Stanford: Stanford University Press; and (1995) *Politics, sociology and social theory: Encounters with classical and contemporary social thought*. Stanford: Stanford University Press; Habermas, J. (1989) *The structural transformation of the public sphere: An inquiry into a category of bourgeois society*, trans. T. Burger & F. Lawrence. Cambridge: Polity Press; (1984) *The theory of communicative action: Reason and the rationalization of society*, Vol. 1, trans. T. McCarthy. Boston: Beacon Press; (1987) *The theory of communicative action: Lifeworld and system: A critique of functionalist reason*, Vol. 2, trans. T. McCarthy. Boston: Beacon Press; and (1990) *Moral consciousness and communicative action*, trans. C. Lenhardt and S. W. Nicholsen. Cambridge, MA: The MIT Press; Harmon, M. M. (1995) *Responsibility as paradox: A critique of rational discourse on government*. Thousand Oaks, CA: Sage; Kass, H. D. and B. L. Catron, Eds. (1990) *Images and identities in public administration*. Newbury Park, CA: Sage; March, J. G. and J. P. Olsen (1989) *Rediscovering institutions: The organizational basis of politics*. New York: The Free Press; (1995) *Democratic governance*. New York: The Free Press; Marcus, G. E. and R. L. Hanson, Eds. (1993) *Reconsidering the democratic public*. University Park, PA: The Pennsylvania State University Press; Sullivan, W. M. (1986) *Reconstructing public philosophy*. Berkeley, CA: The University of California Press; Thayer, F. C. (1981) *An end to hierarchy and competition*, 2nd. ed. New York: Franklin

explicitly aimed at the emancipation of the human spirit from class inequities, from abuse of power and domination, and from the alienation and degradation associated with the rise of the modern nation-state and capitalist economic systems. Some theorists have sought to understand and explain the development of these systems in an attempt to discover the key to such emancipation.²⁰⁰ Some have sought to develop liberating democratic theory as a replacement for the now failing liberal political theory of the eighteenth century.²⁰¹ Some have sought to redefine the role of public administrators from the paradoxes inherent in questions of administrative responsibility.²⁰²

Evaluation of the effects of administrative practices on women's lives is a significant theme in feminist theory.²⁰³ The feminist critique of administrative practice focuses on what is identified as the preservation of patriarchal practices of domination and subjection of women by the institutions of government. Not only were women denied equal participation in the political life of America until this century, but it can be shown that they continue to be less well represented in both the political offices of government but also in administrative offices today. Additionally, some strains of feminist theory demonstrate that administrative apparatus itself—its conceptualization, forms and procedures—have a decidedly “masculine” character.²⁰⁴

There has been, as well, a revival of communitarian thinking which has attracted a great deal of attention recently within the world of public administration.²⁰⁵ The challenge to

Watts; and Touraine, A. (1973) *The self-production of society*, trans. D. Colman. Chicago: The University of Chicago Press.

²⁰⁰ For example, see Habermas and Giddens.

²⁰¹ For example, see Barber, B. (1984) *Strong democracy: Participatory politics for a new age*. Berkeley: University of California Press; and March and Olsen (1995).

²⁰² For example, see Harmon (1995).

²⁰³ Among others, see: Benhabib, S. and D. Cornell, Eds. (1987) *Feminism as critique: On the politics of gender*. Minneapolis, MN: University of Minnesota Press; Ferguson, K. E. (1984) *The feminist case against bureaucracy*. Philadelphia: Temple University Press; Ianello, K. P. (1992) *Decisions without hierarchy: Feminist interventions in organization theory and practice*. New York: Routledge; Mansbridge, J. J. (1980) *Beyond adversary democracy*. New York: Basic Books; Mills, A. J. and P. Tancred, eds. (1992) *Gendering organizational analysis*. Newbury Park, CA: Sage; Okin, S. M. (1989) *Justice, gender, and the family*. New York: Basic Books; Nye, A. (1995) *Philosophy and feminism at the border*. New York: Twayne Publishers; Pateman, C. (1989) *The disorder of women*. Stanford: Stanford University Press; Phillips, A., ed. (1987) *Feminism and equality*. New York: New York University Press; and (1993) *Democracy and difference*. University Park, PA: The Pennsylvania State University Press; Shanley, M. L. and C. Pateman, eds. (1991) *Feminist interpretations and political theory*. University Park, PA: The Pennsylvania State University Press; Stivers, C. (1993) *Gender images in public administration: Legitimacy and the administrative state*. Newbury Park, CA: Sage; and Tuana, N. (1992) *Woman and the history of philosophy*. New York: Paragon.

²⁰⁴ Stivers (1993) makes this point particularly well.

²⁰⁵ See, for example, Barber, B. (1984); Bellah, R. N., R. Madsen, W. M. Sullivan, A. Swidler, and S. M. Tipton (1985) *Habits of the heart: Individualism and commitment in American life*. New York: Harper & Row; (1992) *The good society*. New York: Vintage Books; Etzioni, A. (1993) *The spirit of community: The reinvention of American society*. New York: Touchstone; Etzioni, A., Ed. (1995) *New communitarian*

the legitimacy of the federal administrative state—and the bureaucratic form its component agencies take—from the communitarian viewpoint is perhaps the most pointed of all critiques. Building on Tocqueville's (1990) observations of democracy as it was practiced in the early days of our republic,²⁰⁶ the communitarian literature presents an appeal to return to small and local government, with an expanded and often face-to-face quality of participation.²⁰⁷ Barber (1984) calls for a practice of “strong democracy” which incorporates many of these same features. Sullivan (1995) recognizes the potential in institutions to shed the predominance of instrumental function in favor of becoming the locus for the nurturance of the practices of citizenship and of governance. He sees institutions as the appropriate “infrastructure” of a thriving democratic polity.²⁰⁸

Postmodern organization theory and postmodern critiques of administration and the state make up the final category of analysis. If there is a symbol of modernity it is the bureaucratic organization and the archetype would be the public bureaucracy—the administrative state constructed by the progressive reformers and augmented since then by further reform processes. In many respects like critical theory and feminist theory, the postmodern critique approaches organization with an intent to reveal the multiplicity of oppressions that are a part of organizational life.²⁰⁹ Bergquist (1993) looks at organizations and management of organizations as these must adapt to the challenges of the postmodern era.²¹⁰ Both aspects of postmodernism—as perspective and as an era—point out that our ideas about organizations—public and private—are inadequate today, and that a theory of governance founded on those old organizational values cannot coexist with democratic, inclusive practices of citizenship.

Bridging the gap between the modernist and the postmodernist views of public administration is *Refounding Democratic Public Administration*.²¹¹ Building on the previous normative work of the Blacksburg school, this edited volume is characterized by theorizing about public administration from a wide range of perspectives, including:

thinking: Persons, virtues, institutions, and communities. Charlottesville, VA: University Press of Virginia; and, Selznick, P. (1992) *The moral community: Social theory and the promise of community*. Berkeley: University of California Press.

²⁰⁶ de Tocqueville, A. (1990) *Democracy in America*, P. Bradley, Ed., Vols. 1 & 2. New York: Vintage Books.

²⁰⁷ Bellah, et al. (1985; 1992); Etzioni (1993)

²⁰⁸ Sullivan, W. M. (1995) Institutions as the infrastructure of democracy. (pp. 170-180) in A. Etzioni, ed., *New communitarian thinking*.

²⁰⁹ Hearn, J. and W. Parkin (1993) Organizations, multiple oppressions, and postmodernism. (pp. 148-162) in J. Hassard and M. Parker, eds. *Postmodernism and organizations*. Newbury Park, CA: Sage, p. 153.

²¹⁰ Bergquist, W. (1993) *The postmodern organization: Mastering the art of irreversible change*. San Francisco: Jossey-Bass Publishers.

²¹¹ Wamsley, G. L. and J. F. Wolf, eds. (1996) *Refounding democratic public administration: Modern paradoxes, postmodern challenges*. Thousand Oaks, CA: Sage.

development of different roles for citizens²¹² and public administrators,²¹³ examination of the public interest as a working principle in a postmodern age,²¹⁴ looking at social and institutional processes²¹⁵ and action contexts for the field,²¹⁶ and searching for a more democratic identity for public administration.²¹⁷

Critiquing public administration from the postmodern perspective, Farmer (1995) examines the limits imposed on the project of public administration by its modernist thinking and language, and presents, not necessarily as alternatives but as additions to that thinking, the playfulness, imaginative creativity, liberation, and alterity of the postmodern turn.²¹⁸ A particular target is the “business thinking” encoded in public administration due to the influence of organization theory on all phases of administrative reform.²¹⁹ Fox and Miller’s (1995) approach critiques what they call “orthodoxy and its alternatives”—including such institutionalist understandings of public administration as are expressed by the Blacksburg Refounding Project.²²⁰ Having dismissed the orthodox view of public administration and these alternatives to it, Fox and Miller propose a “discourse” theory for the development of public policy, where interested parties—citizens, interest groups, policy networks, etc.—are given revocable “warrants” to participate in the process.²²¹

Although their approaches and purposes differ, these scholars all point out that the bureaucratic form of the administrative state is a system of domination and that it contains elements that are divisive and destructive of the human spirit and, in many ways,

²¹² Stivers, C. (1996) Refusing to get it right: Citizenship, difference, and the refounding project. (pp. 260-278) in Wamsley and Wolf, eds. (1996).

²¹³ Barth, T. J. (1996) Administering in the public interest: The facilitative role for public administrators. (pp. 168-197) in Wamsley and Wolf, eds. (1996).

²¹⁴ McSwite, O. C. (1996) Postmodernism, public administration, and the public interest. (pp. 198-224) in Wamsley and Wolf, eds. (1996).

²¹⁵ Weinberg, L. (1996a) Understanding social process: The key to democratic government. (pp. 279-292) and Clay, J. A. (1996) Public-institutional processes and democratic governance. (pp. 92-113) in Wamsley and Wolf, eds. (1996).

²¹⁶ Wolf, J. F. (1996) Moving beyond prescriptions: Making sense of public administration action contexts. (pp. 141-167) in Wamsley and Wolf, eds. (1996).

²¹⁷ Dennard, L. F. (1996) The maturation of public administration: The search for a democratic identity. (pp. 293-326) in Wamsley and Wolf, eds. (1996).

²¹⁸ Farmer, D. J. (1995) *The language of public administration: Bureaucracy, modernity, and postmodernity*. Tuscaloosa, AL: The University of Alabama Press.

²¹⁹ *Ibid.*, p. 218.

²²⁰ Fox, C. J. and H. T. Miller (1995) *Postmodern public administration: Toward discourse*. Thousand Oaks, CA: Sage. Although Fox and Miller have claimed the title “postmodern,” their critique seems to fall more in the critical theory camp than in that of postmodernism. The Blacksburg Refounding Project includes Wamsley, et al. (1990) *Refounding public administration* and Wamsley and Wolf, eds. (1996) *Refounding democratic public administration*.

²²¹ The concept that citizens whose participation is judged to be in some way unsatisfactory may lose their warrants to participate seems antithetical to our American understanding of citizenship. While citizen apathy erodes the strength of democracy, it somehow doesn’t seem appropriate to ‘cure’ the problem with less participation.

antithetical to democratic governance. A review of all of these varied sources has been useful to me in establishing the gap in this literature which this dissertation will help to fill. While many have pondered how an authoritative and hierarchical administration could have developed within our democratic republic, none has asked, rather, “how could it not have developed?” This question is one that this dissertation will address: Considering the influence of Cartesian thinking in the development of the modern project and, specifically, in the nascent behavioral sciences, what other form for administrative organizations could reasonably have been considered?

The Modern Project: Public Space, Public Philosophy, and the Administrative State

The second stream of literature to which this dissertation will contribute—one perhaps less directly related to public administration—is the more narrow one of the public realm. This body of literature discusses what does or what should constitute the modern public space and how administrative institutions can contribute to or detract from the quality of the civic discourse within that space. It is within this public realm that the relationship between citizens and their government is developed and maintained. This is the conceptual territory where the practices of governance and citizenship occur. The quality of these practices is affected by the structure, purposes, and consequently, the reform projects of the administrative state.

The history of the administrative state is bound up with the development of the modern nation-state. Traditionally, the modern era is said to have begun in the sixteenth and early seventeenth centuries with “the creation of separate, independent sovereign states, each of them organized around a particular nation, with its own language and culture, maintaining a government that was legitimated as expressing the national will, or national traditions, or interests.”²²² Toulmin (1990) argues that at the close of the Thirty Years’ War, the authority that the medieval Church—transnational, hierarchical, and literate—had held over the mainly illiterate rulers of Europe was broken. Previously national affairs had been strongly influenced by the Church. Now, with a broadening of literacy and exhaustion from a generation of religious war, “Church affairs were increasingly influenced by national policy.”²²³ Where previously universal and organized religion had offered some sense of certainty, now the secular state, especially as it became associated with reason and science, came to play that role. “For when claims of reason replaced those of tradition, they appeared to offer a sense of certitude greater than that provided by preexisting dogma.”²²⁴

²²² Toulmin, S. (1990) *Cosmopolis: The hidden agenda of modernity*. Chicago: The University of Chicago Press, p. 7.

²²³ *Ibid.*, p. 91.

²²⁴ Giddens, A. (1990) *The consequences of modernity*. Stanford, CA: Stanford University Press, p. 39.

The modern state can be seen as a “complex set of institutional arrangements for rule operating through the continuous and regulated activities of individuals acting as occupants of offices.”²²⁵ Comparing this definition with Weber’s discussion of bureaucracy, we note many overlaps: the regulation of activities, the location of authority in the office, the career role of office-holder.²²⁶ The state, as an institutional arrangement, monopolizes the business of ruling—whether politics is seen as the internal allocation of scarce resources or as the source of security from external enemies or disruptions,²²⁷ and it is possible to see the tracks of bureaucracy in both of these aspects of rule. The bureaucratic administrative state has served as the institutional arrangement for rule for nation-states with many different kinds of political form—from absolute monarchies to constitutional republics.

The creation of the liberal state envisioned by the Enlightenment philosophers depended on a division between a private, familial sphere and a public sphere where political process could take place,²²⁸ although different streams of that philosophy have demarcated the boundary between them differently over the years. It was this division which made possible the construct of the rights-bearing individual that populates liberal political theory.

The literature about the public space falls into two categories—the political and critical philosophy of the public space and the feminist critique. According to feminists, the division of the world into public space and private place historically represents one means of marginalizing women and maintaining public power for men. In the patriarchal society, women have traditionally been identified with the private sphere of intimate relationships; with emotion, not reason; with nature, not spirit or mind; and with the particular, not the universal. Pateman (1989) asks, “why is the separation of the two worlds located within civil society so that public life is implicitly conceptualized as the sphere of men?”²²⁹ McSwite (1997) answers that “gender is the expression in the everyday world of the limits of reason...women function in everyday life as a stand-in

²²⁵ Poggi, G. (1978) *The development of the modern state: A sociological introduction*. Stanford, CA: Stanford University Press, p. 1.

²²⁶ Gerth, H. H. and C. W. Mills, eds. and trans. (1958) *From Max Weber: Essays in sociology*. New York: Oxford University Press, pp. 196-204.

²²⁷ Poggi, pp. 2-13.

²²⁸ The concept of a public sphere, as contrasted with the private sphere of the family, first appears in Greek philosophy. Aristotle’s *Politics* depends on accepting as natural those hierarchies which left only male citizens as eligible members of the political, or public, sphere (Nye, 1995). The rhetoric of the free individual which fueled eighteenth century revolutions built on those concepts which maintained the division between public and private. Even after achieving the status of citizen, most women and non-European males remain outsiders in the public sphere. While the subject of scholarly inquiry in political theory generally, it was largely the feminist critique of philosophy in this century which exposed the “necessity” of maintaining the division as a basis for the liberal state.

²²⁹ Pateman (1989), p. 123.

for, a reminder of, the limitedness of reason and the dangers that lurk because of this.”²³⁰ Once reason became the dominant mode of cognition and judgment, its dominance in the public sphere was protected through this mechanism.

The earliest philosophy identifies woman with unreason, emotion, and a particularistic, not universal, sense of justice—thus disqualifying her from any aspect of political rule.²³¹ The liberal feminists’ assertion that “the personal is political” stands as an attempt to expose patriarchal injustices that are commonplace and shielded by keeping them in the private sphere of the family.²³² These points are examples of the many made by feminists in order to claim the right to participate in the public life of society, to decry the subjection of women by imprisoning them in the private sector, or to attack institutions of society that maintain the power of men over women. This is, by no means, an exhaustive discussion of the many feminist positions on this question.

Outside the feminist critique, today’s discussion of the public space has been dominated by the work of political philosopher, Hannah Arendt, and critical theorist, Jürgen Habermas. While remaining firmly within the modern project, both have sought to divorce the concept of the public space from its modernist implications of exclusion and domination and to revisualize its potential as an arena for open, authentic, and agonistic discourse. Neither fully realized these goals in their work, but they have left us a foundation upon which we may build.

The concept of the public or political sphere can be traced to Plato’s explanation of the natural order wherein private interests were held to be the domain of the citizen acting as head of his household and public interests were served by the virtuous citizen in the discourse of the *polis*. Platonic oppositions such as mind/body, reason/emotion, and culture/nature supported a notion of citizenship which barred women and foreigners from participation in public, political activities. In the citizen’s household, women, children and slaves performed the mundane tasks associated with the maintenance of the household, leaving him at leisure to reason and discuss the important affairs of the community. Plato demonstrated how each form of government then in evidence—timocracy, oligarchy, democracy, and tyranny—is flawed, and then developed his picture of the ideal state where philosophers ruled as guardians.²³³

In his *Republic*, Plato may have conceded the possibility of there being women guardians, but they could not be expected to do the work associated with the private sphere and still

²³⁰ McSwite, O. C. (1997) *Legitimacy in public administration: A discourse analysis*. Thousand Oaks, CA: Sage, p. 250.

²³¹ Tuana (1992).

²³² See, Okin (1989) for a full discussion of this notion that justice is differently defined and brought about in the two spheres.

²³³ Morgan, M. L., ed. (1992) *Classics of moral and political theory*. Indianapolis, IN: Hackett Publishing Company, pp. 178-197 (Plato, *The Republic*, Book VIII, excerpts).

devote themselves to reason and rule. While Plato's female guardians—women of the citizen class who devoted their lives to the attainment and application of reason—would still be expected to bear superior children (fathered by their male counterparts), the tasks of nurturing these children—private sphere tasks—would fall to others. In fact, there would be no marriage, no family, no private interests to distract the guardians from their pursuit of wisdom, their contemplation of ideal forms, and their governance of the Republic.²³⁴

What Plato left as implication, Aristotle made clear. Nature preceded the formation of the family, the town and the state. The laws of nature debarred women and slaves from political discourse, since man (the cultured Hellenic man who had the leisure to devote his time to reason) was the natural master of property, the household, and of “barbarians.” While Plato envisioned property, including women and children, held in common, Aristotle taught that private property and individual households provided the basis for political man to act in the state.²³⁵ In fact, he insisted that since “citizens should have ample subsistence,” the right of property-ownership should accordingly be limited to citizens.²³⁶

In the regimented life of the middle ages, the notion of public and private spheres faded in importance. Feudal life was lived by all in prescribed roles defined by class and constrained by duty. The growth of centralized power accruing in monarchies, which became the target of the revolutionary thinking of the seventeenth and eighteenth centuries in Europe, brought the concepts back into philosophical discussion. And, it is the substance of the public and private spheres as these came to be defined by the revolutions of the modern era which attracted the attention of Arendt and Habermas and which is impacted by the development of the American administrative state.

Hannah Arendt saw the public space as the locus for the action which defines us as human beings.²³⁷ Work and labor, and intimate family life provide support for action, but do not take the place of action. And action, in her view, results in freedom as well as in the acknowledgment of unique human identity. For Arendt, freedom is “the ability of a human being, through action, to reach out and attain, in deed, gesture, and word, realms, feelings, and thoughts heretofore unimagined; the ability, so to speak, to establish the

²³⁴ Ibid., pp. 121-125 (Plato, *The Republic*, Book V, excerpts).

²³⁵ Aristotle (1992) *The politics*, trans. T. A. Sinclair, rev. T. J. Saunders. New York: Penguin Books, pp. 112-119.

²³⁶ Ibid., p. 416.

²³⁷ Arendt, H. (1958) *The human condition*. Chicago: University of Chicago Press; (1977a) *Between past and future: Eight exercises in political thought*. New York: Penguin Books; and (1977b) *On revolution*. New York: Penguin Books.

world anew.”²³⁸ The public realm in which this action takes place is “defined by principles that enable human beings to appear together, to act in common, and to be valued for their deeds.”²³⁹

Arendt felt it important that the public and private spheres be maintained as separate, and used as her model the polis of ancient Greece. One of the principal problems arising from modernity in her view was the erosion of the boundary between the two and the encroachment on both of what she called “the social”—the needs of mass society. She traced the rise of the social to the importance of the salon society and public opinion, and the transformation of public opinion into mob rule following the first French Revolution. In France, the revolution was diverted from its appropriate goal of developing a constitutional framework for the state and the public sphere to attending to the social question—the pressing needs of the masses. In America, she notes, dealing with the social question—as found in the institution of slavery—was put off in order to develop a constitution directed toward reaching a goal of public happiness, not individual happiness. She attributed to the American Revolution the status, therefore, of a founding along the lines of the Roman Republic—where legitimacy is grounded in the act of founding itself and how well subsequent acts of government reflect and maintain the spirit of that founding—which, in her view, gave America a better chance for achieving an appropriate space for public discourse.²⁴⁰

The social, however, has intruded into the politics of America as it has developed the attributes of a welfare state and through interest-group liberalism. While conceding that the modern state requires administration, Arendt decries the extent to which government becomes administration rather than governance.²⁴¹ And, thus, through the conflicted arena in which private interests are mediated by the state, “the idea of democracy is converted from that of public participation to the achievement, through the most efficient administrative means possible, of the goals of public welfare.”²⁴²

Habermas was, as well, concerned with the ascendancy of the social over the public and private spheres, although he identified the social more with the distorted communication of a society driven by system and commodification.²⁴³ Building on the Kantian notion

²³⁸ Miller, J. (1979) The pathos of novelty: Hannah Arendt’s image of freedom in the modern world. (pp. 177-208) in M. A. Hill, ed. *Hannah Arendt: The recovery of the public world*. New York: St. Martin’s Press, p. 179.

²³⁹ Ibid.; see also, Arendt (1977a) *Between past and future*.

²⁴⁰ Arendt, H. (1977b) *On revolution*.

²⁴¹ Ibid.

²⁴² Cohen, J. L. and A. Arato (1992) *Civil society and political theory*. Cambridge, MA: The MIT Press, p. 186.

²⁴³ Habermas, J. (1989) The structural transformation of the public sphere: An inquiry into a category of bourgeois society, trans. T. Burger & F. Lawrence. Cambridge: Polity Press; (1987) The theory of communicative action: Lifeworld and system: A critique of functionalist reason, Vol. 2, trans. T. McCarthy. Boston: Beacon Press.

that arguments—rational discourses buttressed by institutions—should displace status and tradition as the decisive factors in political decision-making, Habermas posited that “a public sphere adequate to a democratic polity depends upon both quality of discourse and quantity of participation.”²⁴⁴ Habermas connects the revolutionary notion of the public sphere with the rise of both the nation-state and the capitalist economy, and it is the developments implicated in these social entities—large corporations, mass democracy, the increasing importance of consumption, and the rise of the welfare state—which transformed the bourgeois public sphere of the eighteenth century into its modern and problematized form.²⁴⁵

The goal of Habermas’s critique of the modern public sphere is emancipatory. As developed in *The Theory of Communicative Action*, he saw the distortion of reason and language which characterize Weberian purposive or instrumental rationality as a barrier to the emancipatory character of the lifeworld.²⁴⁶ It was the development of the market which institutionalized the private sphere as the locus of social reproduction, and the “institutionalization of a new and stronger sense of privacy as free control of productive property was a crucial contribution of capitalism to the public sphere.”²⁴⁷ Codes of civil law guaranteeing private freedoms (negative freedoms—protection from interference by the state into private matters) were developed and subjects were transformed into persons with “education and property ownership” as the criteria for admission to the discourse of the public sphere.²⁴⁸

However, the “system” of expanding bureaucracy and technocracy emanating from capitalism expands into and thereby destroys the capacity for authentic communication in all spheres of life. Habermas distinguishes between the purposive-rational—means-oriented or instrumental—actions which characterize social systems and the rationalization of communicative action which provides the basis of reasonableness in the lifeworld—the realm of personal relationships.²⁴⁹ Both types of rationalization, different as they are, are critical to the overall human project, but the erosion of balance between them, the dominance of purposive rationality that we have come to see today, creates the problematic state of the public sphere.²⁵⁰

²⁴⁴ Calhoun, C. (1993) Introduction: Habermas and the public sphere. (pp. 1-48) in C. Calhoun, Ed. (1993) *Habermas and the public sphere*. Cambridge, MA: The MIT Press, p. 2.

²⁴⁵ See, Habermas (1989) and Calhoun (1993).

²⁴⁶ Sossin, L. (1993) The politics of discretion: Toward a critical theory of public administration. *Canadian Public Administration*, 36, 3, pp. 364-391; pp. 374-375.

²⁴⁷ Calhoun (1993), p. 15.

²⁴⁸ *Ibid.*, p. 16.

²⁴⁹ Habermas, J. (1984) *The theory of communicative action: Reason and the rationalization of society*, Vol. 1, trans. T. McCarthy. Boston: Beacon Press; (1987) *The theory of communicative action: Lifeworld and system: A critique of functionalist reason*, Vol. 2, trans. T. McCarthy. Boston: Beacon Press.

²⁵⁰ Bernstein, R. J. (1985) Introduction. (pp. 1-32) in R. J. Bernstein, ed. (1985) *Habermas and modernity*. Cambridge, MA: The MIT Press.

A passive American culture of consumption and political indifference, fueled by the mass media, has tended to replace the “shared, critical activity of public discourse”²⁵¹ leading to a “public sphere in appearance only.”²⁵² This passivity, he attributes to the expansion of access without a concomitant commitment to communicative action.²⁵³ Thus, democracy and the rise of the corporate, consumption economy were necessary ingredients in both the development of the public sphere and in its subsequent disintegration. Through this transformation, “the public sphere becomes a setting for states and corporate actors to develop legitimacy not by responding appropriately to an independent and critical public but by seeking to instill in social actors motivations that conform to the needs of the overall system dominated by those states and corporate actors.”²⁵⁴ For Habermas, then, “the ideal of the public sphere calls for social integration to be based on rational-critical discourse. Integration, in other words, is to be based on communication rather than domination,”²⁵⁵ an idea which is remarkably reminiscent of Mary Parker Follett.

While their idealizations of the public space—as the realm of action as seen by Arendt or as the locus for communicative action as seen by Habermas—differ in many respects, Arendt and Habermas share a foundationalist ontological disposition. Both have built their visions of the public realm on an assumption of an underlying anchoring in a concrete reality, although Habermas extended this notion to include the effects of specific cultural contexts on particular societies. Feminists stand in opposition to the grounding of democratic theory in public space structures and institutions tainted by a history of patriarchal domination.²⁵⁶ Communitarian or civil society critics embrace the development of the social, decried by Arendt, as an antidote to the increasing effect of administrative and market institutions on the democratic human spirit.²⁵⁷ Postmodern

²⁵¹ Calhoun (1993), pp. 22-23.

²⁵² Habermas (1989), p. 171.

²⁵³ Calhoun (1993), p. 23.

²⁵⁴ *Ibid.*, p. 26.

²⁵⁵ *Ibid.*, p. 29.

²⁵⁶ See, among others, Benhabib, S. (1993) Models of the public space: Hannah Arendt, the liberal tradition, and Jürgen Habermas. (pp. 73-98) in C. Calhoun, Ed. (1993) *Habermas and the public sphere*; Fraser, N. (1987) What’s critical about critical theory: The case of Habermas and gender. (pp. 31-56) in S. Benhabib and D. Cornell, Eds. (1987) *Feminism as critique: On the politics of gender*; Ryan, M. P. (1993) Gender and public access: Women’s politics in nineteenth-century America. (pp. 259-288) in C. Calhoun, Ed. *Habermas and the public sphere.*; and Young, I. M. (1987) Impartiality and the civic public: Some implications of feminist critiques of moral and political theory. (pp. 57-76) in S. Benhabib and D. Cornell, Eds. (1987) *Feminism as critique: On the politics of gender*.

²⁵⁷ See, Barber, B. (1984) *Strong democracy: Participatory politics for a new age*; Cohen, J. L. and A. Arato (1992) *Civil society and political theory*; Rodger, J. J. (1985) On the degeneration of the public sphere. *Political Studies*, XXXII, pp. 203-217; and Taylor, C. (1995) Liberal politics and the public sphere. (pp.183-217) in A. Etzioni, ed. *New communitarian thinking: Persons, virtues, institutions, and communities*, among others.

and poststructuralist theorists denounce public realm theory as being typically modernist in its origins and its outlooks—fueled by power relations and authority.²⁵⁸

In the course of this dissertation, I hope to model a locus for public discourse liberated from Cartesian foundationalism and sexism that will meet these criticisms and yet retain some sense of the optimism of Arendt and Habermas. If, as I have proposed, the freedom from the necessity of ontological certainty associated with the new sciences indeed provides dynamic energy to Dewey's instrumentalism and the social theory of Follett, such a model may be possible.

Liberating Ontology and Reform Possibilities Hope Without Utopia

The bombing of the Murrah Building, described in the Preface of this dissertation, was presented because it illustrates the extent of the erosion of the American public space. It is woven, along with other stories of violence, greed, voyeurism, militancy, and hate, to create the fabric of the dominant narrative of this era of America's life. While once Americans were united in understanding the themes of a public philosophy—"a tradition of interpreting and delineating the common understandings of what the political association is about and what it aims to achieve"²⁵⁹—now we hear a cacophony that seems to have no common themes at all. Although we publicly celebrate diversity, we have demonstrated a decrease in tolerance for the opinions and life choices of others. After a century of commercialism, liberal individualism, technocracy, and repeated waves of governmental, economic, and social reform, the institutions that once kept tradition and any sense of commonality alive all seem to be failing. Although it takes no effort to conform to these commercial and social forces—to buy on credit, to live in isolated enclaves, to look intolerantly at the private behaviors of others, to retreat from civic obligation—"the practices of citizenship and self-government, because they run counter to [this] commercial ethos, do require conscious, collective cultivation to flourish under modern conditions."²⁶⁰

Administrative reform, as it has been shaped by the modern worldview, continues to be flawed. Some phases of American reform have been substantive, some more cosmetic, but all have their source in politics. Often, reformers have confused the nature of the problems they sought to correct, and thus, have produced surface repairs where deeper remedies were needed. The cynical might observe that reformers have chosen to concentrate on substantively marginal—but spectacularly visible and apparently urgent—

²⁵⁸ See, for example, the postmodern critique of Villa, D. R. (1992) Postmodernism and the public sphere. *American Political Science Review*, 86, 3, pp. 712-721; and a rejoinder by Johnson, J. (1994) Public sphere, postmodernism and polemic. *American Political Science Review*, 88, 2, pp. 427-433.

²⁵⁹ Sullivan, W. M. (1986) *Reconstructing public philosophy*. Berkeley, CA: University of California Press, p. 9.

²⁶⁰ *Ibid.*, p. 7.

problems, and have ignored more important longer-range or interconnected problem systems. Many of Harmon and Mayer's "wicked problems" fall into that latter category, and problems for which there exist no quick fixes—ones that can't easily be reduced to levels at which our current technologies are adequate—are often categorized as purely political or purely questions of values and are set aside as inappropriate for government solution.²⁶¹

The literature of the administrative state and administrative reform canvassed for this dissertation covers a vast territory: the identification of social and economic problems; the movement for government to provide collective solutions spearheaded by the media and by realist literature; the pseudoscientific principles upon which government reform was based; critiques of bureaucracy as it developed; a merit standard for public employees; the rationalization of public budgeting; and the paradox of bureaucratic structure in service of democracy. While what is wrong about the administrative state has been tirelessly documented by political theorists, critical theorists, feminists, and even public administrationists, none of these sources has identified what might have been done differently in the historical context of the reform period, or subsequently.

Fueled by the myth of progress, bolstered by the privileged revelations of natural science, urged on by the success of the capitalist enterprise, the Progressives and Brownlow reformers were limited in their ability to envision alternative governmental forms by their ontological assumptions—by their largely unconscious view of the world. This dissertation will demonstrate how thorough the hold of that worldview was on the reform imagination before the Second World War. In fact, that worldview still lurks within most of us today and has influenced the continuation of failed understandings about the institutions of governance.²⁶² In this way, one neglected aspect of the literature of administrative reform will receive attention.

In building an exemplar of a public space based on the understanding of community and democracy of Dewey and Follett as illuminated by the new sciences, this dissertation will contribute to the literature of the public realm and public philosophy. It is my intention that the model developed in this dissertation will not rely upon absolutes or universalistic foundations. It is offered as a hope, not as a utopian dream. Without the hope that we can bring out the discourse of those who presently do not participate as citizens in the public, we may find the American experiment in democracy failing. Only a reconceptualized public space offers us that hope. How we build it will depend on our ability to recapture common meaning, a sense of connection with each other and tolerance

²⁶¹ Harmon, M. M. and R. T. Mayer (1986) *Organization theory for public administration*. Boston, MA: Little, Brown and Company, pp. 393-415.

²⁶² I identify this vestigial unconscious worldview constraint as the functionalist devil that resides in all of us and makes its presence felt with embarrassing regularity, despite the belief that some of us have that its day is over.

for disagreement. I believe that Dewey and Follett can show us how to do this, if we explore the body of their work through a different understanding of how the world works.

Chapter 3

The Constraints of Modernity

Modern Science and the Quest for Certainty

My purpose in this chapter is twofold: to delineate the development of modern science and the philosophy that arose in conjunction with it, and to deconstruct the modern worldview to expose its elements for comparison with the history of the American people and American government through the twentieth century. To achieve these goals it will be necessary for me to place the modern worldview in its developmental context, to identify its constraining elements, to examine its impact on American thinking, and to complete the process of intensive explication, especially with regard to the conceptual linking of science with progress.¹

The first of these tasks leads me inevitably to a brief foray into anthropology and ethnology, to discover the roots of human belief systems, and into analysis of the development of human consciousness and the operation of the mind. Next, we will explore the influence of the Christian church on ontology; its distancing of the human from nature set the stage for the objectivity and privileged perspective of classical science. Newtonian science did not simply appear and come to dominate Western thought in a vacuum—rather it arose logically from those developments in human history that preceded it. The second task will lead to the development of a framework for analysis of the American setting for administrative reform that will include some of the characteristics of the worldview or ontological assumptions of Newtonian science that can be shown to have constrained the project of administrative reform.

Myth, Religion, and the Limits of Human Understanding

Although it may seem to be a stretch to trace the history of science back to the beginning of recognizably human existence, I ask the reader to bear with the introductory material in this chapter. Most of human history was lived in caves. As humans became more “civilized,” they moved further away from their initial close relationship with the world around them. Classical science epitomizes the greatest distance humankind can have from the natural world of which it is a part. The “new” sciences begin to move humans back into a relationship with nature that is inclusive and holistic. To value the distance we have traveled in this cycle of beliefs, then, it behooves us to begin at the beginning.

From the beginning of recognizably human life, people have struggled with understanding their place in the universe—their relationship with the physical world and what, if any, purpose their lives served. These existential questions—who am I and why

¹ Morrow, R. A. and D. D. Brown (1994) *Critical theory and methodology*. Thousand Oaks, CA: Sage.

am I here?—have been asked and answered differently in different historical contexts in a human quest for enhanced security in an uncertain world. Cave paintings and other aesthetics from before recorded (written) history constitute one expression of humankind’s struggle with these mysteries. Myth and ancient philosophy are others. As European thinking came to be dominated by the Christian (Catholic) Church, the framework shifted from a naturalist view of nature and mankind’s place in it, to a deist view. Modern science developed within the framework created by the Church, in some cases as a polemic or justification for the authority of God.² The worldview associated with modern science has been the dominant framework within which existentialist questions have been asked and answered since the seventeenth century, and it was within this framework that the American project of administrative reform was, and continues to be, constructed.

Although the archeological record is sparse, we can infer that our earliest ancestors stood in a closer and more intimate relationship with nature than do we, and that their answers to these existential questions involved that intimacy. At the dawn of human history, mankind walked an earth cloaked in mystery and uncertainty. Life was short and its secrets shadowed and unknowable. In every venture there was risk. To make sense of birth and death and lived experience, early humans sought to impose order and to find explanation. As Larue (1975) puts it, “man [sic] began to try to untangle his experiences and the basic polarities of his life: birth and death, health and illness, security and destruction. . . seasons changed without explanation. . . life forces seemed malicious and malignant, releasing food grudgingly.”³ People recognized that they had no control over the course their lives would take.

To mitigate risk and to bring meaning and purpose to their lives, humans saw nature as imbued with the essence of all-seeing and all-powerful gods and began to tell narratives of creation and survival and to enact rituals built on their beliefs. Sunlight, storm, and the vastness of the night sky were endowed with mystery and meaning. Because the people could recognize their own consciousness, they imputed “life to all around [them], but in a higher degree and of some rarer quality to those existences which [they] hold as [their] deities.”⁴ Brinton identifies five special stimuli common to all religious beliefs: “dreaming and allied conditions; the apprehension of Life and Death, from which arises the notion of the Soul; the perception of Light and Darkness; the observation of Extraordinary Exhibitions of Force; [and] the impression of Vastness.”⁵ From the archeological evidence, Paleolithic people experienced these stimuli and developed religious beliefs associated with nature.

² Pearcey, N. R. and C. B. Thaxton (1994) *The soul of science: Christian faith and natural philosophy*. Wheaton, IL: Crossway Books.

³ Larue, G. A. (1975) *Ancient myth and modern man*. Englewood Cliffs, NJ: Prentice-Hall, p. 8.

⁴ Brinton, D. G. (1969 [1897]) *Religions of primitive peoples*. New York: Negro Universities Press, p. 69.

⁵ *Ibid.*, p. 64.

To propitiate the whims of the gods and to promote luck or to defy fate, humans revered their invented gods and tried to walk in harmony with the forces of nature. To walk in fear was to give death overwhelming power. Their understandings formed the first constructed reality—became the first foundations for the modern project—and inform the myths and ceremonials of Native Americans and other indigenous peoples today.

It should be noted here that myth pretends to be neither philosophy nor science as we understand these terms today. Myth served primitive societies as a means of “understanding life, not as bare existence, but as the relationship between the totality of body, mind, spirit, and the world—the effort to achieve harmonious relationships (peace) within the totality of one’s environment.”⁶ The function of a society’s mythic belief system was conservative. “Myth supports existing social structure, patterns of belief and conduct and the current interpretation of the world. At the same time, myth tends to program attitudes of individuals and groups to encourage an uncritical acceptance of the established norms of the particular society.”⁷

What evidence there is supports an argument that as early as the Paleolithic, humans perceived the world and expressed their religious feelings in two different ways—which view adopted by which groups depending largely on geographic possibilities and economic structure. In the more barren northern plains, where nomadic hunting and gathering provided sustenance for the tribe, the principal exploration of the existential questions was done on an individual basis, generally guided by a shaman—through visions aided by hallucinogenic herbs and/or fasting. In contrast, in more southerly climates where settled agriculture and stock breeding structured the economy, the mythic experience was communal, with rituals involving all of the group members led by a priest.⁸ These two mythic directions are realized together in more advanced societies through adolescent initiation rites. Whereas “the energies of the psyche in their primary context of infantile concerns are directed to the crude ends of individual pleasure and power, in the rituals of initiation they are reorganized and implicated in a system of social duty.”⁹

By the upper Paleolithic period (circa 30,000 to 10,000 BPE) signs of a rather sophisticated belief system and increasingly complex technologies can be found.¹⁰ One sign is the proliferation of intentional and ritually-conducted burials of the dead, including females for the first time in any number.¹¹ While some burial sites can be dated

⁶ Larue (1975), p. 9.

⁷ Ibid.

⁸ Campbell, J. (1976a) *The masks of God: Primitive mythology*. New York: Penguin Books, pp. 229-232.

⁹ Ibid., pp. 117-118.

¹⁰ Dickson, D. B. (1990) *The dawn of belief: Religion in the upper Paleolithic of southwestern Europe*. Tucson, AZ: The University of Arizona Press, p. 38.

¹¹ Ibid., p. 90.

earlier,¹² upper Paleolithic sites clearly show a complex system of beliefs about life and death. Among the clues are the use of red ochre to color the body, the dressing of the body in decorated clothing, and the inclusion of mortuary offerings of food, weapons, and symbols of status in the grave. Red ochre, which had no “apparent practical or technological use,”¹³ is one of the earliest pigments that can be shown to have been used by hominids—its significance in burial rituals is thought to be connected with the blood of birth.¹⁴ The artifacts associated with these early graves suggest that the prehistoric worldview includes belief in an afterlife.¹⁵

A second sign is the appearance of cave paintings—including both accurate representational renderings of game animals and other, more symbolic, artistic motifs—and portable art—engravings on tools, jewelry, and free-standing figures. Although it is impossible to directly connect the substance of this art to the belief system it supported, it is speculated that the cave art of southwestern Europe was connected to shamanistic rituals related to hunting. The context of these paintings, deep within the cave systems, had the effect of heightening the religious experience—“cold, darkness, a separation from humankind, even danger” permeating the total experience of the rituals associated with them.¹⁶ A second aspect of context noted by Dickson (1990) and his sources is the placement of some of these galleries in cave areas juxtaposed with underground water—suggesting the cave as a transitional space between life and death or the cave as a womb of the earth. The effect of light reflecting off water on the paintings themselves must have added to the sense of mystery and magic evoked by the artists and the shamans.¹⁷

A third sign of the complexity of Paleolithic beliefs is the appearance across Europe of what archeologists have called “Venus” figures—nude female figures with exaggerated sexual features, often appearing to be pregnant. These were first assumed to be simple fertility figures, but recent research associates them with a more sacred purpose—a reverence for life and a connection with the earth as the mother of all life. This view connects with later cults of the goddess, although there is a considerable period where no figures are found, and a continuity between Paleolithic Venus figures and later worship of the Goddess cannot be directly established.¹⁸ As most examples of the Venus figure have been found associated with more-or-less permanent home sites, the Paleolithic people may have made them as guardians of the home and to represent and protect “the feminine part of the community” in daily life and especially as protection during pregnancy and childbirth.¹⁹

¹² Even Neanderthal sites show some evidence of intentional burial of the dead. *Ibid.*, p. 49.

¹³ *Ibid.*, pp. 42-43.

¹⁴ *Ibid.*, p. 94.

¹⁵ *Ibid.*, p. 95.

¹⁶ *Ibid.*, p. 120.

¹⁷ *Ibid.*, p. 122.

¹⁸ *Ibid.*, pp. 211-214.

¹⁹ J. Campbell (1976a), p. 324 and Dickson (1990), p. 214.

The upper Paleolithic worldview is more complex than a struggle for simple survival would warrant. Dickson (1990) argues that there were at least two empirical phenomenological sources for the ontological assumptions of early humans—“the passage of time and the nature of human—especially female—sexuality.”²⁰ He suggests that the model for Paleolithic thought was the observable cycle of the moon and the seasons and the cycle of female reproduction.²¹ Campbell (1976a), basing his theorizing on the frame of reference that children universally adopt, ascribes as the patterns of prehistoric human thinking the “world as an undifferentiated continuum (participation), which is all alive (animism), and which was produced by some superior being (artificialism).”²² These three explanations for phenomena can be found in all religions, regardless of local particularisms, including both the shamanistic and priestly versions of Paleolithic thought.

Classical Cosmology and the Decline of the Goddess

Moving forward in time to the first written records of human belief systems, we find a remarkable agreement in the creation narratives and value systems of people widely scattered across the map of the Mediterranean basin and Europe.²³ Perhaps the most widely known of these, the Biblical account in Genesis, the Sumerian saga of Gilgamesh, and the Egyptian creation narratives, served the additional purpose of delegitimizing worship of the Goddess and instituting instead a belief system that would support a patriarchal state and family arrangement.²⁴ The belief system surrounding the Goddess and society structured around the feminine principle of life and rebirth had survived and flourished from the Neolithic Era to 2500 BPE, especially in Mediterranean pastoral societies.²⁵

Invasion from the north and conquest of these agrarian settlements by peoples associated with hunting brought about a synthesis in religious beliefs that ultimately led to the classical Olympic pantheon in Greece. Earlier agricultural societies had held a general and almost universal understanding of the world as imbued with the spirit of life—a religion “developed from a few (astonishingly few) insights of the neolithic, Bronze and

²⁰ Dickson (1990), p. 210.

²¹ Ibid.

²² Campbell (1976a), p. 85.

²³ Newtonian science is a product of European thinking, therefore, the similarities and differences between Western (European) cosmology and Oriental cosmology will not be addressed here.

²⁴ Campbell, J. (1976b) *The masks of God: Occidental mythology*. New York: Penguin Books, and Lerner, G. (1986) *The creation of patriarchy*. New York: Oxford University Press. Suppression of Goddess cults continued sporadically until the modern era. It can be argued that Church prosecution of women accused of witchcraft in the Inquisition and the subsequent condemnation and execution of thousands of women as witches demonstrates this continuing struggle of organized, patriarchal religion to suppress worship of nature and the Goddess.

²⁵ Ibid., pp. 141-143.

Iron ages, locally adapted to landscapes and to manners of somewhat (though not absolutely) differing requirement, so in this age of intercultural exchanges they could be readily brought together again by anyone properly trained in his own tradition.”²⁶ In their adaptation, the Greeks endowed every tree and body of water with its personal deity—they were both polytheistic and anthropomorphic in their religious beliefs—the gods and lesser deities were too numerous to count and were recognizably “human” in their strengths and weaknesses.²⁷

As a result, each of the Greek city-states had its own patron god or goddess and religious practice became associated with the state. “The center and summit of the city was the shrine of the city god; participation in the worship of the god was the sign, the privilege, and the requisite of citizenship.”²⁸ The appropriation of the religious belief system as a support of government served two purposes: by the “conscriptio[n] of the supernatural, man was tamed from a hunter into a citizen;”²⁹ and religion was diluted from the prominent area of thought and reflection into a secondary, almost habitual set of rituals. This second outcome paved the way for the development in Greece of philosophy and science and the first explains the importance of the concept of self-government to Greek life.

Having no strong creation tradition to contend with, Greek philosophers were free to search for and debate the relative merits of various “first principles.”³⁰ Thales of Miletus, for example, argued that water is the first principle or cause of all things, including the gods.³¹ His study reflects a “new attitude: not faith or passive acceptance of a received doctrine, but active, reasoning inquiry” that began a tradition of scientific speculation and experimentation that continues today.³² When, later, Pythagoras, attached the status of “first principle” to the concept of “number,” “render[ing] it systematically, as a principle by which art, psychology, ritual, mathematics, and even athletics were to be recognized as aspects of a single science of harmony,” he was not only following in this tradition of inquiry, but also connecting the new Greek science to earlier traditions related to harmony and balance.³³ In the Pythagorean concept of harmony, a reaching for scientific knowledge replaced the mystic rapture of religious experience as a means of understanding the world.³⁴ Greek scientists as early as the fifth century BPE theorized

²⁶ Ibid., p. 265.

²⁷ Durant, W. (1939) *The life of Greece* (The story of civilization, book II) New York: Simon and Schuster, p. 176.

²⁸ Ibid., p. 175.

²⁹ Ibid.

³⁰ The Greek tradition of searching for foundational “first principles” leads to the development of universal laws in science.

³¹ Campbell, J. (1976b), p. 181; Heisenberg, W. (1979) *Philosophical problems of quantum physics*. Woodbridge, CT: Ox Bow Press, p. 53.

³² Ibid.

³³ Ibid., p. 185.

³⁴ Ibid.

that the earth was not the center of the universe,³⁵ but could not present convincing evidence to support this hypothesis. Such heliocentric models were dismissed when Hipparchus of Nicea developed a geocentric model with mathematical proofs that prevailed until the time of Copernicus.³⁶

The technology that permitted scientific debate to occur (and us to have access to that debate today), a written language common to all of the city-states and colonies, was introduced in the thirteenth century BPE. While they were divided in many ways, the Greeks were loosely unified in a common culture due to their language. This common Greek language evolved from Semitic sources and was first widely used in the practices of religion and commerce, although its use quickly expanded to include records of government, poetry, and philosophical discourse.³⁷

It is in the works of the great philosophers of the classical period that we find profoundly influential thinking on a broad range of ontologically charged subjects: science, ethics, and governance. Plato's utopian social vision of the Republic, with its guardian class in benevolent and wise rule over those with less inclination or ability to engage in a life of rational thought, stands in contrast to the earlier notions of Greek democratic self-government.³⁸ The accomplishment of the Periclean Age—self-government—had been “something new in the world,” and was connected with a secular, naturalistic view of the world and humankind's relation to it freed in all aspects—art, law, literature, speculation—from ecclesiastical power.³⁹ To Plato, however, the heady experience of democratic government seemed destined to lead to chaos and anarchy. Order and control were the hallmarks of Platonic rational thought.

Plato separates mind from body and external phenomena, and argues that knowledge is not achieved through the perception of sense data. “Knowledge is possible through Ideas, through generalized images and forms that mold the chaos of sensation into the order of thought.”⁴⁰ He further argues that humans think through categorizing—grouping objects and concepts based on their having similar attributes, a position that has been held in cognitive science, unchallenged until research in the last few decades.⁴¹ What Plato called the Ideas were the perfect forms of which all natural objects are imperfect reflections or derivations. Plato's notion of beauty and virtue was associated with this notion of

³⁵ Durant (1939), p. 339. Philolaus proposed a heliocentric solar system, with the earth and other planets in circular orbits around a “central fire,” a theory restated by Aristarchus of Samos two centuries later.

Campbell, J. (1976b), p. 248.

³⁶ Campbell, J. (1976b), p. 248.

³⁷ Durant (1939), pp. 204-205.

³⁸ Ibid., p. 519ff.

³⁹ Ibid., p. 233.

⁴⁰ Ibid., p. 515.

⁴¹ Lakoff, G. (1987) *Women, fire, and dangerous things: What categories reveal about the mind*. Chicago: The University of Chicago Press.

perfection. “Beauty, like virtue, lies in fitness, symmetry, and order”—qualities of perfection seldom found in the world of nature.⁴²

In spite of his respect for the thinking of Plato, Aristotle developed a different view of the world and how we come to know it. Perhaps the most dramatic example is Aristotle’s attribution of sense data as the source of knowledge.⁴³ In contrast to the concept of perfect forms, Aristotle argued that there were ten categories, or “basic aspects,” by means of which anything could be considered: “substance, quantity, quality, relation, place, time, position, possession, activity, [and] passivity.”⁴⁴ Although Aristotle’s scientific interests were principally invested in biology⁴⁵, his precise definitions of such terms as “matter,” “motion,” “infinite”, “continuity”, and “end” contributed to the understanding of physical processes that survived the Dark Ages.⁴⁶

Aristotle’s understanding of the world, derived from his studies of biological development, was organic—“all forms of motion or change (all natural processes, as we would say) are directed by a built-in goal or purpose—a so-called final cause, which was also called the object’s Form.”⁴⁷ He saw the final cause of human life to be the rational soul, and “just as the soul is the ‘form’ of the body, so God is the ‘form’ ...of the world—its inherent nature, functions, and purposes...God is pure thought, rational soul, contemplating itself in the eternal forms that constitute at once the essence of the world, and God.”⁴⁸

In reference to government, Aristotle moves away from Plato’s blanket distrust of democracy, preferring instead to argue that every type of government is good if the ruling body seeks the good of all in its governance. For example, a monarchy can provide good government so long as the king is not a selfish autocrat. In fact, each type of government Aristotle discussed—monarchy, aristocracy, and timocracy—“has a degenerate analogue when it becomes government for the governors instead of for the governed.”⁴⁹ Monarchy becomes tyranny, aristocracy becomes a plutocratic oligarchy,⁵⁰ and timocracy (a mixed form of aristocracy and democracy) becomes rule by the mob, or democracy. Of these

⁴² Durant (1939), p. 518.

⁴³ Ibid., p. 527.

⁴⁴ Ibid.

⁴⁵ Ibid., p. 529. Aristotle’s concepts related to human reproduction were quite sophisticated for his day, although when viewed from today’s perspective they seem absurd.

⁴⁶ Ibid., p. 527.

⁴⁷ Pearcey and Thaxton (1994), p. 60.

⁴⁸ Durant (1939), p. 532.

⁴⁹ Ibid., p. 534.

⁵⁰ Aristotle roundly denounced this outcome—government by wealth—because, as Durant (1939) describes it, such an oligarchy “gives power to men whose souls have been cramped by the petty calculations of trade, or the villainous taking of interest, and issues... in the conscienceless exploitation of the poor.” P. 535.

forms, Aristotle regarded timocracy the most likely to lead to the good of all, or the common interest.⁵¹

From the Classical Age of Greece, there are several notions about the world that influenced both the worldview of the Church and that of Newtonian science, and the ways in which these affected our modern understanding of government. Plato's enthusiasm for pure form and his love of mathematics brought him to view God as a geometer—the physical universe is governed by laws of mathematical precision and elegance.⁵² Geometry was “a discipline of pure reason, a portal to the mind of God.”⁵³ The later idealism of Kant and the physics of Newton could look to Plato as a foundation for some of their premises.

The Aristotelian worldview, later adapted by Church scholars to meet a different agenda, was not grounded in a reductionist view of the material world, but on knowledge as deriving from human observation of that world. In his understanding of cause, Aristotle saw four types of causes, all of which shape the world: material causes, efficient causes, formal causes, and final causes.⁵⁴ Aristotle's emphasis on human powers of reason and will, and even desire, reflects the early Greek experience of emerging victorious from the Persian Wars. As Campbell (1976b) puts it, those fifth century (BPE) Greeks:

were proud...of being men instead of slaves; of being the ones in the world to have learned...how to live as men might live, not as servants of a god, obedient to some conjured divine law, nor as the functionaries...of some... ever-wheeling cosmic order; but as rationally judging men, whose laws are voted on, not 'heard'; whose arts were a celebration of humanity, not divinity...; and consequently in whose sciences truth and not fancy was, at last, beginning to appear. A discovered cosmic order was not read as a design for the human order, but as its frame or limitation...One can realize, after coming down through all these millenniums of religion, what a marvel of new thought the wonderful, earthly humanity of the Greek polis represented in the world.⁵⁵

⁵¹ Durant (1939), pp. 536-537.

⁵² Stewart, I. and M. Golubitsky (1992) *Fearful symmetry: Is God a geometer?* New York: Penguin Books, p. 1.

⁵³ Durant (1939), p. 500.

⁵⁴ Material causes for things are related to the physical matter of which they are composed. Efficient causes for things relate to the energy required for making them. Formal causes relate to the plan according to which they are built. And, final causes for things arise from the “desire or will of someone to have [them] take their current state.” See, Casti, J. L. (1989b) Newton, Aristotle, and the modeling of living systems. (pp. 47-89) in J. Casti and A. Karlqvist, eds. *Newton to Aristotle: Toward a theory of models for living systems*. Boston, MA: Birkhäuser, p. 51.

⁵⁵ Campbell, J. (1976b), p. 179.

The spirit and celebration of human uniqueness and ingenuity that had its birth in the polis was brought to maturity in the philosophical discourses of Aristotle. Scientists of the modern era had a rich, if often conflicting, heritage in the texts of the early Greeks, and the spirit of inquiry that characterized the classical period was preserved through the Dark Ages to inform their work.

The Medieval Church and the Loss of Nature

The centuries between the intellectual hiatus of classical Greece and the beginning of the Middle Ages were marked with the rise and fall of great military empires. Aristotle's pupil, Alexander, had conquered most of the known world, but soon Rome displaced Macedonia as the power to be reckoned with in the Mediterranean arena. When Greece fell to the Romans, the works of the Greek scientists, philosophers, and playwrights were either assimilated and changed or lost. With the decline of Rome, hastened by a series of invasions from the barbaric north, civil society and government fell into disarray. The Church was the sole institution that provided people with any sense of security and stability. Faith and the authority of the Church were a refuge after the barbarians had destroyed the Roman Empire's science, prosperity, and power.⁵⁶

As Durant (1950) describes the stance of the Church in the Dark Ages:

Convinced that survival demanded organization, that organization required agreement on basic principles and beliefs, and that the vast majority of her adherents longed for authoritatively established beliefs, the Church defined her creed in unchangeable dogmas, made doubt a sin, and entered upon an enduring conflict with the fluent intellect and changeable ideas of men. She claimed that through divine revelation she had found the answers to the old problems of origin, nature, and destiny. [She] passively discouraged the investigation of natural causes; many of the advances made by Greek sciences through seven centuries were sacrificed to the cosmology and biology of Genesis.⁵⁷

The power of the Church was reinforced by what it offered to the people: "faith rather than knowledge, art rather than science, beauty rather than truth."⁵⁸ Until Europe recovered from the effects of the barbarian invasions, this seemed to be a satisfactory exchange.

⁵⁶ Durant (1950), pp. 78-79.

⁵⁷ Ibid., p. 78.

⁵⁸ Ibid., p. 737.

The populace of the Mediterranean was largely illiterate, and only a few intellectuals knew the Greek language.⁵⁹ To address that lack, Boëthius, in the fifth century PE, produced textbooks in Latin on arithmetic and geometry drawn from Greek sources and planned to translate and write commentary on the philosophies of Plato and Aristotle.⁶⁰ He was, unfortunately, unable to finish this work, but did manage to complete the first part of Aristotle's logic and to write a text on syllogism that provided the basis for the study of logic in Roman schools until the time of Thomas Aquinas.⁶¹

Exploration of the texts and ideas of Plato and Aristotle was discouraged by the early Church, especially by St. Augustine, who argued that the Church is the only repository of truth and authority, and denounced the great Greek thinkers as pagans.⁶² Augustine was a strong advocate of the absolute authority of the Roman church. As Allen (1975) puts it, "the church, as teaching and ruling the world, was not the people but the hierarchy; the grace that saved was deposited primarily not in the congregation, but in the bishops, by whom it was administered to the people."⁶³ The Augustinian view of the world, locating God outside the world with the Church as judge and mediator for a sinful people, was accepted without challenge until the renewed interest in liberal education that characterized the West in Charlemagne's time.

The direction of learning in the Carolingian renaissance was marked by the theological division of the Church into the Roman Catholic Church and the Greek Orthodox Church. While the Greeks based their teaching on the gospel of John and advocated a human-centered inner experience of God, the Roman Church remained firm in its Augustinian views. For the Greeks, the immanence of God in the world was understood to be revealed by human reason; for the Romans, humans were separated from God through original sin and only the Church, through the dispensation of grace, had the power to restore the relationship.⁶⁴ So long as the Roman Church remained true to Augustinian teachings, "mankind stood alone in its isolation, apart from nature on the one hand, and apart from God on the other."⁶⁵ The Church's insistence on this isolation laid the groundwork for a science that could view the natural world as an object.

⁵⁹ Delhaye, P. (1960) *Christian philosophy in the Middle Ages*. Trans. S. J. Tester. London: Burns & Oates, p. 25.

⁶⁰ Ibid.

⁶¹ Ibid., p. 26; cf. Morrall, J. B. (1967) *The medieval imprint: The founding of the western European tradition*. London: C. A. Watts & Co., Ltd., p. 61.

⁶² Durant (1950) *The age of faith*. (The story of civilization, Book IV) New York: Simon and Schuster, p. 75; Allen, A.V.G. (1975) *The continuity of Christian thought in the light of its history*. 4th Ed. Hicksville, NY: The Regina Press, p. 150.

⁶³ Allen (1975), p. 155.

⁶⁴ Ibid., pp. 176-180.

⁶⁵ Ibid., pp. 220-221.

It was the task of the scholastics of the twelfth century to bring the Augustinian worldview, where the Church alone had access to absolute truth, into some accord with the exercise of human reason and the practice of human science.⁶⁶ With the founding of the great cathedral schools in the ninth century—later to become the first universities—the Greek “heresies” began to be filtered back into the mainstream of Western thinking. In order to achieve a better understanding of the scriptures, scholars resumed the study of liberal arts and the classics.⁶⁷ Thereafter, in a slow process of intellectual growth, the tenets of Augustinian teaching were challenged, especially as regards human thirst for truth and knowledge and the ongoing nature of revelation.⁶⁸ From one of the challengers, Erigena, there is renewed emphasis on the dialectic nature of human reasoning—“division and analysis...by division the mind splits an original complex and impenetrable unity into distinct elements; analysis takes up these elements again...[and recombines them]...to arrive at a synthesis, all the richer because now [the mind] is aware of the richness of the parts thus arranged and ordered.”⁶⁹

Another challenger, William of Ockham, made two significant contributions to the further rationalization of human scholarship. The first, for which he is universally remembered, was the principle of simplification known as Ockham’s razor—“*entia non sunt multiplicanda sine necessitate*”—which translates roughly as: things should not be multiplied (complicated) without need.⁷⁰ While today we apply Ockham’s razor to all parts of scientific process, his original reference was to premises—keep your assumptions to a minimum. Ockham’s second contribution relates to a division of the subject matter of scholarship that foreshadows Sir Francis Bacon. He argued that “only empirically observable facts could be regarded as demonstrable by reason; all else must be regarded as falling within the sphere of Faith.”⁷¹ As science expanded its ability to observe, its influence on human thinking expanded as well, and the sphere allotted to faith began to shrink.

Europe of the High Middle Ages was in a state of transition. The feudal order was beginning to make way for the rise of nation-states, and internal conflicts in the Church hierarchy were beginning to erode its influence. Where previously people had turned to the Church for judgment and justice, they now turned to secular courts, based on Roman law and human judgment.⁷² Human freedom was not measured in terms of social class or

⁶⁶ Ibid., pp. 206-207.

⁶⁷ Delhaye (1960), p. 43; Koenigsberger, H. G. (1987) *Medieval Europe: 400-1500*. Harlow, UK: Longman, p. 199; pp. 269-271; Morrall (1967), p. 79; and Luscombe, D. (1997) *Medieval thought*. Oxford: Oxford University Press, p. 29. The seven liberal arts were: grammar, rhetoric, logic, geometry, arithmetic, music, and astronomy.

⁶⁸ Delhaye (1960), p. 53.

⁶⁹ Ibid., p. 55.

⁷⁰ Delhaye (1960), p. 117.

⁷¹ Morrall (1967), p. 138.

⁷² Southern, R. W. (1993) *The making of the Middle Ages*. London: Pimlico, p. 95.

contractual obligations, but rather through the application of law and within the rational order that application imposed.⁷³ These changes in secular political and social understanding, as well as the wide divergence in theological thinking, eroded the old boundaries of knowledge.⁷⁴ The love of logic and a “striving towards universality”⁷⁵ can be seen underlying the changes, moving from the local, fixed, and particular toward an understanding of life less as an “exercise in endurance” and more as “a seeking and a journeying.”⁷⁶

Much of what was “lost” of the writings of Aristotle, as well as Ptolemy’s model of the solar system, were reintroduced into the discourse in the twelfth century by Moslem Arabs living alongside Christians in Italy and Spain.⁷⁷ Scholars could now examine and discuss the “main body of ancient science and metaphysics” outside the filter of the Roman tradition.⁷⁸ While the Church still officially decried the mixing of the sacred with the secular, its need for educated administrators and officials hampered its efforts at suppressing further the classics as part of university education.⁷⁹

Thomas Aquinas is perhaps the best known of the scholastics of the High Middle Ages, and it was largely due to his work that Aristotelian thinking came to replace the Neo-Platonism in official Church teachings. He argued, much as Aristotle had, that “knowledge is a natural product, derived from the external corporeal senses and the internal sense called consciousness of the self.”⁸⁰ We can know the world through our senses, but cannot directly experience—can only extrapolate—the metaphysical being of others or God. Aquinas argued that essence, or that which is “necessary to the conception of a thing,” and existence, or the “act of being,” are different.⁸¹ All created beings are either active or passive—a “mixture of being and becoming;” all but God have the characteristic of potentia or possibility—they can be changed or acted upon by outside forces.⁸² Thomas argued, against Plato’s metaphor of the cave, that “reality is truly substantial, that it is not simply a reflection or a shadow,”⁸³ and that human reason could access that reality—could find truth.

⁷³ Ibid., p. 106.

⁷⁴ Delhaye (1960), pp. 66-78; Southern (1993), p. 211.

⁷⁵ Southern (1993), p. 211.

⁷⁶ Ibid., p.212.

⁷⁷ Delhaye (1960), pp. 94-97; Koenigsberger (1987), p. 203; Cohen I. B. (1985) *The birth of a new physics*. Rev., New York: W. W. Norton & Company, p. 27.

⁷⁸ Southern (1993), p. 210.

⁷⁹ Ibid., p. 163; cf. Koenigberger (1987), pp. 142-143.

⁸⁰ Durant (1950), p. 967; cf. Luscombe (1997), p. 101 ff.

⁸¹ Ibid., p. 968.

⁸² Ibid.

⁸³ Delhaye (1960), p. 107. In the metaphor of the cave, Plato describes humans as captives in a cave, with the only light cast by a fire behind them. All they can see is the shadows made by themselves and objects behind them. When one of the prisoners escapes, he sees the real world for the first time. Plato argued that we are prisoners in a cave and, without turning our eyes to pure form, we can be deluded into thinking that

The search for truth in the world around them is, therefore, the proper occupation of humans in this life—and in the afterlife “to see this Truth in God.”⁸⁴ Just as Aristotle had defined ethics as the pursuit of happiness, Aquinas defined it as “the quiet, pervasive, continuing happiness of understanding.”⁸⁵ With reference to the organization of the political state, Aquinas built again on Aristotle. He argued that there are three kinds of laws: natural laws of the universe, divine laws, as revealed in scripture, and positive laws created by the secular state.⁸⁶ In his masterpiece, *Summa Theologica*, he justifies the use of human reasoning, not to prove matters of faith, but to come to understand the message of revelation, “hence holy teaching uses the authority of philosophers who have been able to perceive the truth by natural reasoning.”⁸⁷

The teachings of Aquinas were not accepted in the Church or the universities without question or challenge, but they did bring about an ontological shift in European thinking. No longer was it accepted that the Church was the only depository of truth. The work of Aquinas in particular and the scholastics in general ushered in an era of rationalism—“an acceptance of the natural world and the value of studying it”—that would provide an underpinning for the development of modern science.⁸⁸

Galileo, Descartes, and Newton: Machines, Minds, and Mathematics

The Middle Ages are often regarded as an empty period in human social and intellectual development. The “loss” of Greek thinking (later recovered through the work of the scholastics), the barbarian invasion of the cultural centers of early Europe, the feudal system of social organization, and the dogmatism of the early Church are seen as indicators that the centuries leading to the Italian Renaissance were truly “Dark Ages.” However, it was during these centuries that various conditions came into being that would be essential to the birth of modern science.

The fifteenth and sixteenth centuries in Europe can be characterized as a time of both rebellion against the previous millennium’s developmental processes and the flowering of a magnificent period of creativity.⁸⁹ Additionally, thanks to the travels of brave (if foolhardy) explorers responding to the growth of commerce and trade, a new understanding of the physical geography of the Earth and a new visualization of

our sense impressions of the shadows are what is real. See, Heisenberg, W. (1997) The development of philosophical ideas since Descartes in comparison with the new situation in quantum theory. (125-136) in A. E. Tauber, ed. *Science and the quest for reality*. New York: New York University Press, p. 125.

⁸⁴ Durant (1950), p. 972; cf. Luscombe (1997), p. 107.

⁸⁵ Ibid.

⁸⁶ Ibid., p. 975

⁸⁷ cited in Koenigsberger (1987), p. 271.

⁸⁸ Koenigsberger (1987), p. 271.

⁸⁹ Morrall (1967), p. 4.

humankind's place in the world began to spread.⁹⁰ Where once people believed that the habitable world was a disk of land surrounded by ocean and the perilous unknown, now they had reports from the travels of Marco Polo, Henry the Navigator, and Christopher Columbus, and the maps that demonstrated the spherical nature of the Earth and the vast continents and other cultures beyond the Mediterranean basin. This amounted to a liberating "discovery of the earth,"⁹¹ one that opened the earth to the observation and examination of science.

We often hold science alone responsible for the attitude we hold toward nature, but the process of desacralization of nature began with the early Christian church and continued into the Middle Ages. In an attempt to eliminate various pagan practices, the early Church had labeled any intimate relationship with the natural world "idolatry." Augustine's God was not immanent in the natural world, rather He was distanced from His creation. Association of sacredness with, for example, a grove of trees or a mountain stream, was considered heresy, and so long as traces of it remained, the Church's authority, so heavily vested in the Biblical creation narrative, could be challenged.

The development of science required the disassociation of the divine from the natural. For science to prosper, it was necessary for humans to take the stance that nature was theirs to exploit and use, not theirs to worship and revere. "As long as nature commands religious worship, dissecting her is judged impious."⁹² In stripping the divine away from this world and placing in securely in the next, the Church prepared the ground for the kind of objectivity that would characterize science thereafter. The early modern scientist's attitude differs little from that of the contemporary artist in that both considered "nature not only independently of God, but even independently of man...[aiming] at its 'objective' description or explanation."⁹³ The values of the early modern scientist—informed as they were by the Church's teaching that "god had created men as transcendent beings and that nature was provided to them as a garden to be ruled"—were all too "effective in promoting those kinds of knowledge that would lead to the mastery, control, and domination of nature."⁹⁴ Social activist Theodore Roszak asks, "what becomes of a world purged of its sacramental capacities?" and answers that it is

⁹⁰ Ibid., p. 15; Goldstein, T. (1980) *Dawn of modern science*. Boston, MA: Houghton Mifflin Company, pp. 15-24.

⁹¹ Goldstein (1980), p. 15.

⁹² Pearcey and Thraxton (1994), p. 24.

⁹³ Heisenberg, W. (1970) *The physicist's conception of nature*. Trans. A. J. Pomerans. Westport, CT: Greenwood Press, Publishers, p. 9.

⁹⁴ White, L., Jr. (1972) The historical roots of our ecologic crisis. In C. Mitcham and R. Mackey, eds. *Philosophy and technology: Readings in the philosophical problems of technology*. New York: The Free Press, p. 260; Keller, E. F. (1985) *Reflections on gender and science*. New Haven, CT: Yale University Press, p. 64.

“doomed to become an obstacle inviting conquest, a mere object... a thing... to be worked, used up, exploited.”⁹⁵

Challenged internally by the rationalism and dissent of the scholastics, the Medieval Church became vulnerable to external challenges to her power during this period. The trial of Galileo, often cited as an example of Church hostility towards science, was in reality a defense of Christian cosmology not an assault on science. Galileo’s scientific confirmation of Copernican astronomy was not, in itself, a problem for the Church. The Church did, however, have a considerable investment in the notion of the centrality of the earth with respect to the rest of the solar system. Theologians had to consider the adverse effect on Church authority if it could be shown that the Biblical account was less than absolutely factual—if, in fact, “God had not chosen the earth as His human home... [and if the earth could] be shorn of its primacy and dignity, to be set loose among planets so many times larger than itself, and among innumerable stars.”⁹⁶ It was not science in general that was on trial, but the particular outcome of Galileo’s work.

The late Middle Ages also saw the decline of feudalism and the carving up of Europe that preconditioned the seventeenth century rise of the secular nation-state. Where once there was one authority in western Europe—the Church—and this authority was expressed in secular matters through the feudal relationship, now there were beginning to be multiple loyalties. Nationalistic tendencies were supported by the use of vernacular language, and people began to see themselves as being, for instance, French or English first, rather than seeing themselves as faithful Catholic Christians, serving a given feudal lord. One mark of the beginning of the modern era is the formation of “separate, sovereign states, each of them organized around a particular nation, with its own language and culture, maintaining a government that was legitimated as expressing the national will, or national traditions, or national interests.”⁹⁷

The late Middle Ages and the Italian Renaissance periods prepared the way for science in yet another way—in the refinement and creation of new tools for both observation and sense-making. Leonardo Fibonacci popularized the use of Hindu numerals, zero, and the decimal system in the thirteenth century. He also invented algebra, yielding another mathematical means of understanding and representing reality.⁹⁸ While we may conceive of science’s discoveries as predating and leading to the practical applications of technology, the craftsmen of the Middle Ages produced such instruments and technological products as “the windmill, the mechanical clock,...spectacles, gunpowder,

⁹⁵ Roszak, T. (1972) *Where the wasteland ends: Politics and transcendence in postindustrial society*. Garden City, NY: Doubleday & Company, Inc., p. 127.

⁹⁶ Durant, W. and A. Durant (1961) *The age of reason begins*. (The story of civilization, Book VII). New York: Simon & Schuster, p. 606.

⁹⁷ Toulmin, S. (1990) *Cosmopolis: The hidden agenda of modernity*. Chicago, IL: The University of Chicago Press, p. 7.

⁹⁸ Durant (1950), pp. 989-991.

and the mechanical crank,” all of which emerge in the period between 1150 and 1450 PE, and all of which aided in launching the modern project.⁹⁹

Among the other mathematical tools created in this period were: logarithm tables, the slide rule and the metric system. In addition, production of refined instruments like the telescope, barometer, and microscope, all of which required greater and greater precision in the grinding of lenses, were necessary in order that discoveries such as Galileo’s could be made.¹⁰⁰

A final condition that began in the Middle Ages and remained to contribute to the founding of modern science is associated with the notion of publicness. Medieval universities in the scholastic period were accustomed to staging “public disputations among the masters, advanced students, and distinguished visitors.”¹⁰¹ Such open discussions of the pressing and interesting scientific and philosophical issues of the day contributed to the urbanity and sophistication of the cathedral university cities of early Europe. They also formed a basis for the idea of performing scientific experiments in public settings and the development of scientific societies and publications. Unlike either religion or magic, scientific experiments could be performed before credible witnesses—transforming what had been knowledge derived by personal observation and experiment, enhancing personal authority, to that associated with “a depersonalized, ‘public’ authority.”¹⁰² The development of such groups as the Royal Society permitted scientists to work in concert, to share problems and solutions, and to maintain a record of these transactions.¹⁰³ The scientific report allowed for an even greater number of “virtual witnesses,” by spreading the results of experiments among a broad number, permitting duplication and validation.¹⁰⁴ All of this gave greater legitimacy to science, and, when combined with the state as well as private sponsorship that would come in later centuries, enhanced the viability of science as a project.

Although there are many contributors to the birth of modern science, I will focus on the three who most significantly shaped the modern worldview—Galileo, Descartes, and Newton. Galileo (1564-1642 PE) is primarily remembered for his experimentation with motion and rest (and deriving mathematical models of acceleration and inertia from his experiments) and for his confirmation of the Copernican model of the solar system made possible through his design and construction of a more powerful telescope, the lenses of

⁹⁹ Morrall (1967), p. 140.

¹⁰⁰ Durant and Durant (1961), pp. 584-587.

¹⁰¹ Durant (1950), p. 967.

¹⁰² Keller, E. F. (1997) The paradox of scientific subjectivity. (182-200) in A. I. Tauber, Ed. *Science and the quest for reality*. New York: New York University Press, p. 187.

¹⁰³ Cohen, I. B. (1985), pp. 149-150.

¹⁰⁴ Keller (1997), p. 187.

which he ground himself.¹⁰⁵ This work is certainly significant in its own right, but perhaps even more important were Galileo's operating methods and principles.

Galileo was the first of the fathers of modern science to reduce the natural processes he observed to mathematical description and to guide observation by hypothesis.¹⁰⁶ His studies of bodies in motion and at rest, leading to a precise mathematical definition of acceleration, inevitably rest on concepts of space and time that differ from those of Aristotle. Galileo was the first to associate space directly with geometry. His metaphysics are based on a "real world [that] is the world of bodies in mathematically reducible motions, and this means that the real world is a world of bodies moving in space and time."¹⁰⁷

Galileo is credited by Werner Heisenberg and Albert Einstein with being the first physical scientist to use "scientific reasoning"¹⁰⁸ and "observation guided by certain principles and definite rules of thought."¹⁰⁹ Intuitive, commonsense expectations about bodies in motion—for instance, that heavier bodies would fall faster than light ones—were shown by Galileo to be false. His experiments were structured to elicit results that were not preconditioned by such expectations. The importance of his methods of investigation lay in that they "destroy[ed] the intuitive view and replace[d] it by a new one," one based on careful measurement and repeated trials.¹¹⁰ For this to be possible, Galileo had to have conceived of process as following a cause-and-effect order. He had to believe that "every detailed occurrence can be correlated with its antecedents in a perfectly definite manner, exemplifying general principles."¹¹¹

One important offshoot of Galileo's methodical approach to observation was the standardization of experimentation—an active intervention in the natural world to observe effects—and the ability to tabulate results so as to be able to generalize. This occurred because Galileo was able to "conceive of science as being capable of discovering global truths about nature."¹¹² While his predecessors spoke confidently of particular results, Galileo could and did generalize—develop theory that would cross from one experiment or set of circumstances to another.

¹⁰⁵ Cohen (1985), pp. 185-187.

¹⁰⁶ Heisenberg (1970), pp. 8 and 15.

¹⁰⁷ Burt, E. A. (1989) *The metaphysical foundations of modern physical science*, Rev. Ed., Atlantic Highlands, NJ: Humanities Press, p. 93.

¹⁰⁸ Einstein, A. and L. Infeld (1938) *The evolution of physics: From early concepts to relativity and quanta*. New York: Touchstone, p. 6.

¹⁰⁹ Heisenberg (1970), p. 87.

¹¹⁰ Einstein and Infeld (1938), pp. 8-9.

¹¹¹ Whitehead, A. N. (1997) The origins of modern science. (53-69) in A. I. Tauber, Ed. *Science and the quest for reality*. New York: New York University Press, p. 63.

¹¹² Prigogine, I. And I. Stengers (1984) *Order out of chaos: Man's new dialogue with nature*. New York: Bantam Books, p. 44, emphasis in original.

The contributions of Rene Descartes (1596-1650 PE) consist in both the development of a philosophical context for modern science and in tools for the further connecting of science to mathematics. His invention of analytical geometry is useful because it “presupposes an exact one-to-one correspondence between the realm of numbers, i. e., arithmetic and algebra, and the realm of geometry, i. e., space.”¹¹³ From this assumption, one is easily led to a concept of physics—the study of matter and motion in time and space—being “reducible to geometric qualities alone,”¹¹⁴ and from there to the hope that all sciences, including biological and social sciences, could be conceived as “an organic unity.”¹¹⁵ Descartes is, therefore, the principal promoter of both the mechanistic, clockwork worldview of modern science and of its reductionist tendencies.¹¹⁶

Descartes assumed an underlying, unchangeable foundation for the world. He believed in a God who “governs nature by decrees set down in the beginning,” and, in his view, “the mathematical laws sought by science were legislated by God.”¹¹⁷ He saw human knowledge as incomplete—“if our knowledge were complete we should be able to reduce not only astronomy and physics and chemistry, but all the operations of life, except reason itself, to mechanical laws.”¹¹⁸

Descartes divided the world into innate qualities and secondary qualities. The innate characteristics of the world are not experienced by the senses, but have being independent of our experience. Descartes identified as innate “the idea of God, of the self, of space, time, and motion, and the axioms of mathematics”—our understanding of these arise in the human soul “from its own essence and rationality.”¹¹⁹ Thus, for Descartes there is an inevitable division between mind and body. Mind, or “thinking substance,” and body, or “extended substance,” operate independently of each other.¹²⁰ The world we experience is a world of extended bodies, according to Descartes, and “has been nothing but a vast machine. There is no spontaneity at any point; all continues to move in fixed accordance with the principles of extension and motion...with the regularity, precision, inevitability, of a smoothly running machine.”¹²¹ When challenged to account for the dialogue between mind and body, Descartes equivocated, attributing the interaction to the

¹¹³ Burt (1989), p. 106.

¹¹⁴ Ibid.

¹¹⁵ Ibid., p. 107.

¹¹⁶ Pearcey and Thaxton (1994), pp. 99; 106.

¹¹⁷ Ibid., p. 26; cf. Burt (1989), p. 115.

¹¹⁸ Durant and Durant (1961), p. 642.

¹¹⁹ Ibid., p. 640. Descartes built on Galileo’s conceptions of space and motion, but his attribution of uniform, straight-line motion as a “state” similar to that of rest, can be considered quite radical. See Cohen (1985), p. 210.

¹²⁰ Pearcey and Thaxton (1994), p. 132; cf. Burt (1989), p. 121, and Davies, P. C. W. and J. R. Brown (1997) *The strange world of the quantum*. (pp. 91-124) in A. I. Tauber, ed. *Science and the quest for reality*. New York: New York University Press, p. 117.

¹²¹ Burt (1989), p. 111.

mysterious ways of God that are “beyond our finite understanding.”¹²² Cartesian dualism posed a problem for its originator and continues to pose a problem centuries later.

Descartes identified the laws of physics and mathematics as innate properties of creation—properties awaiting our discovery and appreciation. “Since the existence and behavior of matter depend entirely on God, the laws of physics directly reflect the attributes of God...eternity and immutability.”¹²³ It was important to Descartes that such an attribution be made, since it was crucial that mathematical representations of these laws “be eternally true of the physical world.”¹²⁴

It is impossible to discuss Descartes without touching upon his famous “*cogito ergo sum*”—“the causal and ontological proofs of the existence and perfection of God.”¹²⁵ The “*cogito*” was “intended not as a syllogism but as an immediate and irrefragible experience, the clearest and most distinct idea that we can ever have.”¹²⁶ In establishing that by the act of thought we can be assured that we, and therefore, God have existence, Descartes provided a standard of truth against which our other ideas can be measured. Ideas could be considered true “in proportion as they approach this primal intuition—this direct perception—in distinctness and clarity.”¹²⁷ The “*cogito*” also stands as an affirmation of the scientist’s reliance on and belief in God, not as an immanent participant in daily experience, but as the author of the system of orderly matter and motion that we perceive as our world.¹²⁸

Sir Isaac Newton (1643-1727 PE) is the natural philosopher most closely identified with the birth of modern scientific thinking. Newtonian physics was universally accepted as the only accurate representation of the world until the discoveries of quantum theorists in the early twentieth century cast that status into doubt. Although his development of the laws of motion are clearly his most important theoretical work, Newton’s work in optics and his development of the calculus are each significant contributions in their own right.

Although we most often connect Newton’s understanding gravitational force with the mythical representation of an apple dropping on his head, it is his mathematical description of the interactions of forces and bodies that assured Newton’s place in the history of science. It was Newton’s credo that “everything knowable about a system is a function of the position and momenta of particles,” a position whose effectiveness in describing physical phenomena is matched only in Descartes’s earlier claim of the

¹²² Durant and Durant (1961), p. 643.

¹²³ Pearcey and Thaxton (1994), p. 86.

¹²⁴ Burt (1989), p. 115.

¹²⁵ Ibid.

¹²⁶ Durant and Durant (1961), p. 639.

¹²⁷ Ibid.

¹²⁸ Pearcey and Thaxton (1994), p.70; cf. Heisenberg (1997), p. 126 and Keller (1997), p. 186.

correspondence of points in physical space with points in abstract mathematical space.¹²⁹ Newton's was the heir to Galileo's empiricist and experimental methods, but was the first to combine these with the deductive and mathematical strain of natural philosophy that characterized Descartes's thinking.¹³⁰ For both Descartes and Newton, their mathematics (analytical geometry and calculus) were "the vehicles by which their underlying visions of reality could be translated into a mathematical framework, which then served to produce the predictions by which their epistemology and world-view would later be enshrined by the scientific community as the framework by which to describe and probe the goings-on of Nature."¹³¹

Newton's mathematical model, his three laws of motion and his system of the world, were published in his *Philosophiae naturalis principia mathematica* (*Mathematical Principles of Natural Philosophy*) in 1687. Newton conceptualized change in a mechanical universe that could be completely described by his three laws:

1. Every body continues in its state of rest, or of uniform motion in a straight line, unless it is compelled to change that state by forces impressed upon it;
2. The change of motion is proportional to the motive force impressed, and is made in the direction of the straight line in which that force is impressed; and
3. To every action there is always imposed an equal reaction.¹³²

Newton's three laws are less laws than working assumptions about the world. The first law of motion describes inertia in an ideal, frictionless situation, and acts as a counter-argument to Aristotle's notion of each body occupying its unique "natural place" in the universe and being at rest as the natural state of each body.¹³³ The second law implies the existence of varying degrees of force and directions of forces (scalars and vectors) and adds the mass of bodies into the equation.¹³⁴ The third law of motion introduces the interaction of two separate bodies and postulates that the forces these exert on each other balance, not by canceling each other out, but by propelling both in opposite directions.¹³⁵

The efficacy of Newton's understanding of causation—its experimental validation and explanatory power—brought about the decline of Aristotle's influence in the physical

¹²⁹ Casti, J. L. (1989) Newton, Aristotle, and the modeling of living systems. (pp.47-89) in J. Casti and A. Karlqvist, eds. *Newton to Aristotle: Toward a theory of models for living systems*. Boston, MA: Birkhäuser, p. 48.

¹³⁰ Burt (1989), pp. 212-215.

¹³¹ Casti (1989b), p. 48, emphasis in original.

¹³² Durant, W. and A. Durant (1963) *The age of Louis XIV*. (The story of civilization, Book VIII) New York: Simon and Schuster, p. 540; cf. Cohen (1985), p. 152.

¹³³ Asimov, I. (1966) *The history of physics*. New York: Walker and Company, p. 24.

¹³⁴ *Ibid.*, pp. 26-33.

¹³⁵ *Ibid.*, pp. 34-36.

sciences. Newton’s mathematical model reduces all outcomes in the physical world to just two of Aristotle’s causal factors—material causes and efficient causes. Aristotle had argued that all science could be considered as asking of Nature the question, “why?” and receiving as answer a “because” composed of four causal categories, that when taken together provide a complete answer. Things are as they are because of the matter that composes them (material cause); because of the energy involved in their creation (efficient cause); because of the “plan according to which they were built” (formal cause); and because of the will of someone that they exist in their current state (final cause).¹³⁶ Each of these causal factors, Aristotle argued, provides a different aspect of explanation, illuminates a different face of the situation, and to ignore one or more is to rely on incomplete information. Newton’s model of the world disregards formal and final causes—he, in common with Galileo, was more concerned with asking nature “how?” than in finding out why.¹³⁷ Additionally, the effects of formal and final causes proved impossible to reduce into mathematics. The loss of those aspects of explanation was considered inconsequential in view of the apparent overall adequacy of Newton’s model.¹³⁸ Newton’s model was one of supreme purity, but was achieved at the cost of completeness.¹³⁹

Newton’s *Principia*, as its preface explains, was offered to the world as a means of describing the unseen but real forces that bring about the attraction and repulsion observed between particles or bodies.¹⁴⁰ The concept of gravitational force central to the mechanical universe was deduced from observing the actions of bodies, not the result of speculation or hypothesis. Newton eschewed the notion of hypothetical thinking. He saw science as deducting from experiment or observation, then developing the mathematical model, and only after the laws of nature had been abstracted in this way, applying them to other situations by means of induction.¹⁴¹ By ridding science of speculation, Newton cleared the way for science to become “a body of absolutely certain truth about the doings of the physical world...the exact mathematical formulation of the processes of the natural world.”¹⁴²

Newton’s “System of the World” is a picture of absolutes. Space and distance, time and motion were considered by Newton to be absolute, not relative to external influences, as Einstein would later demonstrate. He visualized a center to the system of the world that is unmovable, providing a platform of absolute rest, postulated as the “luminiferous

¹³⁶ Casti (1989b), p. 51.

¹³⁷ Prigogine and Stengers (1984), p. 40.

¹³⁸ Mathematicians like John Casti are presently trying to rehabilitate Newton’s model by incorporating formal and final causes.

¹³⁹ Prigogine and Stengers (1984), p. 51.

¹⁴⁰ Burt (1989), p. 209.

¹⁴¹ *Ibid.*, p. 224.

¹⁴² *Ibid.*, p. 226, emphasis in original.

ether,” from which all motion can be calculated.¹⁴³ Newton authoritatively spoke of time and space thus: “Absolute, True, and Mathematical Time, of itself, and from its own nature flows equably without regard to any thing external...Absolute Space, in its own nature, without regard to any thing external, remains always similar and immovable.”¹⁴⁴

The three laws of motion were constructed assuming ideal conditions—conditions that never obtain in the physical world. Newton’s model of gravitational force could give good predictions in the case where there were only two bodies involved; if any other bodies are introduced into the scenario, the mathematics becomes non-linear and precise prediction impossible. Newton saw the mass of an object as constant—later quantum theory would show mass as varying.¹⁴⁵ But, despite these shortcomings, Newton’s science and the work that followed based on his thinking would capture the imagination of Europe. Its promise of certainty resonated with the human need for security, and its ability to predict appealed to those who wanted to control, first the natural world, and later the social world.

Newton did not seek to exclude religion from his worldview, but contemporary theologians were fearful of the influence that the *Principia* might have on religion. Newton used the public forum of the Boyle lectures to dispel these fears. He encouraged Richard Bentley, in his 1692 lecture, to demonstrate the connection of the mechanical universe to God by “turn[ing] the new world-view to the support of faith by stressing the apparent unity, order, and grandeur of the universe as evidence of the wisdom, power, and majesty of God.”¹⁴⁶ Newton’s universe was the creation of God seen as an engineer—one who designed the universe and whose mechanistic laws kept all bodies in predictable motion through absolute time and space.¹⁴⁷ God was still part of the picture, but was further removed from the daily experiences of individuals. This same vision of the universe was used by the Deists in “their identification of God with Nature and her laws.”¹⁴⁸ And, it was Rousseau’s deistic interpretation of Newton’s cosmology that “encouraged the mechanistic atheism of many *philosophes*,” and through them, became a significant part of our present understanding of both physical and social systems.¹⁴⁹

Defining Characteristics of the Modern Worldview

¹⁴³ Newton, I. (1934[1687]) *Philosophiae Naturalis Principia Mathematica*. Trans. A. Motte. Berkeley, CA: University of California Press, vol. 2, p. 419, as cited in Shlain, L. (1991) *Art and physics: Parallel visions in space, time, and light*. New York: Quill, p. 71.

¹⁴⁴ Newton (1687) *Principia*, vol. 1, p. 6.

¹⁴⁵ Durant and Durant (1963), p. 547.

¹⁴⁶ *Ibid.*, p. 546.

¹⁴⁷ Pearcey and Thaxton (1994), p. 71.

¹⁴⁸ Durant and Durant (1963), p. 546.

¹⁴⁹ *Ibid.*, pp. 546-547.

Seventeenth century science was so effective in explaining and predicting events in the physical world that it became the model for all systems, including those human systems called societies, governments, and organizations. The view of the world that characterized science in the time of Newton carried many distinctive traits and assumptions that have been explicated from its history and substantive content. It is the contention of this dissertation that the dominance of these traits and assumptions—of this ontological perspective—in social thought and organization constrained the project of government reform in the United States to the extent that there was very little choice about the form government could take. To verify that there was indeed little choice, it will be necessary to examine the historical record of the reform period for the following footprints of Newton and his contemporaries.

Foundational Unity

Western science and philosophy, at least since the Enlightenment, has been caught up in a search for a unified foundational truth underlying the apparent complexity of nature and human existence. The lingering influence of St. Augustine, who translated Plotinus's ideal of the "One" into a locating of the source of absolute truth in the Church,¹⁵⁰ is seen in Newton's "absolute time" and "absolute space" and in his mathematical proofs. The search for foundations in science led to the formulation of the basic laws of motion that sufficed to send humans to the Moon, and to the discovery of the atom and the basic components of the atom, and continues today with the attempt to develop a unified field theory that brings the four fundamental forces into agreement with quantum theory. Scientific knowledge has certainly been advanced through efforts such as these, but there is disagreement among scientists about the value of searching for unifying absolutes.

As to the effect of the notion of absolute foundations on social systems, it can fairly be said that such notions have contributed to some of the worst of human behaviors—running the gamut from person-to-person discrimination and prejudice to civil and religious war to racial cleansing. When a person or a group believe that they have found a piece of absolute truth, any kind of atrocity can be committed, and then justified, in its name.

Perspective and Objectivity

Art and science are often not as far apart as is commonly supposed. When Renaissance artists discovered and began to employ perspective in their paintings, they foreshadowed one of Newton's footprints. The use of perspective makes two important contributions—art as representing reality, and providing the observer with a distinct point of view. For the artist, "perspective...is the way of making a picture on a flat surface in such a manner

¹⁵⁰ Boisvert, R. D. (1998) *John Dewey: Rethinking our time*. Albany, NY: State University of New York Press, pp. 5-7.

that the various objects represented in it appear to have the same sizes, shapes, positions, relatively to each other, as the actual objects as located in actual space would have if seen by the beholder from a single determined point of view.”¹⁵¹ True perspective in a painting takes the observer outside the scene—places him or her in a position where objective observation can, in fact must, take place. The imposed point of view is a privileged position—one that would be taken by the scientist in his or her examinations of nature.

The privileged position is very clear in art, but somewhat convoluted in science. The artist, in creating the relationships in the painting, assigns to the subject observer a “presence always outside the painting, yet connoted by an isomorphic absence in the painting.”¹⁵² In the seventeenth century, science claimed a God’s-eye view of the world—an observation point that was acknowledged as “absolutely special and absolutely knowing.”¹⁵³ Science has since sought to overcome the paradox created when the scientist-observer, a person who is a part of nature, attempts, as Newton assumed possible, to stand outside the work in order to manipulate and observe it. It was not until the nineteenth century that the term “objective” took on its present meaning—“aperspectival—a view from nowhere, knowledge without a knower.”¹⁵⁴ Prior to that time, objectivity was bound to a given and understood perspective.

The neutral objectivity we associate with science—the distance assumed between the scientist as a person and the object of his or her study—is one of the elements that through which it has gained legitimacy. We explain and justify the authority we grant to science to define reality for us through its supposed value-free context of knowledge production.¹⁵⁵ If we were to assume, as Kuhn (1970) has, that the community of scientists functions within an internal ethos and value-system, we might have less faith in the products of that community. An assumption of neutrality, of impersonality, is one of the factors that grants science its extraordinary power. It has also been deemed unnecessary to integrate scientific knowledge into a “moral or metaphysical context” or to waste “research time and energy seeking for wisdom or depth,” and this permits greater degrees of specialization and the creation of narrow fields of expertise.¹⁵⁶

One factor that differentiates science from non-science is its apparent neutrality and lack of personal intuition; “the product of scientific thought has been purged of its personal characteristics” to the point that it projects an “image of self-correcting infallibility which

¹⁵¹ Ivins, W. M., Jr. (1946) *Art and geometry: A study in space intuitions*. New York: Dover, p. 41, emphasis in original.

¹⁵² Keller (1997), p. 183.

¹⁵³ Ibid., p. 184.

¹⁵⁴ Ibid.

¹⁵⁵ See Berger, P. L. and T. Luckmann (1989) *The social construction of reality: A treatise in the sociology of knowledge*. New York: Anchor Books, pp. 92-128, for a fuller discussion of legitimation.

¹⁵⁶ Roszak (1972), p. 171.

disguises its origin as essentially a craft activity as much based on hunches, intuitive knack, personal judgment as any craft.”¹⁵⁷ The power of science has been great enough to escape its less rational, more intuitive roots, and to build an image of ultimate authority and respectability.

The Ideal Situation and Linearity

Galileo’s method of the thought experiment, or idealized situation, has left a legacy of simplification or “purification” that has been adopted in our thinking about all kinds of problems. He was willing to “substitute an idealized situation for the clumsy, muddled context provided by ordinary experience.”¹⁵⁸ Although this kind of simplification has proven essential to unlocking all kinds of scientific puzzles, and has contributed significantly to a greater understanding of how the world works, it carries with it, especially as relates to philosophy and social science, a heavy price. The activity associated with simplification is the manipulation of the experimental situation—idealizing it—until it reaches a state that “may be physically unattainable but that conforms to the conceptual scheme adopted” for the experiment.¹⁵⁹ Galileo’s elimination of such factors as friction or air resistance allowed him to develop his understanding of gravity and acceleration, but this kind of thinking also led to Descartes’s “purification” of rational thought by eliminating the influence of sensory experience and cultural training.¹⁶⁰ It all too often happens that we mistake the ideal for the actual, and in eliminating the messy details from the framing of problems to be solved, we find our solutions ultimately inadequate and/or fraught with unintended consequences.

Newtonian science assumes that causes lead directly to observed effects—that the investigation of an observed phenomenon will follow a linear path back in time, regardless of the number of intermediary stages, to a readily identified cause or set of causes. This assumption is connected with the notion of an initial creation, at the beginning of time, of a machine-world that has been running according to plan ever since. It assumes a “complete independence of initial conditions from the laws of motion,” a creative instant outside the world as we experience it.¹⁶¹

Linear causal thinking limits problem solving ability by excluding many elements in a situation from consideration or holding certain variables constant—creating an ideal situation. Linear thinking simplifies an inherently complex world, separating interrelated, connected elements for the purpose of making the problem easier to conceptualize

¹⁵⁷ Ibid., p. 154; p. 155.

¹⁵⁸ Boisvert (1998), p. 7.

¹⁵⁹ Prigogine and Stengers (1984), p. 41.

¹⁶⁰ Ibid., p. 8.

¹⁶¹ Prigogine and Stengers (1984), p. 61.

mathematically and “solve.”¹⁶² Solving problems through approximation, through removing irregularity and creating ideal forms, gets enough of the job done to explain early science’s power and success. During the process of what Kuhn (1970) describes as “normal science,” approximations get better and better, closer to the real situations they claim to represent.¹⁶³ However, approximation must be recognized as approximation, and not confused with what is real, and errors resulting from this confusion can be both costly and devastating.

Scientific Method and Generalization

The systematization of the practice of science owes much to the influence of Sir Francis Bacon. He saw nature not as a “candid and helpful companion” in the quest for knowledge, but as “an elusive keeper of secrets.”¹⁶⁴ Bacon was certain that science could develop techniques that would mediate between mind and matter and wrest those secrets from nature. It is this “arsenal of techniques, methods [and] procedures—preferably tied up with a deal of jargon and much numerology” that constitutes the position of superiority enjoyed by the science disciplines in the academic world today.¹⁶⁵

The Newtonian method involves observation and experimentation followed by theory-building and mathematical modeling—creating ever more expansive and inclusive representations of the real. This process builds on the tendency to generalize from the particular to the universal that began in the declining days of the feudal system. As Newton’s laws were tested and verified as applicable in wider domains of the world, it came to be accepted that they enjoyed “universal validity,”¹⁶⁶ that they could be seen as the foundation for all knowledge. In many cases, such generalization has led to useful applications and broader understandings. However, generalization, even when based on a large grouping of trials in well-constructed experiments, can yield false results that misdirect and cause harm.

Dualism and the “Asomatic Attitude”

When Rene Descartes uttered the “cogito,” he was not merely removing extraneous complexity from rational thought, he was denying the important of somatic experience as

¹⁶² Einstein and Infeld (1938) argue that the purpose of science from the Greeks to the present has been to approach an apparently complex world and reduce its complexity to “some simple fundamental ideas and relations” (p. 52).

¹⁶³ Kuhn, T. S. (1970) *The structure of scientific revolutions*. 2nd ed. Chicago, IL: The University of Chicago Press, pp.35-42.

¹⁶⁴ Roszak (1972), p. 161.

¹⁶⁵ Ibid.

¹⁶⁶ Bohm, D.(1993) *Causality and chance in modern physics*. 5th ed. Philadelphia, PA: University of Pennsylvania Press, p. 36.

contributing any worthwhile information to the thought process.¹⁶⁷ Descartes believed that mind existed outside the body—a “clumsy, inconvenient, and troublesome appendage.”¹⁶⁸ The evidence of the senses, the emotional and intuitive ways of knowing, all had to give way to the superiority of the disembodied mind.

This kind of dualism has served to trivialize the reasonable claims of knowing through experience and manipulation—of living. It has also imposed a model of exclusiveness—of “either/or” rather than “both/and” thinking—to situations that would yield richer and fuller results if all kinds of evidence could be applied. Mind/body dualism leads directly to notions of the right to control held by dominant elites and to the notion that human science should control and use nature for its own ends.

Domination and Control

Newtonian science is active science in the sense of “systematically acting on the world, for predicting and modifying the course of natural processes, for conceiving devices that can harness and exploit the forces and material resources of nature.”¹⁶⁹ This kind of science has produced many material benefits for humankind and it has created a new kind of knowledge and the prevailing understanding of what is real. All traces of the divine have been stripped from nature, and, as well, all traces of the human. When nature is objectified and then questioned in this way, she “is, of course, simplified and occasionally mutilated.”¹⁷⁰ Bacon’s view of nature and the purposes of science and the Newtonian model have taught us to “regard the world as nothing but what the hard facts and quantitative abstractions make it out to be.”¹⁷¹

We consequently define scientific knowledge as “that which yields a steady increase of human control over the environment...[growing] incrementally and systematically...[resulting from] deliberate exercise of the will to know...[in] an on-going collective project in which the present can contribute to the future.”¹⁷² The systematic thinking associated with science is “knowledge built on evidence, and captured in clear transmissible form, [and] makes for power over the environment.”¹⁷³ Knowledge that does not provide such a sense of control is trivialized as irrational, and doesn’t carry as much weight in any discourse as scientific knowledge does.

The Machine Metaphor

¹⁶⁷ Boisvert (1998), pp. 9-10.

¹⁶⁸ Ibid., p. 10.

¹⁶⁹ Prigogine and Stengers (1984), p. 37.

¹⁷⁰ Ibid., p. 43.

¹⁷¹ Roszak (1972), p. 134, emphasis in original.

¹⁷² Ibid., p. 150.

¹⁷³ Hoover, K. and T. Donovan (1995) *The elements of social scientific thinking*. 6th ed. New York: St. Martin’s Press, p. 7.

One of the most powerful shapers of western thought coming out of the science of the seventeenth century is the machine metaphor. The image of the clockwork universe, ticking along on its predetermined course, lends credibility to many social concepts from the assembly line to the organizational chart to Social Darwinism. Once Newton had developed his laws of motion, and they were demonstrated as true with reference to the orderly progression of the heavens, the mechanical nature of the universe—and, by inference, its subsystems, was accepted as an established fact.

The machine image, as it came to dominate our thinking, emphasizes the alien quality of otherness ascribed to nature—it emphasizes the isolation of each human being from other human beings and from nature, and came to support the atomistic notion of individualism so common in the West today. The progression, as Roszak notes, is linear: “For Newton, the celestial spheres comprise a machine; for Descartes, animals become machines; for Hobbes, society is a machine; for La Mettrie, the human body is a machine; eventually for Pavlov and Watson, human behavior is machine-like.”¹⁷⁴

The harm that comes from this metaphor goes deeper than this alienation, however. The real damage is done by the removal from the world of a sense of purpose or intentionality. Machines exist to serve functions imposed from outside of themselves—they do not operate in service of their own, self-generated purposes. If nature is a machine, it is “a tool in need of a job,” waiting for God to assign one, or lacking God’s direct intervention, his steward, man.¹⁷⁵ The adoption of the machine image completes the destruction of Aristotelian science—the science that asked “why?” implying an understanding of nature infused with purpose.

Determinism

If we accept the Newtonian machine metaphor and believe there is an objective reality independent of our observation, then we are committed, to some degree, to a determinate universe—to the idea that the future is fixed according to a plan, and that knowledge about the past and present allow us to access that future. Newton posited that if we are given the initial conditions of a system, we can, by applying the laws of motion, predict the future states of that system precisely and accurately. The ultimate plan, the laws of nature, are available to human reason, if we can specify the degree of precision required in our description of initial conditions.¹⁷⁶

¹⁷⁴ Roszak (1972), pp. 180-181; cf. Pearcey and Thaxton (1994), pp. 49-51.

¹⁷⁵ Ibid., p. 180.

¹⁷⁶ Popper, K. R. (1982) *The open universe: An argument for indeterminism*. Totowa, NJ: Rowman and Littlefield, p. 12.

Popper (1982) gives as his definition of the “weak” version of scientific determinism: “the doctrine that the state of any closed physical system at any given future instant of time can be predicted, even from within the system, with any specified degree of precision, by deducing the prediction from [universal] theories, in conjunction with initial conditions whose required degree of precision can always be calculated...if the prediction task is given.”¹⁷⁷ For scientific determinism to stand, the lawfulness of the universe must be assumed, and the success of empirical science is used as verification that the laws directing the universe are available to human reason.¹⁷⁸

Newton’s mechanics is the physics of dynamic systems—of bodies in motion. When the laws of motion are integrated with acceleration and deceleration, we reduce phenomena to their trajectories whose basic characteristics are “lawfulness, determinism, and reversibility.”¹⁷⁹ The processes of the world can be seen as a motion picture—although we have yet to experience the future, it is already filmed and we can anticipate its details from the film already shown us. The rules for deduction are the mathematical laws we have developed. The initial conditions are contained in the first few frames. We can run the film both forward and backward without violating the rules or changing the ending. The understanding we have of the future in our film and in our world depends on how well we can apply the rules and how clear the details of the beginning are to us.

Positivism and the Idea of Progress

Newton’s empiricism yielded a positive view of science and scientific knowledge because Newton hoped to distance himself from the metaphysical implications of his work. Unfortunately, while denying the metaphysical underpinnings of his theories, Newton unintentionally and unconsciously passed along to his followers, in science and outside of it, a metaphysical position. It can be said of Newton, along with others who outwardly deny metaphysics, that they:

hold metaphysical notions of three types...[they] share the ideas of [their] age on ultimate questions...[they] will be under a strong and constant temptation to make a metaphysics out of [their] method, that is, to suppose the universe ultimately of such a sort that [their] method must be appropriate and successful,” and finally, those metaphysical notions that arise from “their positivistic investigations...[are] apt to appear pitiful, inadequate, or even fantastic.”¹⁸⁰

The central position of positivism, according to Burt, is that “it is possible to acquire truths about things without presupposing any theory of their ultimate nature; or, more

¹⁷⁷ Ibid., p. 36.

¹⁷⁸ Ibid., p. 33.

¹⁷⁹ Prigogine and Stengers (1984), p. 60.

¹⁸⁰ Burt (1989), p. 229

simply, it is possible to have a correct knowledge of the part without knowing the nature of the whole.”¹⁸¹ The apparent successes of empirical science have tended to validate this as truth and have encouraged the development of positivist thinking in other fields, especially in sociology.

Comte, in the nineteenth century, expresses the essence of positivism as the discovery of natural laws that logically replace earlier, cruder sources of explanation, such as superstition.

In the final, positive state, the mind has given over the vain search after Absolute notions, the origin and description of the universe, and the causes of phenomena, and applies itself to the study of their laws—that is their invariable relations of succession and resemblance. Reasoning and observation, duly combined, are the means of this knowledge.¹⁸²

Sociology was seen as the positive science of order and progress, the natural laws of society, and included two approaches—social statics and social dynamics, precursors of functionalist and systems theories of society.¹⁸³ Social statics encompasses the Comtean study of the individual, family, and society, one that supports the notion that concepts of the public good need to be grounded in those of private interests and advantage.¹⁸⁴ Social dynamics is the study of the “natural progress of human society.”¹⁸⁵ This natural progress can be aided, Comte thought, by the rise of positive science and the decline of metaphysical kinds of knowledge. Comte’s was a vision of society unified, where “as the laws of social life are discovered, the ability to predict and control will be perfected...[and, that such a] perfected social system driven by the engine of positive science will end the historical human antagonisms born of obsolete knowledge.”¹⁸⁶ Bacon’s vision of science as a knowledge-building project, one that would be capable of “closing with nature, of asserting power over the world” gave us utility as the standard for truth.¹⁸⁷ The positivism of Newtonian science and the sense that scientific knowledge is the product of progress and development and not chance thus lend support to Comte’s utopian vision of the progress inherent in the natural laws of society that await our discovery.

Seventeenth century physics introduced a worldview that would dominate western thought in the centuries that followed its discoveries and theories. Its basic assumptions

¹⁸¹Ibid., pp. 227-228.

¹⁸²Comte, A. (1896) *The positive philosophy of Auguste Comte*. 3 vols., Trans. H. Martineau. London: George Bell and Sons, Vol. 1, p. 2.

¹⁸³Perdue, W. D. (1986) *Sociological theory: Explanation, paradigm, and ideology*. Palo Alto, CA: Mayfield Publishing Company, pp. 52-53.

¹⁸⁴Ibid., p. 53.

¹⁸⁵Ibid.

¹⁸⁶Ibid.

¹⁸⁷Roszak (1972), p. 149.

of the existence of natural law, of systematic generalization, of rationality, of objectivity, of mechanism and determination, of linearity, and of positivism and progress were assumed into all facets of western life. It should be possible to find evidence of the dominance of this worldview in the case of American history and administrative reform, and to demonstrate why no alternative reform strategies were envisioned or attempted.

The barrenness of the worldview legitimated by Newton's physics was denounced by the radical romantics, poets of the late eighteenth and early nineteenth centuries, and the toxic effect on all aspects of human social life of the modern project has been the focus of modern critical theorists and postmodernists since that time. The poets advocate a return to the magical, transcendental understanding of nature and knowledge. The critical theorists—Weber, Marx, and others—recognize the instrumental nature of the prevalent practice of reason, but offer no useful remedies. In contrast, Habermas proposes a restoring of balances between lifeworld and system through communicative action. Postmodern critics analyze and expose the oppressing characteristics of modernity through deconstruction of texts, but their concentration on decentering the modern project from its grand narratives does not take us further toward a humanizing resolution. The influence of the premises of Newtonian science continues, even in the varied critiques mounted against it. As the following chapter will illustrate, this influence was profoundly felt throughout the history of the United States, and, particularly, in the progressive reforms of the early twentieth century.

Chapter 4

Visions of American Democracy and the Modern Worldview

Historical Cases Prior to 1900

Having abstracted a series of defining characteristics from the tenets of modern science through the interpretive strategy of intensive explication, the question before us now becomes: How closely can these characteristics be identified both with general social organization in the United States and with the basic model of administrative structure and reform used to build American government in this century? To what degree does the legitimating authority of science generate and perpetuate the patterns of thought and social organization that give rise to such institutions and how do those institutions, in turn, impact our patterns of thought?

To answer these questions through comparative generalization, it becomes necessary to look for the identified characteristics of the modern worldview in several case-specific historical settings. These settings are: the foundations of American liberalism in the Federalist/Anti-Federalist debate; the ordinary life of the American people in the nineteenth century; and the rise and fall of the Populist Movement. The chapter that follows will analyze the Progressives as reformers, the New Deal and the rise of technocracy in the post-WWII era, and the present-day experience of ordinary Americans and their understanding of the public space.

Underpinning the notion that ontological assumptions define and constrain social structure is the idea that actors and the structures within which they act co-produce each other. Giddens's metatheory of structuration encompasses such an understanding of action, contending that "structures are produced by human actions and yet are simultaneously the medium of that action."¹ This duality lies at the heart of the argument of this dissertation—that social actors are both creators and creations of the prevalent ideas and social structures of their time, and that some ideas, particularly those abstracted from such institutions as science, carry more weight than others in the process.

The ideas of modern science, as filtered through Enlightenment philosophy, have had a significant and lasting influence on American social organization. These were identified as: foundational unity; privileged perspective and objectivity; idealized situations and linear causality; the scientific method and generalization; dualism and the "asomatic attitude;" domination and control; the machine metaphor; determinism; and, positivism and progress. Evidence of the influence of these themes on the developing American culture and, as a result, on the institutional infrastructure of American government will be presented below.

¹ Morrow (1994), p. 159.

The Modern Worldview in the History of American Social and Governmental Development

The administrative reform movement of the early twentieth century did not develop in isolation. It grew, in part, out of the failure of the American interpretation of Lockean individualism to continue to provide a roughly equal economic gain for a wide range of citizens after the Civil War. It was an almost necessary outcome of the tensions inherent in the precarious balance between Jeffersonian republicanism and Hamiltonian laissez-faire liberalism that were not resolved, but only subdued through force, in the Civil War. These two conflicting streams of political philosophy had been pulled together in an uneasy peace in the Constitution through the addition of the Bill of Rights. It is unfortunate, even tragic, that the crucial flaw in the American social fabric—slavery—was not addressed and resolved in the founding period or through the military victory of the Union in the Civil War, and so remains at the bottom of social tension in today's America. The union forged through ratification of the Constitution and the peace and national identity forged through Lee's surrender at Appomattox were still fragile in the middle of the nineteenth century. But, for as long as the western frontier remained open, communities remained small and politically active, and most citizens felt they had the liberty and the opportunity to live a good life, this peace held.

Early expressions of the American impulse to reform lay beneath a variety of dissimilar political and social agendas that could not be easily merged. Quakers, Transcendentalists, Abolitionists—representative of the numbers of groups and associations involved in reform projects prior to the Civil War—attempted to bring about such ends as freeing the slaves, improving public health and morals, and bringing about perpetual peace among nations.² New England intellectuals proposed utopian community experiments, but their intellectual and genteel brand of reform did not lend itself well to addressing political issues.³ Uneasiness with the growing and suspect relationship between the Grant Administration and the capitalist barons of the Gilded Age sparked largely ineffectual attempts at political reform in the years immediately following the Civil War. Grant's personal honesty was never impugned, but his political naiveté left his national government vulnerable to charges of graft and corruption,⁴ while scandals arising from business kickbacks to national political figures—as in the Credit Mobilier case—demonstrated that the time for reform was at hand.⁵ Graft and corrupt political practices

² Lacour-Gayet, R. (1970) *Everyday life in the United States before the Civil War, 1830-1860*. Trans. M. Ilford. New York: Frederick Ungar Publishing Co., pp. 264-267.

³ *Ibid.*, p. 267.

⁴ Malone, D. and B. Raush (1960) *The new nation: 1865-1917*. New York: Appleton-Century-Crofts, p. 64.

⁵ *Ibid.*, pp. 32-34.

at the state and local level during this period began the processes that led to the reform of civil service that the shocking Garfield assassination propelled into reality in the Pendleton Act in 1883.

The agrarian reform movements of the period 1880 to 1900—the Grangers, the Farmers’ Alliances, and the Populist Movement—built on the dissatisfaction many felt with government’s cozy relationship with big business and finance, but spoke in stronger, more strident tones than their predecessors in demanding a return to Jeffersonian principles. The Populists achieved the highest level of political success of these groups in presenting the case of the debtor small farmer’s need for easy money and relief from the railroads’ stranglehold on transporting their crops. Still, America was becoming more and more an urban world, and the Populists could never overcome their self-image of struggling property-owners long enough to find common ground with urban labor unions.

The Progressive Movement itself was clothed in an evangelical vision of a particular American destiny, the expansion of economic possibility through science and technology, and a compelling need to create and maintain a sense of order through professional administration. Progressives built on some of the political achievements and ideas of the Populists, but should not be mistaken for their evolutionary heirs. Progressive reformers were unrepentantly middle class and professional city dwellers. They learned political reform in their cities and, ultimately transplanted it to the national level. They were less interested in democratization, and more inclined to trust governing to the experts.

These reform movements shared some themes, and all caused some degree of alarm in the conservative, capitalist communities of their times. They do not represent an evolution of thought culminating in lasting administrative reforms, but rather can be seen as differing, successive attempts to recast government’s role and structure as a means of achieving some particular order in a disorderly world. None of these reform movements succeeded in healing the wound caused by slavery, but that was not one of the goals of any of them. Neither did they resolve American indecision about the nature of our republic—the tension between republicanism and liberalism is still with us today.

The New Deal brought a change in the goals of government, expanding the presence of government and extending the reach of government into what had before been strictly private actions of persons and organizations. Federal agencies related to individual human problems—such as, poverty, health and unemployment—proliferated and direct government involvement in shaping and strengthening the economy became the rule rather than a rare exception. America’s entry into World War II built on and enlarged the cadre of experts in government, reinforcing the concept of expertise and technology as keys to efficient governing. American cities lost their industrial base, saw their central business districts abandoned, and their populations moving to the suburbs. A new vision of the good life emerged for the American middle class. This vision was ultimately

distorted and lost through unsupported military operations, economic downturns, political cynicism and suspicion, and widening gaps in financial well-being and opportunity.

The American Dream did not, even in the beginning, extend to the hopes and aspirations of the descendants of slaves, however. The battle for black enfranchisement and equal opportunity, begun with reconstruction following the Civil War, and then abruptly abandoned within ten years, was reinvigorated in the Civil Rights movement of the 1960s. The national government took this cause upon itself, and, along with a renewed attack on poverty, began a decade of further national government expansion in the War on Poverty programs of the Lyndon Johnson Administration. Strategies for relief of poverty, the renewal of central cities, improvement of opportunities in education and employment for African-Americans and other historically disadvantaged groups occupied the national agenda until the 1980s.

The second Nixon Administration saw the exposure of the Watergate scandal, and marks the beginning, in the minds of many, of a growing sense of distrust and even antagonism with regard to government. Not only have the American people been regaled with scandal after scandal in the behavior of presidents and their high-level appointees, but they have, to a large degree, become convinced the government has grown too large and cumbersome, too unwieldy and unresponsive. This cycle of disappointment, confusion, and temporary fixes to poorly-defined problems has led to today's reinvention, rightsizing, and reengineering reform models—further rationalizing structure without touching on goals or process in a meaningful way.

Citizens today appear to be less involved in associational life.⁶ They are increasingly connected electronically, but routinely disassociated physically. This trend extends even to the workplace, where more and more often, workers are in flexible work hours and even tele-commute, completing their work electronically from home with only occasional forays into the workplace. Government, too, has come to be seen as distant, complicated, and disinterested. All of these directions reflect the last few decades' further rationalization and compartmentalization of American life. They also represent, in part, the culmination of the effects of the modern worldview on the individual lives of Americans. The evolution of this reliance on "modern" views can be followed through the life of the nation. Samples of the influence of the modern worldview are presented through case histories that reflect different slices of American life beginning with the colonial experience of Americans and the founding of the American state.

⁶ See, for example, Putnam, R. D. (1995) Bowling alone: America's declining social capital. *Journal of Democracy*, January, 1995, pp. 65-78.

Case 1. The Foundations of American Liberalism

All causes which contribute to the maintenance of the democratic republic in the United States are reducible to three heads:

- I The peculiar and accidental situation in which Providence has placed the Americans
 - II The laws
 - III The manners and customs of the people
- Alexis de Tocqueville⁷

Alexis de Tocqueville noted the factors above as serving to preserve or augment the democratic character of the American people and the American founding period. Hyneman (1994) describes this period as a “departure [that] entailed defining a polity, redesigning governmental institutions, and learning to make them work”—leaving behind colonial dependency and the building of a new nation, not upon the crumbling foundations of European feudal institutions, but out of the abundant resources of a largely uncharted continent and the physical and intellectual energy and sheer determination of its people.⁸ The Revolution freed the new nation from the bonds of tradition to the extent that it could choose which elements it could retain, which it could abandon, and which it could adapt to suit its purposes. The American philosophical and political experience was built on the philosophy of John Locke, and was conditioned by experimentation and pragmatism.

While it can be said that European democratic revolutions were a product of the nation-building of past monarchies—that national identity made the revolution possible, perhaps, inevitable—in the case of the United States, “we struck for independence and were thereby stirred into nationality; our nation was the child, not the father, of our revolution.”⁹ And, likewise, while revolution in Europe can be considered a result of a difficult transition to the modern era, the American Revolution preceded and facilitated the founding of a truly modern state. As Dargo (1974) points out,

What is extraordinary about American colonial history is the degree to which a new society, beset by enormous physical problems and located on the edge of a hostile wilderness, succeeded in generating institutions that, in retrospect, represented significant breakthroughs and advances in the

⁷ De Tocqueville, A. (1990) *Democracy in America*. P. Bradley Ed., Vols. 1 & 2. New York: Vintage Books, V. 2, p. 288.

⁸ Hyneman, C. S. (1994) *The American founding experience: Political community and republican government*. C. E. Gilbert, ed. Urbana, IL: University of Illinois Press, p. 1.

⁹ Morgan, E. S. (1977) *The birth of the republic: 1763-89*. rev., series: Chicago History of American Civilization, ed. Daniel J. Boorstin. Chicago, IL: The University of Chicago Press, p. 100.

evolution of Western constitutionalism. In that sense, America was “born modern”.¹⁰

Despite their shared hazards and consummate practicality, however, it is not safe to assume that the colonies of British North America shared a common culture or had even developed distinct regional identities, other than that of New England, until the eighteenth century.¹¹ Until they recognized the need to band together to overcome imperial interference in their political and economic lives, the thirteen colonies tended to see themselves as separate entities. The loose cultural ties that did form were the result of their shared experiences of physical hardships, their common patterns of association and attitudes toward life abstracted from a model of a seventeenth-century English village, broad agreement across the mix of religious affiliations about church organization and practice (if not doctrine), and a general lack of class distinctions.¹²

The colonies were only loosely administered from Britain, and each developed considerable political experience and independence of mind. It was not until the passage in Parliament of various revenue acts after 1750 that colonists began to see themselves as something set apart from other British subjects. British attempts to recoup the expenses of the French and Indian War challenged the American conceptualization of what English liberty entailed and of what representation was, and these two were connected through John Locke’s philosophy. According to Locke, liberty and property are fundamentally related; “men’s property must not be taken away without their consent, given either in person, or by their representatives...[property] was the source of life and liberty...Hence, liberty rested on property, and whatever threatened the security of property threatened liberty.”¹³

In the British view and in practice in Parliament, representation was virtual. Representation in the colonial assemblies, however, was actual; representatives were instructed by their constituents or were required to be “actual residents in the communities they represented.”¹⁴ The Crown argued that Britons were well served by Parliament although only about 10 percent of the residents were able to vote—members of the Commons were assumed to faithfully represent all of the Empire. The colonists

¹⁰ Dargo, G. (1974) *Roots of the republic: A new perspective on early American constitutionalism*, series: New Perspectives in American History, ed. James P. Shenton. New York: Praeger Publishers, p. 21; cf. Beard, C. F. and M. R. Beard (1962) *The American spirit: A study of the idea of civilization in the United States*. New York: Collier Books, pp. 149-150.

¹¹ Vaughan, A. T. (1983) Seventeenth-century origins of American culture. (pp. 16-42) in S. Coben and L. Ratner, eds. *The development of an American culture*, 2nd ed. New York: St. Martin’s Press, p. 24.

¹² *Ibid.*, pp. 29-39.

¹³ Morgan (1977), p. 16.

¹⁴ Bailyn, B. (1968) *The origins of American politics*. The Charles K. Colver Lectures at Brown University. New York: Vintage Books, p. 85.

countered that it was unlikely that members of the Commons knew, much less shared or represented, their interests. This debate into the right of Parliament to lay taxes on the colonists, and thereby, to deprive them of property without their personal or appropriately-delegated consent, continued through questions of internal versus external taxes to a logical conclusion: questioning the right of Parliament to legislate for the colonies in any sense, absent actual representation.

Passage of the Stamp Act and the distribution of the stamps to the colonies invoked protest and talk of boycott. Where before the interests of the several colonies were divided, in this battle they were united. As Smith (1976) notes, “one of the striking facts about the so-called Stamp Act riots is that resistance to the Stamp Act was spontaneous in virtually all of the colonies. Moreover, the resistance included quite different social groups; it was evident in all segments of colonial society and reached from longshoremen and artisans to rich merchants and, in the South, great plantation owners.”¹⁵ All of the colonial assemblies drafted resolutions of protest with one clear message: “Parliament, they said, had no authority to tax them at all. That authority was reserved exclusively to assemblies of their own representatives.”¹⁶

The punitive acts that followed the repeal of the Stamp Act were meant to educate colonists about the power of Parliament, but came to serve as a school of another type. Patriot leaders were, of necessity, required to “sharpen and refine their own notions about the nature of constitutional government. [They] went to school with the greatest ancient and modern philosophers who considered the nature of the universe and the proper forms of government...mak[ing] themselves the most learned politicians in history.”¹⁷

The British, fearing a colonial move toward independence, made political decisions that, while intended to forestall that eventuality, made independence inevitable. By singling out Massachusetts to teach the rest of the colonies the futility of resisting Parliament, the British united the colonies—bringing into existence the Committees of Correspondence and the Continental Congress. It was only a matter of time before the colonies mobilized their irregular army and militias under Washington’s leadership. When all other options were exhausted, Thomas Jefferson composed the language of the Declaration of Independence, “We hold these truths to be self-evident...,” that reflected most clearly American Lockean thinking, and that would define one element of the ongoing American liberal discourse.¹⁸ The war for independence and the new American state had begun.

¹⁵ Smith, P. (1976) *A new age now begins: A people's history of the American Revolution*.(Vol. 1), New York: Penguin Books, p. 211; cf. Countryman, E. (1996) *Americans: A collision of histories*. New York: Hill and Wang, p. 44.

¹⁶ Morgan (1977), p. 23.

¹⁷ Smith, P. (1976), p. 253.

¹⁸ *The Declaration of Independence*, in Morgan (1977), pp. 159-162.

By the end of 1776, ten of the thirteen colonies had established state governments, with the balance completed by 1780. “The most striking thing about these state governments is that they all had their wings clipped by written constitutions in which their powers were strictly limited and defined,” and in these documents, bills of rights were included.¹⁹ As Jefferson noted, however, these constitutions were not drafted as fundamental law, that is, that they were creations of the assemblies—no special conventions of the people had devised or approved them.²⁰

The Continental Congress seemed adequate as a provisional government, at least for the course of the war. However, the debates on the Dickenson report, a proposal that the existing arrangement—with the functions of central government assigned to a congress of delegates appointed by the states—be continued, demonstrated the difference between participating in an assembly in a colony and making decisions about the federal relationships among states and between states and a central government. Old antagonisms and fears resurfaced over issues of representation and voting, over debt and currency, and over the lands of the western frontier. It took five full years to hammer out the details, land claims and the relative size of states being the critical issues.²¹ The Articles of Confederation, creating a legislative government whose members were chosen to represent the interests of the states, were not ratified until early 1781.

Under the Articles, the Congress was granted limited powers in areas where the individual states could not act effectively. Among these were the power to wage war and treat for peace, to negotiate treaties and alliances and otherwise deal with foreign governments, to act as the fiscal agent for the United States in settling war debts and gaining credit, and to act as the court of last resort in settling interstate differences, particularly in reference to the settlement of western lands. Noticeable by its absence is the power to tax. Amendment to the Articles could be achieved by a passing majority vote in the Congress, followed by unanimous approval by the state legislatures.²²

¹⁹ Morgan (1977), p. 89.

²⁰ Mayer, D. N. (1994) *The constitutional thought of Thomas Jefferson*. Series, Constitutionalism and Democracy, eds. K. Hall and D. O’Brien. Charlottesville, VA: University Press of Virginia, p. 84. Although Jefferson would not be a participant in the Philadelphia Convention of 1787—he was serving as ambassador to France at the time—and while he had reservations about the lack of a bill of rights, Jefferson was “unreservedly enthusiastic about the process by which the new national government was created,” p. 98, emphasis added.

²¹ The final issue, over which Maryland refused to budge, related to the existing states volunteering to limit their territory. It is interesting to note that when Virginia agreed to cede its lands to the north and west of the Ohio River to the nation, there were strings attached. Virginia stipulated that the territory given to the nation be broken up into state-size sections which would eventually be admitted to the union on an equal basis with the original thirteen states—and whose residents would not be second-class citizens. This concern for the future led to a United States that would “remain a union of equals without subordinate colonies of the British type.” Morgan (1977), p. 110.

²² *The Articles of Confederation*, in Morgan (1977), pp. 163-170, emphasis added.

The positive achievements under Articles are often overshadowed in our thinking by its deficiencies with regard to the relative power of the national and state governments. However, during the eight years of governing under the Articles, the nation successfully conducted a war and concluded an advantageous peace; it dealt reasonably well with a recession; it managed the settlement of western lands, balancing self-interest—land speculation and the slavery question—with national interest in the Northwest Ordinance; and it dealt rather fairly with British loyalists and evoked some social healing—not an easy task considering the strong sentiment of the Patriots that was aggravated by the Tories' generally higher than average wealth and status.²³

Lefebvre (1962) sums up the deficiencies of the Articles succinctly: “federal power did not have authority to end inflation or stabilize the value of currency, to consolidate the debt and pay off its interest, to establish a tariff, or to maintain an armed force capable of protecting the new republic and the propertied classes.”²⁴ Congress could requisition funds, but had to depend on the states to levy and collect taxes to supply them. Governing under the Articles was to prove that “creating a nation was, if anything, a more arduous task than winning a revolution.”²⁵

The unity among the states forced by the war was a fragile alliance, and became even more so as fundamental political differences among revolutionary republicans began to dominate the civic discourse. As Lienesch (1988) points out, once the pressure of war was past, two contradictory points of view about liberty and authority surfaced. The first, simply put, was a radical cyclical theory—liberty could only be preserved through periodic protest and, if that failed, periodic revolutionary reform. In this view, there could never be too much liberty and governmental impingement upon individual liberty, uncontrolled by close and, where possible, direct representation, would certainly lead to tyranny.²⁶

The second strain of republicanism Lienesch identifies was a more conservative concern that completely uncontrolled liberty would lead inevitably to license and disorder, and that this would be an open invitation to tyranny. “Fundamentally, they believed that the abuse of power [possible in a strong government], although cause for concern, could never pose the threat to liberty that arose from an excess of license.”²⁷ These republicans,

²³ Morgan (1977), pp. 112-122.; and Smith, P. (1976) *A new age now begins: A people's history of the American Revolution*. (Vols. 1 and 2), New York: Penguin Books, pp. 1-22.

²⁴ Lefebvre, G. (1962) *The French Revolution from its origins to 1793*, trans. E. M. Evanson. New York, Columbia University Press, p. 86.

²⁵ Smith, P. (1980) *The shaping of America: A people's history of the young republic*.(Vol. 3), New York: Penguin Books, p. 1.

²⁶ Lienesch, M. (1988) *New order of the ages: Time, the Constitution, and the making of modern American political thought*. Princeton, NJ: Princeton University Press, pp. 64-68.

²⁷ *Ibid.*, p. 69.

most prominently Madison and Hamilton, were proponents of carefully constructed, strong, mixed government, with separated legislative, executive, and judicial functions, holding each other's power in check. In their view, an excess of individual liberty had fostered in the state legislatures an unstable and contradictory condition of interest, or faction-driven politics, and they came to favor the notions of a stronger national government with a functioning executive. "These conservative republicans saw democracy as an inherently unstable system."²⁸ They feared for the nation if it were to become too democratic. Their fears seemed justified by events such as Shay's Rebellion.²⁹

These two points of view can also be characterized in terms of their differing emphasis on the direction of economic development for the new nation. The more 'radical' republicans held a vision of an agrarian society for America. Their civic ideal was the independent yeoman farmer. Reflecting the influence of Montesquieu, they envisioned communities and republics as small in size with a homogeneous society, governed, as nearly as possible, by the people. "The essence of [this] agrarian platform was its localism."³⁰

'Conservatives,' on the other hand, envisioned an economy that was a mix of agricultural and commercial activities. They favored government which could protect markets and keep currency stabilized. They believed that a large and growing republic would act to prohibit the relative power of faction. Their firm belief in the fundamental connection between property and liberty led them to see that "the real source of republican freedom was found in the independence and equality that arose from the widespread ownership of property."³¹ If they were at all uneasy about the inherent inequality that a capitalist, market-driven, and manufacturing economy would foster, they were able to discount it through defining equality in terms of opportunity rather than outcome or condition.

It was the conservatives who pushed for further constitutional reform, although even the more radical Jefferson considered the Articles to have an essential defect—"the want of power in the federal head."³² They used all of the political skill they had acquired in their years of dealing with the British and in administering the nation to bring about the federal Constitution through which America has been governed since 1789.

²⁸ Ibid., p. 71. Robert A. Dahl (1986) suggests that the desirability of a true representative democracy was problematic for the founders of the United States. "Consequently, the framers could not and did not agree to establish a representative democracy. They could and did agree to establish a representative republic with a framework of government that would, as they believed, rest on popular consent and yet ensure as best they knew how the preservation of certain basic rights to life, liberty, and property that they held to be morally inalienable." (*Democracy, liberty, and equality*. Oxford: Oxford University Press, pp. 131-132, emphasis added).

²⁹ Countryman (1996), pp. 75-76.

³⁰ Lienesch (1988), p. 105.

³¹ Ibid., p. 93.

³² Thomas Jefferson, cited in Mayer (1994), p. 99.

Kammen (1987) has described the “basic pattern of American constitutionalism as one of conflict within consensus.”³³ Considering the deep tension between the basic notions about liberty of the conservative republicans—later known as Federalists—and those of their radical colleagues—the Anti-Federalists, the amount of consensus amazes us. Within a few years of ratification, many ardent opponents of strong national government had come to agree that such was necessary, and possibly might even be good. The conflict masked by that consensus, however, could easily have torn the union apart any time in its first decade, and nearly did in the American Civil War.

The Convention, which met in closed sessions in Philadelphia in 1787, called for a complete change in the form of American national government, rather than merely discussing amendments to the Articles—their stated purpose. A new constitution was the goal of the conservatives, and their strategy was well planned in advance of the Convention. The Virginia delegation, ably led by Madison, arrived early with a model constitution in hand. “Clearly, Madison had learned one of the fundamental lessons of collective behavior: the person who sets the agenda and who develops a set of preliminary positions that provoke and structure subsequent discussion frequently carries the day.”³⁴ If nothing else, Madison’s Virginia Plan would be the basic framework onto which consensus-building compromises were grafted.

The document delimited and specified the powers of the national government, reserving to the states and, particularly, to the people, all powers not so specified. It established the three great branches of government—creating a government of separate institutions sharing power. The functions of each branch overlapped each other sufficiently to serve as a check against tyranny—the president could veto legislation and would appoint subordinate officers and federal judges; the bicameral legislature would express the will of the people in legislation, advise the executive on appointments and treaties, and could impeach the president; the Supreme Court would review legislation where a case was brought and its Chief Justice would preside at impeachment proceedings.

The government created by the Constitution is clearly a vehicle capable of nurturing and protecting a commercial nation and a capitalist economy. Both the document itself and various interpretations of it through the decades have supported the notion of individual rights and equality defined as opportunity that are connected with the commercial dream. The conservatives looked to internal commerce to bind the nation together and to foreign commerce to bring prosperity. “Commerce, indeed, many leading Americans believed, including even a pragmatic realist like Washington, could be expected not only to bring

³³ Kammen, M. (1987) *A machine that would go of itself: The Constitution in American culture*. New York: Alfred A. Knopf, p. 29, emphasis in original.

³⁴ Ludwikowski, R. R. and W. F Fox, Jr. (1993) *The beginning of the constitutional era*. Washington, D.C.: The Catholic University of America Press, p. 122.

wealth and unity to their new country but, in time, to transform the world and perhaps even human nature itself.”³⁵

When the drafted Constitution was released for ratification, the Federalists produced a series of essays in the newspapers of various states. The most famous of these, written by Madison, Hamilton, and Jay, were intended to encourage approval of the Constitution in New York where sentiment was seriously divided and the outcome questionable.³⁶ The Federalists employed every stratagem their collective experience recommended—theirs was an uphill battle, and they knew it. The Anti-Federalists, many of the most prominent of whom did not attend, or left the Convention before its conclusion, also had a strategy. They knew that popular sentiment ran strongly against the notion of powerful national government and favored state republics and more direct representation. Although they also wrote, passionately and compellingly, they placed their primary confidence in the electors of the states to vote against the Constitution.³⁷

As history records these things, one could say that the Federalists prevailed in the political contest. The Constitution was approved, but to overcome the concerns of many of the states, a bill of rights was drafted and became the first ten amendments to it. In an era of absolutism and violent revolution, the constituting of America has become standard of peaceful reform—causing Jefferson to remark, “we can surely boast of having set the world a beautiful example of a government reformed by reason alone, without bloodshed.”³⁸ An even more amazing example of the power of peaceful change occurred in 1800, when Jefferson was elected President.³⁹ This serene, solemn, and nonviolent ceremonial changing of presidential administrations is a truly unique American phenomenon.

Analysis

Despite their surface differences, the Federalist and Anti-Federalist framers shared a common grounding in John Locke’s view of liberty, property, and equality, and reflect “that confidence in human reason which stemmed from Newton’s scientific achievements from the century before.”⁴⁰ Their differences arise in the understanding each developed

³⁵ Greene, J. P. (1992) *Imperatives, behaviors and identities: Essays in early American cultural history*. Charlottesville, VA: University Press of Virginia, p. 313.

³⁶ Published collectively as *The Federalist Papers*.

³⁷ See, Storing, H. J., ed. (1985) *The Anti-Federalist: Writings by the Opponents of the Constitution*, an abridgment by Murray Dry from *The Complete Anti-Federalist*. Chicago: The University of Chicago Press, for some of these pertinent and moving arguments.

³⁸ Cited in Mayer (1994), p. 98.

³⁹ See, J. R. Sharpe (1993) *American politics in the early republic*. New Haven, CN: Yale University Press, for an excellent and detailed discussion of the politics of the first decades of the republic.

⁴⁰ Gabriel, R. H. (1974) Constitutional democracy: A nineteenth century faith. (pp. 3-16) in R. H. Walker, ed. *American values: Continuity and change*. Westport, CT: Greenwood Press, p. 3.

of the perfectibility of human nature, and continuation of this difference can be followed through the centuries in differing views of government structure and civil service, up to and including the Friedrich-Finer debate on administrative responsibility in the 1940s and the debate today on the role of government institutions in society.

The Federalists took a rather cold and grim position, influenced by Hobbes's description of man in the state of nature—that humans are incurably self-interested and strongly motivated by individual needs, wants, and desires. Government, therefore has to be so constructed as to automatically limit the negative effects of these qualities and to, at the same time, capitalize on them to drive the performance of public duties. The Anti-Federalists considered the human to be perfectible—that in the right setting, humans are capable of self-government and will act in the broader interest of the community. Government, if arising from suitably small political divisions and emphatically and directly representative, could be entrusted to those whose civic virtues have been nurtured in the community.

In each case, an ideal state of nature, predating the formation of society, was postulated, and the notion of an individual endowed with perfect freedom and perfect equality was developed. There was general agreement that government should be formed by means of a contract—a foundation of fundamental law establishing a set of norms for common and legislative law to meet. The Constitution was proposed and ultimately accepted as such a structure—one whereby reason, rather than passion, would direct the common affairs of the American community.

The government established by that constitution was crafted to operate, machine-like and without much additional attention, to constrain the activities of those who took up the public obligations of governance. The influence of Newtonian science and its reliance on law is reflected in the framers' desire to impose rational order on political life through the Constitution—"a properly designed state...would check interest with interest, class with class, faction with faction, and one branch of government with another in a harmonious system of mutual frustration."⁴¹ This system of checks and balances was expected to both overcome human weakness and to use human fallibility in pursuit of the common interest of the governed.

Can these directions found in the early foundations of American liberalism be attributed to the modern worldview? It is clear that the founders, both Federalist and Anti-Federalist, relied on Locke for their understanding of social life. Locke's picture of the state of nature and the idea of the individual contained in it can, in turn, be traced to the thinking of Descartes. These understandings of the relationship between the person and society are idealizations that had the force of truth when it came to making a new nation.

⁴¹ Hofstadter, R. (1989) *The American political tradition and the men who made it*. Rev. Ed. New York: Vintage Books, p. 11.

Locke's rights-bearing individual, whether hopelessly self-involved or capable of improvement, has remained at the center of American political philosophy since the colonial period.

That the Anti-Federalists tempered their Locke with Montesquieu does not reduce the influence of science on their thinking. Montesquieu's *Spirit of the Laws* reflects the "cool objectivity, detached relativism, painstaking accumulation of fact and observation in support of his generalizations" that we rightly associate with modern science.⁴² His definition of laws as necessary relations deriving from the nature of things and his application of determinism to social and political life demonstrate the influence of Newton, as his dualism between physical law and moral law reflects that of Descartes.⁴³

Finally, the idea of progress as an American theme was born during this period. The Puritans founded colonies in America in order to develop an example of right living for the world—this new world, untainted by old intrigues and dissolution would be a shining light for progress in humankind's right relation with God. In the founding period, the Federalists associated progress with the building of a commercial nation—one not dependent on European trade, but capable of self-sufficiency. The Anti-Federalists connected progress more to the concept of personal development—the engendering and flourishing of civic virtue through local and limited government. Into the unfolding narrative of American uniqueness, all three of these definitions of progress would be woven.

Case 2. Ordinary Life in the Nineteenth Century

The next case we will examine for the influences of classical science is antebellum America and the lives of ordinary Americans in the different regions of the United States during this critical period. Although different emphases emerge in the South, the West, and the North, each point of view remains firmly in the modernist camp. Just as the two sides of the founding debate share modernist assumptions while differing at the surface, ordinary American values in the nineteenth century retain a common foundation while exhibiting diverse surface appearances.

During the nineteenth century, the expression of American social values in daily living diverged radically, depending largely upon the region of the United States in which one lived. Daily lived experience in the antebellum and reconstruction South, in the growing urban centers of the North, and the frontier settlements of the expanding West each reflects, however different they appear to be, the continuing influence of modern science

⁴² Guerlac, H. (1971) Three eighteenth-century social philosophers: Scientific influences on their thought. (pp. 1-18) in G. Holton, ed. *Science and the modern mind: A symposium*. Freeport, NY: Books for Libraries Press, p. 2.

⁴³ *Ibid.*, p. 3.

and proliferating technology on the developing nation. Ordinary experience is the ground from which great historic moments arise, and the divergence of lived experience in the growing United States formed the basis for decisions about several defining issues: the question of the “nation” versus the confederation of states; a determination of what citizenship entails; the role of government vis-à-vis business; the future direction of economic development; and the importance of democracy as both a social and political phenomenon. The effect of both Newtonian science and the science of Darwin on ordinary people influenced their opinions on those issues.

The South

Although there were hints in the colonial period of the lifestyle and value structure that would come to characterize “the South,” the region did not cohere around these until the mid-1800s. The Carolinas, for example, split into two colonies because the proprietors’ Locke-based plan for a landed gentry centered in Charleston dominating the “numerous but politically powerless freeholders and an even larger and less influential tenant class” of the colony could not be realized.⁴⁴ However, the semi-tropic climate, with its long growing season, favored the labor-intensive, agricultural production of rice, sugar, indigo, tobacco, and later, cotton.⁴⁵ An economy based on these crops led to the development of the plantation system maintained through African slavery—one that supported a gentleman planter image and a way of life that became incompatible with the rest of the Union.

Most white citizens of the South owned small farms or were tenant farmers on a small scale. Most barely eked out a living before the War, and were reduced to poverty after the war. These southern citizens held tightly to their independence and both resented and resisted interference with their way of living from outside. They were fundamental in religion, poorly-educated, and conservative in politics. The plantation system made town and city formation difficult and the prevalence of slavery discouraged foreign immigration, so the South remained largely rural and sparsely populated.⁴⁶ Only ten percent of the population lived in towns;⁴⁷ most were tied to their land and their hopes of a better, easier life for their future generations. They centered their efforts on preserving family, kinship and community values, taking pride in, for example, farming the same land that previous generations, tracing back to colonial days, had farmed.⁴⁸

⁴⁴ Vaughn (1983), p. 23; cf. Lyons, O., J. Mohawk, V. Deloria, Jr., L. Hauptman, H. Berman, D. Grinde, Jr., C. Berkey, and R. Venables (1992) *Exiled in the land of the free: Democracy, Indian nations, and the U. S. Constitution*. Santa Fe, NM: Clear Light Publishers, pp. 232-233.

⁴⁵ Lewis, P. (1992) America’s natural landscapes. (pp. 41-67) in L. S. Luedtke, ed. *Making America: The society and culture of the United States*. Chapel Hill, NC: The University of North Carolina Press, p. 59.

⁴⁶ Ibid.

⁴⁷ Countryman (1996), p. 199.

⁴⁸ Ibid., p. 135.

It is estimated that between seventy-five and ninety-five percent of the white population had little or no direct interest in slavery.⁴⁹ Although the Southern gentleman planter and slave-owner represented a distinct minority of all white citizens of the South, he was the dominant factor in the political life of the region, and achievement of wealth and status similar to his was the driving goal of his fellow citizens. The Southern planter, “with his charming manner, genteel and gracious style of living, and conservative leadership of the community became the ideal of the region [and] all looked to life on a plantation with a great house as the measure of ultimate success.”⁵⁰

The antebellum South, more than any other American region, perpetuated a patriarchal society, where gender roles of men and women of all classes were sharply defined and rigorously maintained. In an era marked by early efforts at achieving political equality for women, the South remained stubbornly immune. Southern women, like the Grimké sisters of South Carolina, who campaigned for abolition and equal rights for women “felt compelled to leave the region for the more congenial North.”⁵¹ Caught up in an idealized recreation of the courtly life of medieval knights and ladies, Southern planter families were structured around a complex kinship system of well-defined roles: the oldest male as family head, military education and a strict code of personal honor for all male family members, and an artificial understanding of female delicacy and innocence—one that did not reflect the hard work women experienced in supervising the daily operations of the plantation.⁵² According to the unwritten code underlying these relationships and roles, a position once taken, be it personal or political, could not subsequently be denied. Retreat from a position that, for example, African-Americans were inferior people and that slavery was their proper and natural state, would be considered dishonorable.⁵³

Many in the South, even those of the planter class, recognized the moral paradox represented by slavery and that the end of the “peculiar institution” was inevitable. From the beginning, such men as Thomas Jefferson and Patrick Henry had justified the constitutional recognition of slavery as a necessary evil and then worked quietly and personally to end the practice, believing that it would gradually disappear over time.⁵⁴ However, as the southwest opened up for the expansion of cotton planting, the need for

⁴⁹ Lacour-Gayet (1970) provides the lower figure (p. 168); Smith, P. (1982) *Trial by fire: A people's history of the Civil War and reconstruction*. New York: Penguin Books, p. 24; and Countryman (1996), p. 198, provide the higher estimates. In fact, around 350,000 Southerners owned nearly 4 million African-American slaves, of which figure around 250,000 owned fewer than 10 slaves apiece (Lacour-Gayet, op. cit.).

⁵⁰ Degler, C. (1970) The two cultures and the Civil War. (pp. 92-119) in S. Coben and L. Ratner, eds. *The development of an American culture*. 1st ed. Englewood Cliffs, NJ: Prentice-Hall, Inc., p. 101.

⁵¹ Ibid., p. 103; cf. Countryman (1996), pp. 182-183.

⁵² Smith, P. (1982), p. 10; and Degler (1970), pp. 102-103.

⁵³ Countryman (1996), p. 188.

⁵⁴ Lacour-Gayet (1970), p. 182. Jefferson was particularly tormented by the paradox involved in theoretically believing and openly declaring that all men are created equal while keeping some in bondage.

cheap labor continued.⁵⁵ Unsuccessful slave revolts, like that of Nat Turner, inspired widespread fear because no one could imagine how it would be possible to accommodate four million emancipated slaves in an economic sense (few took political rights into consideration at all) and still protect white society from possible retribution for past injustice and mistreatment.

The Southern aristocracy also knew that when slavery ended, so too would the pleasant trappings of a near-feudal system with its notion of chivalry, individual honor, and gracious living. One historian describes the South as a society that “ran on food and compliments.”⁵⁶ Diarist Mary Chesnut, wife of a close advisor of Jefferson Davis, wrote, “Slavery has got to go, of course, and joy go with it.”⁵⁷ The plantation lifestyle, the paradoxical relationships of master and slave, the contradictions of gentility and violence in daily life, all revolved upon maintaining the South’s political power—the balance of new states as slave or free—and economic power in the continuation of slavery as a means of wresting cash crops from the soil economically.

Southern political leadership expressed these political and economic concerns couched in the rhetoric of states’ rights. The South held no monopoly on the understanding of the United States as a confederation, not as a nation—many in the North also saw the Union as a voluntary association of states. However, the South had the most to lose should centralized national government become the accepted understanding of the federal relationship, and should free states outnumber slave states in the future. Slavery was increasingly defended as a prerogative of the self-determined states by such able spokesmen as John Calhoun,⁵⁸ and retaining the political power in the national government to protect that prerogative depended on maintaining what Lincoln would later term “a house divided against itself”—half slave and half free.⁵⁹

The Supreme Court under Chief Justice Taney maintained, in the *Dred Scott* decision of 1857, that neither African slaves nor their descendants, whether emancipated or not, were or could be part of the people of the United States and enjoy the basic rights and protection of citizenship.⁶⁰ Legislation, petitions, and speeches in Congress in favor of abolition were effectively “gagged,” and third-party candidacies failed.⁶¹ However, the old party system, when it traded “free” status for California for the Fugitive Slave Act of

⁵⁵ At the time of the Civil War, cotton represented 60 percent of America’s exports, a fact that justified Henry Hammond’s assertion, believed by many in the South, “You dare not make war upon Cotton. Cotton is King!” Cited in Countryman (1996), p. 190.

⁵⁶ Smith, P. (1982), p. 15.

⁵⁷ Cited in Smith, P. (1982), p. 19.

⁵⁸ Lacour-Gayet (1970), p. 185.

⁵⁹ Lincoln’s speech in candidacy for the Illinois Senate in 1858, quoted in Lacour-Gayet (1970), p. 192; cf. Countryman (1996), p. 146.

⁶⁰ Countryman (1996), p. 162.

⁶¹ Ibid., p. 190.

1854, broke down, and the Republican Party was created.⁶² In defending the position ultimately taken by Southern leadership—to secede—more than 250,000 Confederate soldiers lost their lives, and the region was laid waste.⁶³

The North

While the South followed Jefferson’s agrarian republican path, the developmental path of the North tended to follow the Hamiltonian commercial vision for America.⁶⁴ This region was more urban, commercial, and industrial than the South from the founding period onward. The great financial and shipping centers of America were Boston and New York—many goods shipped from the South and to the South traveled through these ports, in addition to New Orleans. Mining and manufacturing grew in areas rich in natural resources—Appalachian coal and Mesabi iron—and close to natural means of transportation, like the abundance of river systems and lakes that were the legacy to the region of glaciation.⁶⁵

The New England pattern of developing villages, with common land as well as individual homesteads, was carried westward into Western Reserve lands in Ohio.⁶⁶ Settlements grew into towns, and towns into cities. Banks, factories, and retail businesses sprang up alongside residential properties. Northern small-farm agriculture, blessed with rich and level land, produced principally foodstuffs—grains, vegetables, and meat—intended for domestic consumption more than for export.

The characteristic social organization associated with the South was the plantation with its self-contained community. For the North, the typical social organization was the city. At the time of the first census, “the twenty-four recognized cities...accounted for only 5 percent of the national population,” rising to seven percent in 1820, and 51 percent a century later.⁶⁷ By 1860, New York, with a population of 800,000, had become the world’s third largest city.⁶⁸ The pace at which the Northern cities grew is exemplified by Chicago. Beginning as a village of 3,000 inhabitants in 1840, Chicago’s population grew to 100,000 by 1860, and, between 1880 and 1920, over 600,000 foreign immigrants and nearly 800,000 native-born Americans moved into the city.⁶⁹

⁶² Ibid., p. 191.

⁶³ Confederate casualties alone were equivalent with American loss of life in the American Revolution, the War of 1812, the wars against Mexico and Spain, World War I, Korea, and Vietnam combined. See, Countryman (1996), p. 198.

⁶⁴ The “North” as discussed here would more closely correspond to today’s Northeast and Midwest regions, extending north from Washington, D.C. and west possibly as far as Chicago.

⁶⁵ Lewis (1992), pp. 51-52.

⁶⁶ Gastil, R. D. (1975) *Cultural regions of the United States*. Seattle, WA: University of Washington Press, p. 12.

⁶⁷ Abbott (1992) Urban America. (pp. 110-128) in Luedtke, L. S., ed. *Making America*, p. 112.

⁶⁸ Lacour-Gayet (1970), p. 10.

⁶⁹ Lacour-Gayet (1970), p. 15; and Abbott (1992), p. 113.

Northern cities were generally associated with the kind of industry that dominated each—they came to be known as “textile towns, steel towns, shoemaking towns, pottery towns.”⁷⁰ Urban centers in the South and the West, on the other hand, were the suppliers and customers of the industrial belt cities—sending cotton from Mobile to the mills at Lowell, Massachusetts, or cattle from Kansas City to the post-Civil War slaughterhouses of Chicago, and receiving finished dry goods and beefsteaks.⁷¹

The North could be characterized as energetic and busy—its dynamics enhanced by the waves of immigration to the New World that, for the most part, entered through and settled in the region. It is estimated that, between 1840 and 1855, more than three and a half million people came to America from all corners of Europe.⁷² These newcomers were a diverse lot, bringing foreign customs and languages, skills and ideas, as well as higher concentrations of Roman Catholics and Jews into the American melting pot. What had been a more or less homogenous, Anglo-Saxon, Protestant population had become a polyglot. Where a static sense of tradition dominated the thinking in the South, that of the North could be characterized as focused on progress and change—and enterprise was the means by which progress and change were achieved.

The concept of individualism, identified in the South with land ownership and independence from outside authority, took on a different meaning in the northern states. Although land ownership continued to be an important goal and stepping stone to success, Northern entrepreneurs saw the value of using their money as venture capital, investing it in riskier enterprises involving invention and technological innovation.⁷³ In the North, individualism came to encompass the notion that each person could, through hard work, thrift, and shrewd investment, make a fortune and achieve success. Although the social mobility touted by the Horatio Alger novels was not as achievable in fact as represented in fiction, the notion of a working class youth being able, through his own honest devices, of winning “economic glory” served as a model of success and individuality for the North.⁷⁴ It was possible, in industrial America, to leave the working class without leaving the country.⁷⁵

Early Northern cities were a paradoxical combination of culture and poverty. Streets were narrow and winding, made of packed dirt which became quagmires after rain.⁷⁶ There

⁷⁰ Abbott, C. (1992), p. 112.

⁷¹ Ibid., pp. 112-113.

⁷² Lacour-Gayet (1970), p. 8.

⁷³ Countryman (1996), pp. 111-118.

⁷⁴ Pessen, E. (1992) Status and social class in America. (pp. 362-375) in Luedtke, L. S. , ed. *Making America*, p. 370.

⁷⁵ Countryman (1996), p. 140.

⁷⁶ Smith, P. (1981) *The nation comes of age: A people's history of the ante-bellum years*. (Vol. 4) New York: Penguin Books, p. 758.

were no city services, as we know them today. Houses were principally constructed of wood and there was a constant danger of fire, especially in the poorer, more densely-populated regions of the cities. Fires devastated sections of New York, Pittsburgh, and San Francisco in the years preceding the Civil War. Fighting fire was at first a concern of voluntary associations, but as cities grew in size and population, it became apparent that these associations were unequal to the task. There were no municipal fire departments until that established in Cincinnati, Ohio, in 1853.⁷⁷

In working class urban families, all members were potential wage earners. Just as pre-industrial families combined aspects of the market economy and home life, where all members contributed to the economic health of the family as a whole, poorer city dwellers of both genders and all ages sought wage employment to meet their basic needs.⁷⁸ Poorer urban households often included non-relatives as boarders or lodgers, just as apprentices and other laborers were included in pre-industrial households.⁷⁹

For the middle class and wealthy, industrialization did bring about change in gender-related family roles. Children were expected to spend more years in education and not to seek employment as early as their working class counterparts. Women were expected to fill a domestic role, and their domestic occupation was considered both a symbol of femininity and as less valuable economically. Although gender differences were not as exaggerated as they were in the South, the beginnings of the Victorian “cult of domesticity” can be found in the antebellum cities of the North.⁸⁰ Middle class and wealthy Northern women, freed from the necessity of wage earning and often of heavy domestic labor, were able to become involved in “causes.” They were “organized to do things in the world,” engaged in seeking wider educational and other opportunities for women, in social work, and in such reform causes as the abolition movement.⁸¹

Education was more widespread and more highly-valued in the North for two principal reasons.⁸² First, broader-based education prepared children for the world of work outside the home. Second, most foreign immigrants settled in Northern cities—education was seen as a means of assimilating and socializing them, especially in the decades following the Civil War when Southern and Eastern European immigrants were greater in number. Because these immigrants tended to settle together and preserve their own languages,

⁷⁷ Lacour-Gayet (1970), p. 19.

⁷⁸ Countryman (1996), p. 140.

⁷⁹ Hareven, T. K. (1992) Continuity and change in American family life. (pp. 308-326) in L. S. Luedtke, ed., *Making America*, pp. 312-313.

⁸⁰ *Ibid.*, pp. 314-317.

⁸¹ Countryman (1996), p. 146.

⁸² The idea of tax-supported public education began in the 1820s, but was widely opposed on several grounds, among them: compulsory attendance interfering with the parents’ right to make decisions for their children and taking property, in the form of taxes, from one person to educate another person’s child. Conservatives feared the democratizing influence of education. Lacour-Gayet (1970), pp. 216-217.

customs, and traditions, creating, in the eyes of many, “an urban culture undermining the foundations of democracy,”⁸³ prolonging the influence of education was seen as a stabilizing factor.⁸⁴

Compulsory education laws, requiring school attendance for children aged five to 16, combined with a shortage of teachers due to the Civil War, opened the profession of teaching to women, providing socially acceptable, non-domestic work opportunities for middle class women.⁸⁵ In the North, such women explored the possibility of higher education, most attending women’s seminaries or colleges, like Mount Holyoke which was established in 1837. Oberlin College (1803) was the first to open its doors to both men and women, followed by Antioch (1823), and later still by Iowa State University (1856) as co-educational colleges.⁸⁶

For all that the North was more industrial and commercial than was the South, businesses had not grown truly large nor well-organized until the prosecution of the Civil War forced such growth and organization on them. Northern institutions were not well-placed to suppress secession. The private sector in all of its aspects was too loosely-connected in 1861. Production and transportation of goods and equipment were inadequate to support the upcoming military effort. “There were no medical or legal societies, no business organizations, no farmers’ or workers’ groups to which the government could turn for advice, assistance, or much-needed expert personnel.”⁸⁷ Demands of the war effort generated the ground-up construction of “communications, organizations, and bureaucracy” that had not existed before.⁸⁸ Measures were taken by the Lincoln Administration that had never been taken before by the national government— among them, an expansion of the currency by the issue of federal greenbacks, a federal income tax, and a conscription law.⁸⁹ All of these served to reinforce the idea that the United States was a nation, and that a less radical stance toward institutions and reform would now be characteristic of that nation.⁹⁰ Institutions that had been the target of more radical reform movements of the past were then, in the exigencies of war, being bolstered in order to “preserve the Union and eradicate slavery.”⁹¹

Whereas the South entered into the Civil War dedicated to the protection of the right of states to self-determination and the preservation of practices about which they felt

⁸³ Orr, J. B. (1992) The American system of education. (pp. 376-391) in L. S. Luedtke, ed. *Making America*, p. 378.

⁸⁴ Lacour-Gayet (1970), p. 217.

⁸⁵ Orr (1992), p. 379.

⁸⁶ Lacour-Gayet (1970), p. 225.

⁸⁷ Degler (1970), p. 106.

⁸⁸ Ibid.

⁸⁹ Ibid., p. 107.

⁹⁰ Ibid., pp. 108-109.

⁹¹ Ibid., p. 108.

strongly, there was no one common cause for the North. Northerners were ambivalent in their feelings about emancipation and about the nature of the federal union. Nevertheless, the war effort on the Union side was immense. Casualties suffered by the Union army were estimated at 360,000 dead.⁹² The combined losses of the two armies—nearly 620,000—translates into one soldier’s death for every six slaves freed.⁹³ But perhaps an even more important outcome was the destruction of productive capacity in the South in an era when the North had become more economically vital. This disparity, along with the unresolved psychological and political issues embodied in the struggle, would keep intersectional distrust, and even hatred, alive as a part of the political and social fabric of the nation.

The West

The Louisiana Purchase of 1803 and the Mexican War of 1848 brought the land territory of the United States into roughly the size of the contiguous 48 states of today. This “empty” land acted as a magnet, drawing restless, ambitious Americans to explore and settle, and, most importantly, to become land-owners.⁹⁴ From the beginning, the “official goal of American land policy was to create a citizenry of individual freehold farmers.”⁹⁵ By 1820, the government sold land in parcels of a minimum of 80 acres at a price of \$1.25 an acre. Western migration was further encouraged by government through its disposal of common land by means of the Homestead Act, passed in 1862, where land in 160-acre lots was disbursed at minimal cost to individuals willing to clear and improve their holdings.⁹⁶ The opening of the West for migration and settlement also served as a safety valve to counteract population pressure arising from immigration—newcomers who did not settle in the cities of the North made up a significant part of the westward migration.⁹⁷

Invention and innovation in the areas of transportation and communication had always had a high priority, but as people and industry moved west in greater numbers, it became even more imperative that transportation technologies improve. Canals first connected the agricultural areas of upper New York State and the Midwest with the port city of New York, and by 1807, Robert Fulton’s steamboat, Clermont, could make the trip from New York to Albany in just 32 hours.⁹⁸ Steamboat travel on western waters pushed the envelope of both innovation and daring. Accidents were frequent, all too often

⁹² Countryman (1996), p. 198.

⁹³ Ibid.

⁹⁴ The “empty” land was, of course, not empty at all—Native Americans, both of western tribes and relocated eastern clans, and Mexican settlers in the southwest populated the West before American homesteaders and 49ers migrated into it.

⁹⁵ Countryman (1996), p. 99.

⁹⁶ Ibid., p. 100.

⁹⁷ Lacour-Gayet (1970), p. 123.

⁹⁸ Boorstin, D. J. (1965) *The Americans: The national experience*. New York: Vintage Books, p. 98.

attributable to “incompetence and carelessness” on the part of operators pushing past the tolerance limits of the boilers powering the boats.⁹⁹ The competition among steamboat captains for speed records in western waters contributed to more than 150 explosions leading to the deaths of over 1,400 passengers during the period of 1825 to 1850.¹⁰⁰

Since natural or man-made water routes could not adequately address the transportation needs of the growing nation and since there were limits on the effectiveness and speed of animal-powered ground transportation, railroads became the object of considerable capital investment and interest. Early capital for railroad building and, as a necessary adjunct, the mining of coal came from England.¹⁰¹ The American government sponsored a great deal of the western expansion of the railroads through land grants, designed to encourage the completion of a transcontinental line. Land grants included both right-of-way land and land that could be sold to defray developmental costs, as well as loans available based on how many miles of track were completed. Competing companies entered into a profitable race to lay track in order to take advantage of the terms of the Pacific Railroad Act of 1862.¹⁰² This competition for federal lands and money is another example of what Boorstin (1965) calls America’s typical “technology of haste”—building, making, innovating without much thought for present safety or future value.¹⁰³

Railroads left their distinctive mark on the developmental pattern of the West. First, towns that were established along the right-of-way had a commercial advantage—goods could be shipped and received more easily and efficiently. Towns built along the railroad flourished, and “towns that were bypassed quickly evaporated.”¹⁰⁴ Other western towns—farm towns, mining towns, and “cow” towns—were often unstable, or even “disposable,” depending as they did on economic forces and resources that local citizens did not own and could not control.¹⁰⁵

Second, the railroads themselves assisted in town planning. The Illinois Central, for example, drew up model plans for towns along its right-of-way—street names like Chestnut and Hickory running parallel to the tracks, and streets numbered from the depot, north and south, intersecting the tracks.¹⁰⁶ Just as they would later successfully gain government support for standard time zones, the railroads succeeded in standardizing the development of towns within their broad sphere of influence—“reshap[ing] the

⁹⁹ Ibid., p. 101.

¹⁰⁰ Ibid., pp. 101-102.

¹⁰¹ Smith, P. (1981), p. 276.

¹⁰² Boorstin (1965), p. 103.

¹⁰³ Ibid., pp. 97-107

¹⁰⁴ Lingeman, R. (1992) A consonance of towns. (pp. 95-109) in Luedtke, L. S., ed., *Making America*, p. 104.

¹⁰⁵ Ibid., pp. 104-106.

¹⁰⁶ Countryman (1996), p. 123. This goes a long way toward explaining why nearly all mid-western towns have streets with the same names.

American-built environment and reorient[ing] American behavior” across a wide variety of activities and values.¹⁰⁷

The life of the pioneer family or the Western frontiersman has been idealized as the symbol of American individualism. Life for the homesteader or rancher or miner and their families was not easy. Migration over land, with starting points in the Mississippi and Missouri river basin, presented the multiple challenges of a thousand miles of prairie without adequate maps, no clear promise of potable water or game to supplement supplies carried, the danger of encountering hostile Native Americans, and a formidable mountain range between the travelers and their goal of California or Oregon. Those drawn by the lure of gold discovered in 1848 often chose a water route west. These adventurers faced either an arduous voyage around South America to reach California, taking nearly a year from New York to San Francisco, or a shorter route across Central America, where the principal dangers were yellow fever and cholera.¹⁰⁸

Neither of the stereotypes of the frontier—the homesteader and the prospector—comes close to the actual existence of these early settlers. We visualize these people as strong and hardy, but their diaries record a constant struggle to hold onto a precarious balance between life and death. Theirs was “a fragile kind of existence”—the loneliness and isolation of the homesteader taking a toll on mental health, as the danger of accident and illness did on physical well-being.¹⁰⁹ The evidence suggests that, in addition to simple accidents, these families experienced higher than average deaths in childbirth, infant and early childhood mortality, incidences of insanity, and divorce rates.¹¹⁰

Family letters and other personal documents indicate that the instability experienced on the frontier was so diffuse that “each aspect of everyday life was uncontrollable.”¹¹¹ The pioneers were not “brutes,” with their culture stripped away, although this is how they were often characterized by people in the East. Still, it is true that the conditions in which they found themselves often forced them to drop some refinements, and to rely on themselves first, and then those settled close to them.¹¹² Community was never more important than when it was difficult to establish—kinship and neighborliness in such isolated communities became the foundations of Western culture.¹¹³

¹⁰⁷ Schlereth, T. J. (1991) *Victorian America: Transformations in everyday life, 1876-1915*. New York: HarperCollins Publishers, p. 22. To facilitate scheduling and shipping, the railroads introduced Standard Railway Time in November of 1883. This became federal law with the passage of the Standard Time Act of 1918. *Ibid.*, pp. 30-31.

¹⁰⁸ Lacour-Gayet (1970), p. 154.

¹⁰⁹ Schlissel, L. (1992) The frontier family: Dislocation and the American experience. (pp. 83-94) in L. S. Luedtke, ed. *Making America*, p. 88.

¹¹⁰ *Ibid.*, pp. 89-90.

¹¹¹ *Ibid.*, p. 90.

¹¹² Countryman (1996), p. 133.

¹¹³ *Ibid.*, p. 134.

In addition, the West was a violent place. Although the Northwest Ordinance of 1787 contained provisions for the governing of territories and the requirements for admission to statehood, the establishment of law and law enforcement in the West was not easy. Many who migrated adopted loose rules of conduct based largely on personal loyalty, rather than building law enforcement institutions. These cowboys, trappers, miners, and settlers “were not particularly disposed to submit to [institutional] authority.”¹¹⁴

Perhaps the most significant effect of the outcome of the American Civil War can be seen as a consequence for the West. The demands of the war effort brought about improved communication and transportation methods and a concentration of industrial organization in the North. The Union victory and subsequent years of Reconstruction insured that the South could not recover its former economic importance readily. To the entrepreneurs of the North, having seen new uses of “power and the possibilities for large-scale enterprise,” the West offered an unprecedented prospect for private exploitation.¹¹⁵ As Tipple (1970) puts it:

Before him spread an immense untapped continent whose riches were his virtually for the taking; new means to turn these resources to profitable account were at hand. A host of new inventions and discoveries, the application of science to industry, and improved methods of transportation and communication were ready to assist the businessman.¹¹⁶

The further development of the corporation, the power of stockholding and venture capitalism to transform American business, and the exploitation of the West all contributed to the next aspects of the government reform movement. The ambition, the ruthlessness, and the power of the financial interests consolidated during the war took advantage of unresolved ideological issues in the nation to build a private empire within the nation and to establish an economic hegemony and political power base that would alter the shape of American development and policy for good and for ill. The irony of this situation is best exemplified by the transformation of the corporation from a form of business organization to a legal “person” through the passage of the Fourteenth Amendment to the U. S. Constitution. This amendment was intended to confirm the nation’s right to define citizenship so that previously disenfranchised persons—emancipated slaves, in particular—could not be denied the rights and responsibilities of citizenship by states.¹¹⁷ In so doing, the legal status of the corporation was also enhanced, giving businessmen an opportunity to seek and get relief from state law in a period before there was adequate federal law to control corporate behavior.

¹¹⁴ Lacour-Gayet (1970), p. 147.

¹¹⁵ Tipple, J. (1970) Big businessmen and a new economy. (pp. 13-30) in H. W. Morgan, ed., *The gilded age*. rev. ed. Syracuse, NY: Syracuse University Press, p. 14.

¹¹⁶ Ibid.

¹¹⁷ Countryman (1996) contends that, prior to the 1868 passage of the Fourteenth Amendment, while the term “citizen” was used in official language, it had never been adequately and uniformly defined (p. 151).

Analysis

Regional differences highlighted above may leave the reader with the impression that whatever unity there was in the founding period had eroded in the early decades of the nineteenth century. However, underlying these surface differences remained some common modern threads. Tocqueville, who visited America during this period, points out that the American experience of democracy was still largely local, still based on a rough equality of condition, and still supported by a wide range of civic associations—that Americans were bound together by religion, education, and the availability of sufficient resources to support them comfortably.¹¹⁸ He argued that despite the incontestable fact “that the tastes and the habits of republican government in the United States were first created in the townships and provincial assemblies,” the federal structures of American government provided the right balance of authority between the states and their localities and the national government.¹¹⁹ The federal system, as it was in the 1830s, seemed to combine “the different advantages which result from the magnitude and the littleness of nations”—that is, that the national government was empowered to deal with those aspects of life and interests that were better handled in common, while the states dealt with the “details of administration,” arising from the particular needs and aspirations of local citizens.¹²⁰

Tocqueville’s observations on the issue of slavery and emancipation seem to confirm widely-held views that assume the “natural” inferiority of the slave and her incapacity to fully participate in the American democratic system.¹²¹ While decrying the effects of slavery on the African and of dispersal and oppression on the Native American, he submits those effects as reasons for the continuing to hold non-Europeans in a secondary status, in fact arguing that the European’s influence on both have brought out the worst of their naturally inferior tendencies.¹²² This assumption of the European’s natural superiority to native peoples around the world was commonly offered as justification for imposing “modern” conditions on other cultures through colonialization. The knowledge system grounded in modern science served as a basis for this view—indigenous peoples,

¹¹⁸ De Tocqueville (1990), Vol. 1, pp. 288-330.

¹¹⁹ Ibid., p. 164.

¹²⁰ Ibid., p. 163.

¹²¹ Ibid., p. 332.

¹²² Ibid., pp.332-355. Tocqueville, like other historians of the era, saw this influence as unidirectional. Native Americans had to be described as barbarians to justify the brutal treatment they habitually received at the hands of European colonists in both Americas. To acknowledge the influence of, for example, the Iroquois and their political system on the framers would destroy the credibility of such arguments. See, Lyons, et al. (1992) and Johansen, B. E. (1982) *Forgotten founders: How the American Indian helped shape democracy*. Harvard, MA: The Harvard Common Press, for an argument that influence went in both directions.

like nature herself, were seen as resources by the modern project, not as fully human people.

In the ante-bellum period, we see the re-emergence of the Anti-Federalist argument in the states' rights rhetoric of the South. By the middle of the nineteenth century, that argument had moved away from its Jeffersonian roots and had crystallized into an unwavering defense of the ideal of the Southern plantation lifestyle, with all that implied. The South had settled into brittle patterns of relationship supported by the continuation and spread of slave-owning; where once the politics of local self-government had been the more radical republicanism, it had now become a conservative and almost static caricature of Jeffersonian ideals.

The North, on the other hand, retained a dynamism associated with new industry, new commercial potentials, and new people. The rapid increase in the complexity of business organization changed the nature of industry from a paternalistic system of production (as in the cotton mills of Lowell) to production driven by technology.¹²³ The idea of progress became entangled with an understanding of biological evolution derived from Darwin—economic success was considered the indicator of who were the fittest, and these survived and dominated what were rapidly becoming national markets.¹²⁴ The resources of the West were seen as a rich feast for those enterprising enough to take them. New Americans, if they couldn't be assimilated in the established and settled areas of the North, pushed west in hopes that they could be counted among the “fit.”

Perhaps the most clear indicator of the influence of the modern worldview is the way the deterministic mythic narrative of the American frontier and the American pioneer informed our understanding of the individual. The Lockean individual, antecedently endowed with natural rights, was translated through the frontier myth into a larger-than-life symbol that continues to evoke nostalgia for what never was—the American isolated and self-reliant individual. In Frederick Jackson Turner's pivotal paper, “The Significance of the Frontier in American History,” he “sketched a process by which successive frontiers had continually rejuvenated the nation through infusions of individualism, daring, and democracy.”¹²⁵ His assessment of the role of the frontier in the development of America reinforced the already prevalent notion of American uniqueness, and his pronouncement that the frontier was gone clouded for many their previously optimistic view of the future. Turner, however, felt that America, even without the renewal of the frontier, could confidently face twentieth-century problems like “urbanization, industrialization, class conflicts, and the rise of the giant corporation”

¹²³ Lacour-Gayet (1970), pp. 113-114.

¹²⁴ Social Darwinism was used to justify the oppression of all non-European peoples as well as the power of commercial and financial giants, the “Robber Barons” to dominate both business and government.

¹²⁵ Wiebe, R. H. (1967) *The search for order: 1877-1920*. New York: Hill and Wang, p. 66; cf. Commager, H. S. (1950) *The American mind: An interpretation of American thought and character since the 1880's*. New Haven, CT: Yale University Press, pp. 294-298.

because of her basic and intrinsic difference from the nations of Europe.¹²⁶ Turner even suggested that American innovation and industrialism represented a new phase of the frontier; “American business enterprise...insisted that the pioneer spirit was being carried forward by modern industrialism, an image that Turner himself had suggested.”¹²⁷

It is clear that during this period the modern notions of determinism, domination and control, progress, and the ideal situation played pivotal roles in shaping the American character. The Union victory and subsequent supervision of the South during Reconstruction suppressed, for the moment, local urges toward more democratic practices. The Union victory created a nation where a confederation had once stood. And, for good or ill, that nation turned even more toward commercial and industrial goals.

Science, or more appropriately “scientism,” began to openly influence the way people thought about issues outside its own particular venue.¹²⁸ Natural science, prior to this period, had been of little interest to the average person. However, through the efforts of such men as Louis Agassiz, museums, lectures, and articles built around the natural sciences began to appear to engage that interest. Thus it was that a period of political mediocrity and characterized by a shoddy materialism—one that lacked any surface appearance of unity—was transformed by a burgeoning interest in science. As Lurie (1974) puts it,

In the uncertain, chaotic social and economic milieu of pre- and post-bellum America, the concept of Nature as truth-provider offered common man and man of culture alike both a barrier and a bulwark of physical and metaphysical certainty. Such bastions were necessary in a world buffeted by the winds of Darwinian transformation, the forces of social and industrial change, the dissolution of the old order of conservative republican virtue, and the growing stench of political and economic fraud and corruption.¹²⁹

Case 3. Radical Reform: The Populist Movement

The third case history—that of the Populist movement—reflects the one effective period of resistance against the modern worldview in our history. The Populists worked for radical change in government and in the economic structures of post-Civil War America. One object of the farmers’ revolt was the democratization of American economic and governing institutions. The movement gained strength in the farming states of the

¹²⁶ Commager (1950), pp. 297-298.

¹²⁷ Susman, W. I. (1984) *Culture as history: The transformation of American society in the twentieth century*. New York: Pantheon Books, p. 32.

¹²⁸ Scientism, as later discredited by philosophers like John Dewey, exaggerated the relevance of science in mediating all human inquiry. It was not science, but a caricature of science.

¹²⁹ Lurie, E. (1974) *Nature and the American mind: Louis Agassiz and the culture of science*. New York: Science History Publications, pp. 30-31.

midwest and south, but in its bid to become a national force for reform, the Populist Party lost sight of the principles that made it different, and eventually lost all ability to have an influence on government policy. Its most acceptable reform ideas were co-opted by the Progressives, and its radicalism was discounted into obscurity.

Government reform as we know it today was born in the period of 1880-1920, and consisted of two distinct and often antithetical phases—Populism and Progressivism. In the span of a generation, the voices of agrarian republicanism and of commercial and technological progress were raised once again—this time rather more specifically than in any period since the founding—with the latter ultimately gaining the status of dominant paradigm for restructuring American administrative practice. The decade of Reconstruction—when federal troops maintained martial law in the Confederate states to support participation in government by emancipated slaves and when Northern financial interests gained a toehold on the South’s economy—set the stage for the farmers’ revolt that followed. The Grange Movement and the Farmers’ Alliances were early efforts to regain citizen control of the local economy. Neither of these movements reversed the trend toward greater farm debt, increased tenancy, and increased rural poverty in the South and the West.

The era of Reconstruction left both major political parties tainted—the Democrats as the party of secession were associated with such terms as “treason” and “rebellion;” the Republicans, once the party of hope for full citizenship for black Americans, came to be associated with “unfulfilled promises” and “money interests.” When the more radical farm movements failed to accomplish their stated purposes, the erosion of these two political parties left room for the reemergence of the Jeffersonian, Anti-Federalist themes through the People’s Party—the Populists.

The end of the Civil War meant hard times for southern farmers. Northern finance capital entered the region along with federal troops and northern politicians, or “carpetbaggers.” For the farmer in a savaged economy, credit was a necessary evil—one that, in many cases, led to the end of property ownership. Farmers had to borrow against crop futures for their current needs and for capital improvements. Since the creditors were often both the suppliers of seed and other necessities, and the buyers of the crop that was put up as collateral, farmers paid too much for their supplies and received too little for their produce. This set up a cycle of debt that increasingly led to bankruptcy and loss of property.¹³⁰ Often, the farm owner became a tenant farmer in one or two growing seasons. This problem was so severe that by 1880, the more than 25 percent of all farmers were tenant farmers in all of the states of the South and in some Midwestern states, as well. This condition prevailed in one-third of all American states. By 1930, the problem

¹³⁰ Morgan, H. W. (1970b) Populism and the decline of agriculture. (pp. 149-170) in H. W. Morgan, ed. *The gilded age*, p. 162; cf. Parrington, V. L. (1987) *The beginnings of critical realism in America, 1860-1920* (completed to 1900 only). Norman, OK: University of Oklahoma Press, pp. 259-262.

had grown to the extent that in 28 of the 48 states, at least 25 percent of all farmers were tenants—the entire South, excepting Florida, had tenancy rates of over 50 percent.¹³¹

Many of these new poor migrated westward, but found conditions in the southwest depressingly similar. The Grange, or Patrons of Husbandry, was a system of local farmers' organizations fostered by the U. S. Department of Agriculture that provided men and women in isolated farm communities with opportunities for social interaction (it still exists for this purpose today) as well as cooperative enterprises such as: "buying and selling agencies, co-operative stores, factories of agricultural implements, [and] even banking and insurance establishments."¹³² Unfortunately, most of these Grange enterprises were poorly planned and capitalized, and so could not be maintained.

The severity of the economic conditions that inspired the formation of the Grange, and later the Farmers' Alliances, is apparent when post-war agricultural prices are considered. Taken as a whole, the yearly value per acre of the 10 principal crops of American agriculture decreased from \$14.70 to \$9.71 in the period from 1870 to 1890.¹³³ Staples like corn dropped in price from 63 cents per bushel (1881) to 28 cents in 1890; cotton, the mainstay cash crop of the South and Southwest, dropped in price from an average of 15 cents in 1873 to eight cents throughout the late 1880s.¹³⁴ Falling prices such as these were compounded by annual increases in charges for warehousing and shipping crops by rail during the period.¹³⁵

Despite these circumstances, American farmers were industrious and forward-thinking producers. They saw themselves going from "exemplars of American democracy," Jefferson's ideal of civic virtue, to victims somehow left out of the democratic process or prevented from participation by the powerful influence of the money interests on both political parties.¹³⁶ They recognized the value of American invention and technology, and sought, at considerable cost, to employ the most modern techniques in their work. They bought capital equipment, mortgaging their property to do so, to increase crop yields.¹³⁷ The heart of the injustice they saw was their poor return they received for their productive effort relative to the returns realized by industrial capitalists.¹³⁸

¹³¹ Malone and Rauch (1960), p. 147.

¹³² Ibid., p. 151.

¹³³ Smith, P. (1984) *The rise of industrial America: A people's history of the post-reconstruction era*. Vol. 6. New York: Penguin Books, p. 425.

¹³⁴ Ibid.; cf. Morgan, H. W. (1970b), p. 151.

¹³⁵ Ibid.; cf. Pollack, N. (1962) *The Populist response to industrial America: Midwestern Populist thought*. Cambridge, MA: Harvard University Press, p. 7.

¹³⁶ Ibid., p. 429.

¹³⁷ In Kansas, for instance, by 1890, 64.4 percent of the farms were mortgaged in the amount of 38 percent of their value (Smith, p., 1984, p. 425).

¹³⁸ Smith, P. (1984), p. 424.

The Farmers' Alliances were a group of loosely-connected farmers' organizations that sprang up in the South and Midwest in the late 1870s.¹³⁹ Like the Grange, these organizations of both men and women attempted to establish cooperative stores, grain elevators, cotton gins, and other ventures to help the farmer stand against Eastern financial middlemen, banks, and railroad interests.¹⁴⁰ These cooperative ventures failed, some sooner than others, not because of any inherent flaw in their conceptualization or implementation, but rather "because of the implacable hostility of the financial and commercial world."¹⁴¹ Those cooperatives that operated on a cash basis were able to survive longer and to provide some savings to individuals. However, those that operated on a credit basis were unable, in the long run, to overcome the obstacles imposed by the banking system. Perhaps the most constructive proposal of the Alliances was the "subtreasury plan," that called for "the setting up of government warehouses and subtreasury offices in agricultural counties...[through which] farmers might withhold their crops from a glutted market, store them in the warehouses, and secure short-term government loans on them in legal-tender paper up to 80 per cent of their value, paying a low rate of interest."¹⁴²

Having failed in their effort to bring change through economic pressure, American farmers reluctantly turned to political organization. Regional differences and ties to the Democratic party in the South and the Republican party in the West made cooperative political action difficult for the farm organizations. Political leaders of both major parties tempted the farmer to remain loyal to old party ties by offering both reasonable pleas—such as, "if you don't see what you want in our platform, ask for it"—and by reminding him of Civil War loyalties.¹⁴³ "Bloody shirt" tactics were employed by both parties, with farmers enjoined to "vote as you shot."¹⁴⁴ Despite such tactics, the farmers' movement succeeded in pulling together a viable political organization, the Populist (or People's) Party, and it began to have an impact not only on local government but also in the Congress.

Populism was both a significant political movement and an expression of a deeply-felt need to return control of government to the common people. As a social philosophy, Populism was informed by a combination of frustration and faith. On the one hand, it

¹³⁹ Malone and Rauch (1960), p. 152.

¹⁴⁰ Ibid., p. 153; cf. Smith, P. (1984), p. 431.

¹⁴¹ Goodwyn, L. (1976) *Democratic promise: The Populist moment in America*. New York: Oxford University Press, p. 112.

¹⁴² Malone and Rauch (1960), p. 154. At a time when financial interests exerted enormous pressure on government, especially regarding the maintenance of hard currency, such a proposal could not be enacted, although many attempts were made. It is ironic that it took a great depression to stir action on similar proposals made in the 1930s—ones that led to U.S.D.A. subsidies and soil banks to shore up agricultural production and control farm product prices into the present day.

¹⁴³ Smith, P. (1984), p. 434.

¹⁴⁴ Ibid., p. 435.

had become apparent that the farmer was no longer allotted the respect that had formerly been so commonplace—government neither listened to nor seemed to care about the plight of the farmer. Now, the voices that influenced government belonged to the capitalists and the corporations whose invention, industry, and technology were transforming America, and, in the farmer’s opinion, were alienating the laborer and other primary producers.

The farm community was held together, to the extent that it was, by an abiding faith in God, in democratic principles, in hard work, and in neighbors. Populism was both feared and ridiculed for this faith. The press, heavily influenced by the money interest and nascent middle-class pretensions, characterized leaders of the movement as “hayseeds,” “rubes,” and radicals. Cartoons depicted Populist leaders as clowns and fools—Jeremiah Simpson was, for example, dubbed “Sockless” Jerry, and others were openly ridiculed despite their erudition and the logic and power of their impassioned rhetoric.¹⁴⁵ As the movement grew more organized, it:

imparted a sense of self-worth to individual people and provided them with the instruments of self-education about the world they lived in. The movement gave them hope—a shared hope—that they were not impersonal victims of a gigantic industrial engine ruled by others but that they were, instead, people who could perform specific political acts of self-determination...Populism was, at bottom, a movement of ordinary Americans to gain control over their own lives and futures, a massive democratic effort to gain that most central component of human freedom—dignity.¹⁴⁶

The agrarian movement faced several critical issues as it struggled to produce a viable third party. First, it had to overcome the farmers’ past allegiances to the Democrats in the South and the Republicans in the West. It had to resist the temptation to participate—in fact, to steer debate away from—“bloody shirt” sectionalism and toward common beliefs and causes. It had to face the necessity of finding common ground with urban industrial laborers—a task made difficult so long as farmers saw themselves as property-owners. Finally, the movement had to build a political party infrastructure to compete with well-established campaign finance systems, while, at the same time, retaining “purity” on the issues most salient to the people.

Results of elections in 1890 seemed to offer evidence of success in dealing with these factors. In that year, the movement, not yet under the Populist banner, managed to elect five governors, to elect majorities in eight state legislatures, and to send 50 members to Congress who were sympathetic to the farmers’ causes.¹⁴⁷ The People’s Party itself was

¹⁴⁵ Smith, P. (1984), pp. 437-438.

¹⁴⁶ Goodwyn (1976), pp. 196-197.

¹⁴⁷ Malone and Rauch (1960), p. 155.

born in the “wheat-producing West,” where drought and bottomed-out grain prices, combined with a revivalist mood, led the farmers to run independent tickets in state and local elections.¹⁴⁸ Such regional successes inspired fear in both Democratic and Republican circles, and convinced previously reluctant Alliance organizations that any hope of real competition with the established parties lay in national organization as the Populist Party.¹⁴⁹

The Populists’ political agenda grew out of two basic convictions: “the capitalists—trusts, railroads, banks, loan sharks, merchants—were bleeding them, and the currency of the country was insufficient.”¹⁵⁰ The first of these fundamental beliefs is evident in the Populist platform of the Omaha Convention of 1892 that called for the nationalization of the transportation/communication utilities—railroads, telephones, and telegraphs.¹⁵¹ In the preamble to the platform it was suggested that either the railroads would “own” the people, or the people “must own the railroads,” and that if the latter were to obtain, then civil servants charged with managing the railroads should “be placed under a civil service regulation of the most rigid character” so as to avoid any increase in the uncontrolled power of the national government.¹⁵² While the Populists looked to national government to “restrain the selfish tendencies of those who profited at the expense of the poor and needy”—the railroads and other financial interests—they also strongly felt that “the people, not the plutocrats, must control the government.”¹⁵³

Money was an overriding concern of the Populists. They accurately observed that “the currency of the United States was both inadequate and inelastic.”¹⁵⁴ To remedy this situation, the Populists demanded “a national currency, safe, sound, and flexible” issued by the general government without the mediation of the states or banking corporations.¹⁵⁵ The Omaha platform suggested a three-pronged attack on the tight money problem. First, it demanded “free and unlimited coinage of silver and gold at the present legal ratio of sixteen to one.”¹⁵⁶ This plank addressed the principal concerns of the western mining elements of the party. Second, the platform called for an increase in circulating money to

¹⁴⁸ Ibid., p. 156.

¹⁴⁹ Ibid.

¹⁵⁰ Ibid., p. 154.

¹⁵¹ Smith, P. (1984), pp. 466-467; cf. Young, J. P. (1996) *Reconsidering American liberalism: The troubled odyssey of the liberal idea*. Boulder, CO: Westview Press, pp. 140-141.

¹⁵² The Omaha Platform (pp. 59-66) in Pollack, N., ed. (1967) *The Populist mind*. Indianapolis, IN: The Bobbs-Merrill Company, Inc., p. 63.

¹⁵³ Hicks, J. D. (1931) *The Populist revolt: A history of the Farmers’ Alliance and the People’s Party*. Minneapolis, MN: The University of Minnesota Press, p. 406; cf. Nugent, W. T. K. (1970) Money, politics, and society: The currency question. (pp. 109-127) in Morgan, H. W., ed., *The gilded age*, p. 123.

¹⁵⁴ Ibid., p. 413.

¹⁵⁵ Omaha Platform, in Pollack (1967), p. 63.

¹⁵⁶ Ibid.

“not less than fifty dollars per capita.”¹⁵⁷ Finally, a graduated income tax was proposed.¹⁵⁸

The Omaha platform contained other, even more radical, notions but did not emphasize civil service reforms. With the exception of the management of nationalized utilities, the Populists did not support the idea of creating or strengthening standing national administrative structures.¹⁵⁹ To ensure the ability of the people to control what government there was, the Omaha Convention “urged the secret ballot and endorsed three adventurous techniques for direct democracy: the popular election of United States senators; the initiative, giving the voters the right to legislate over the heads of their representatives; and the referendum, providing the voters with a veto over the actions of the legislature.”¹⁶⁰

The Omaha Convention nominated two former Civil War generals to head their first national ticket—James Baird Weaver of Iowa as the presidential candidate and James G. Field of Virginia as the vice-presidential candidate.¹⁶¹ The death of L. L. Polk, the front-running presidential candidate, a few weeks before the convention, removed the party’s best hope of balancing regional issues in 1892.¹⁶² Despite a platform that contained the essences of Populism’s “living issues,” Weaver and Field were not able to capture the imagination of voters outside their Alliance roots, especially not the industrial workers who, it would seem, should have been their natural allies.

When the votes were counted, Democrat Grover Cleveland was returned to the Oval Office, winning over Republican Benjamin Harrison by a popular plurality of about 360,000 out of ten million votes cast. His electoral margin was 277 to Harrison’s 145. Weaver and the Populists won 22 electoral votes and about one million popular votes.¹⁶³ This loss is misleading, however. Although the national ticket lost, the Populists made an impressive showing in 1892, retaining significant clout in a number of states. Their rapid progression from a loosely-joined, radical agrarian movement into a political party with the potential to change America was seen by the leaderships of both major parties as a serious threat to their continued hegemony. And wealthy industrialists feared the possibility that the Populists might find a way to overcome their differences with labor to create a real danger to the capitalist and corporate structures that dominated America’s economic system.

¹⁵⁷ Ibid.

¹⁵⁸ Ibid.

¹⁵⁹ Hicks (1931), p. 40.

¹⁶⁰ Ibid.; cf. Malone and Rauch (1960), p. 158.

¹⁶¹ Goodwyn (1976), pp. 270-271; cf. Malone and Rauch (1960), p. 161.

¹⁶² Goodwyn (1976), p. 270.

¹⁶³ Malone and Rauch (1960), p. 161; cf. Smith, P. (1984), p. 484.

Their concerns were not misplaced—the rise of Populism coincided with the rise of organized labor in America. The decades that followed the Civil War had brought hard times to the urban working family as well as to the farm family. Fluctuations in the economy—recessions as a devastating part of business cycles—induced urban as well as rural poverty from the 1870s onward. This poverty, in turn, led the working class to begin to organize. Never as radical as their European counterparts, American labor unions used the tactic of choice—the strike—against the railroads in the late 1870s.¹⁶⁴ Among the early American unions were the Knights of Labor, the American Federation of Labor (formerly the Federation of Organized Trades and Labor Unions of the United States and Canada), and the International Working People’s Association. One indication of business’s response to increasing labor organization is the Haymarket riots in Chicago in May, 1886, where striking Knights were faced with armed security personnel, scabs, and Pinkerton detectives.¹⁶⁵ While political parties were selecting their 1892 candidates, a stalled contract renewal and depression in the steel industry led to the violent Homestead strike in Pittsburgh, where strikers ultimately faced the Pennsylvania State Militia after the Pinkertons hired by Henry Clay Frick failed to retake the plant.¹⁶⁶ During this time, as Smith (1984) points out, “radicalism grew more radical and conservatism grew more conservative”—leading to talk of confrontation in terms of Armageddon.¹⁶⁷

The Cleveland Administration began in the midst of economic chaos induced by recession and the failure of several major trusts—the Philadelphia and Reading Railroad, the Union Pacific, the Northern Pacific, and the Erie Railroads, and the National Cordage Company all collapsed. “As trusts and corporations failed, hundreds of thousands of workingmen lost their jobs and, without unemployment compensation of any kind, joined the growing company of the unemployed.”¹⁶⁸ By 1894, this company was numbered at over three million, some of whom were a part of organized labor, but most of whom were not.¹⁶⁹

Two events in 1894 highlight the growing unrest caused by the recession. Both were documented by Ray Stannard Baker, then a young reporter for the *Chicago News-Record*, later to be one of the muckraking journalists of *McClure’s*. The first of these events, the march of Coxey’s Army from Massillon, Ohio, to Washington, DC, was at first treated

¹⁶⁴ Ibid., pp. 114-118; cf. Smith, P. (1984), pp. 213-240, for a full description of the rise of organized labor in this period.

¹⁶⁵ Smith, P. (1984), pp. 241-257; cf. Wiebe (1967), pp. 78-79.

¹⁶⁶ Malone and Rauch (1960), pp. 118-119; cf. Smith, P. (1984), pp. 469-481. A collection of news articles supporting the Homestead strikers and denouncing the use of Pinkertons and militia to suppress the strike from the Populist press can be found in Pollack, N., ed., *The Populist mind*, pp. 447-452.

¹⁶⁷ Smith, P. (1984), p. 483.

¹⁶⁸ Ibid., p. 485.

¹⁶⁹ Smith, P. (1984), p. 508; Malone and Rauch (1960), p. 123.

with skepticism and ridicule.¹⁷⁰ The purpose of the march—and of the others across the nation that followed—was to petition the Congress for some action to relieve the distress of the growing numbers of unemployed. It was assumed that such a ragtag group of unemployed tramps would not be able to complete the journey—that logistics and supplies would be a problem. On the contrary, although the press remained skeptical and reports were written with a slant that would please the business orientation of the newspapers, the army not only grew in number as it proceeded, but was supported with food and other necessities in communities along the route. Baker became convinced as the march progressed that unless the country's condition were indeed as distressed and disorganized as Coxe maintained, such a demonstration would not be possible and would not be so amply supported.¹⁷¹ Upon reaching Washington, Coxe was arrested, but his petition was read in Congress by “a sympathetic Populist legislator.”¹⁷² Congress, however, was not prepared to take any action on the plea presented, although the Populists encouraged the formation of an “industrial army” to be employed on public works projects.¹⁷³ The protests of Coxe's Army and other marchers did not lead to the kind of relief they sought, but “convinced many thoughtful people that industrialism was creating human problems as fast as it was solving mechanical ones.”¹⁷⁴

The second event was the infamous Pullman strike. The Pullman Palace Car Company, in response to the depressed economy, laid off more than half of its work force and reduced the wages of those continuing to work by 25 percent, while making no adjustments in its charges for rent in company housing. When this was protested, the protesters were fired. The American Railway Union called a strike to protest the firings, instructing members not to handle any of the company's cars. This literally shut down rail service, as most trains included Pullman cars.¹⁷⁵

Pullman refused to recognize the Union's request for arbitration, and shut down the plant. Mobs of unemployed workers milled around Chicago. Pullman and the railroad owners appealed to Illinois Governor John Altgeld to send in the militia to break the strike and disburse the mobs, but he refused to either send the militia or to request federal help.¹⁷⁶ “The federal government possessed no means of intervention except force.”¹⁷⁷ President Cleveland, supporting Pullman and the owners, referring to restoration of rail service for

¹⁷⁰ Smith, P. (1984), pp. 508-516; cf. Pollack, N. (1962). P. 48; Weibe (1967), p. 91; and Glad, P. W. (1964) *McKinley, Bryan, and the people*. Philadelphia, PA: J. B. Lippincott Company, p. 88. For a sample of the reaction of the Populist press to the marches of Coxe's and other industrial armies and defense of their position, see Pollack (1967), pp. 342-344.

¹⁷¹ *Ibid.*, pp. 512-513.

¹⁷² *Ibid.*, p. 514.

¹⁷³ *Ibid.*, p. 515.

¹⁷⁴ Malone and Rauch (1960), p. 123.

¹⁷⁵ Smith, P. (1984), pp. 517-535; Malone and Rauch (1960), pp. 119-122.

¹⁷⁶ Malone and Rauch (1960), p. 121.

¹⁷⁷ *Ibid.*

the delivery of mail as a national mandate, authorized the swearing in of 3,600 special federal deputy marshals to maintain order.¹⁷⁸ The strike was finally broken when, on July 8, 1894, a trainload of soldiers fired indiscriminately on a crowd, some of whom were engaged in overturning a Pullman car, killing one and injuring seven others—none of whom were strikers. Baker, a witness to this event, wrote stories of the need and hunger brought on by the labor dispute.¹⁷⁹ Labor leader, Eugene V. Debs, imprisoned for his participation in the strike, was characterized by the conservative press as a blood-thirsty anarchist, and by Midwestern Populists as a hero and an enemy of tyranny.¹⁸⁰

The failure of the hard money policies of the Cleveland Administration to deliver relief from these overwhelming economic woes led to a “resurgence of Republicans in Congress” in the midterm election of 1894.¹⁸¹ Gains for Republican Party not only meant losses for the Democrats, but also for Populists in the West. The violence of strikes, the imprisonment of Debs, the ability of the AF of L to steer a middle course in the Pullman strike, all were symptoms of a “pattern of reaction” that saw “Republicans and conservative goldbug Democrats...[digging] deep into their purses to finance political campaigns aimed at incumbent Populists.”¹⁸² Most Americans were alarmed and fearful of what was portrayed as radical—socialist—political activity. The stage was set for the presidential election of 1896.

Going into the 1896 election, President Cleveland had become “virtually a man without a party.”¹⁸³ He had alienated the Democratic South and the party bosses in the East. Although courageous and honest, he was unable to provide political leadership—“his negative, old-fashioned liberalism was incapable of contending with the problems of private industrial and financial power or of meeting the real needs of human beings.”¹⁸⁴ His only accomplishments—preserving the gold standard and tariff reform—were not enough to get him his party’s call for reelection. Democrats in the Midwest had reluctantly supported him in 1892, but now were determined to find a candidate who would champion the silver cause.¹⁸⁵

The Populists had spent the past four years in a monumental effort to keep their fragile and sometimes volatile coalition together. William Jennings Bryan, stirring orator and spokesman for the common people, had so moved the Democrats with his “cross of gold”

¹⁷⁸ Smith, P. (1984), p. 518; Malone and Rauch (1960), p. 121.

¹⁷⁹ Smith, P. (1984), p. 527.

¹⁸⁰ *Ibid.*, p. 525. For a sample of articles from the Populist press about the Pullman strike and the imprisonment of Debs, see Pollack (1967), pp. 452-458.

¹⁸¹ *Ibid.*, p. 530.

¹⁸² *Ibid.*, p. 532.

¹⁸³ Malone and Rauch (1960), p. 168.

¹⁸⁴ *Ibid.*

¹⁸⁵ Smith, P. (1984), p. 544.

speech that he had become their candidate.¹⁸⁶ The Populists were reluctant to put forward any candidate who might draw votes away from Bryan, and thus handing the election to Republican William McKinley.¹⁸⁷ As a consequence, the Populists also nominated Bryan, but chose their own vice-presidential candidate, Tom Watson of Georgia, as a sop to the Southern Populists who opposed fusion.¹⁸⁸ Fusion with the Democrats gave the Populists what they saw as their only chance to bring a “silver” man who understood and would act for the farmer to the White House. To many observers and participants, however, the silver issue and the urgency attached to creating a viable national presence had so captured the agenda that the Populists self-destructed through fusion, losing their separate identity through being absorbed into the Democratic Party.¹⁸⁹

The Republican candidate, whose nomination had been assured months before the convention, was William McKinley.¹⁹⁰ Having become a tariff specialist in his years in Congress, McKinley’s candidacy appealed to a broad spectrum of conservative elements in American society—“business interests, the goldbugs, the protectionists, the Eastern establishment, and Wall Street.”¹⁹¹ He steadfastly believed that “all other groups in the nation would prosper if business did, and he regarded protective tariffs and a stable monetary system based on gold as essential.”¹⁹²

The campaign of 1896 is considered by many to be among the most exciting and scurrilous ever. Spearheading the Republican campaign was Cleveland industrialist Marcus Hanna, who not only maneuvered McKinley’s nomination but also was a superior political strategist and fund-raiser. Hanna collected more than \$3.5 million to finance the campaign,¹⁹³ which amounted to “ten times the war chest available to Bryan,”¹⁹⁴ and he spent it lavishly and in a well-organized way.¹⁹⁵ While McKinley campaigned from his front porch in Canton, Ohio,¹⁹⁶ Bryan crisscrossed the county, traveling 18,000 miles “in an unprecedented effort to carry his gospel to every voter in the land.”¹⁹⁷ Unfortunately,

¹⁸⁶ Bryan’s challenge to the money interests who wanted to retain the gold standard were: “You shall not press down upon the brow of labor this crown of thorns, you shall not crucify mankind upon a cross of gold.” Quoted in Smith, P. (1984), p. 548; and in Malone and Rauch (1960), p. 171; and Glad (1964), p. 139.

¹⁸⁷ Smith, P. (1984), p. 549.

¹⁸⁸ Malone and Rauch (1960), pp. 171-172; cf. Wiebe (1967), pp. 101-102.

¹⁸⁹ Wiebe (1967), p. 102; cf. Goodwyn (1976), p. 430.

¹⁹⁰ Ibid.

¹⁹¹ Smith, P. (1984), p. 550.

¹⁹² Malone and Rauch (1960), p. 168.

¹⁹³ Ibid., p. 170; cf. Goodwyn (1976), p. 521; and Gould, L. L. (1970) *The Republican search for a national majority*. (pp. 171-187) in Morgan, H. W., ed. *The gilded age*, pp. 185-187.

¹⁹⁴ Smith, P. (1984), p. 551; cf. Goodwyn (1976), p. 525.

¹⁹⁵ Wiebe (1967), p. 104.

¹⁹⁶ Smith, P. (1984), p. 552.

¹⁹⁷ Malone and Rauch (1960), p. 172.

Hanna's party workers preceded Bryan to all of his stops along the line, plastering up posters equating McKinley with prosperity and labeling Bryan as anarchist.¹⁹⁸

Bryan was persuasive and evangelical; but, McKinley was well-organized and well-financed. The Populists had sold out issue purity for a chance to change the direction of the nation. The Democrats were associated in the minds of many with the economic depression that was just then beginning to turn around. The labor vote was considered crucial by both candidates, but labor was "disposed to believe that tariff protection and the gold standard were conducive to general prosperity."¹⁹⁹ This belief led to McKinley's victory—in electoral votes: 271 to 176; and by a popular vote margin of 560,000.²⁰⁰ McKinley's victory assured, as well, that the Republicans retained the majority in both houses of Congress that they had secured in 1894.²⁰¹

Analysis

During the period from the founding to the end of the nineteenth century, an American counterculture provided a strong, countervailing argument against the continued dominance of the mechanical notion of progress in the building of social and governmental structure. This critique was voiced by the Anti-Federalists, was echoed in a somewhat distorted and self-interested manner in the states' rights rhetoric of the ante-bellum South, and gained its greatest coherence in the farmers' protest. Although the "modern" worldview has been shown to have influenced these critical streams of thought, it has placed its mark most obviously on the dominant thinking of the Federalists, the urban North, and the conservative Republican alliance with big business at the century's close. With the defeat of Bryan in 1896, this critique of American industrialism and commercialism was banished to the margins of American thought—"the election of 1896 was the symbolic moment when industrialism began to dominate the nation's development."²⁰²

Bryan was essentially a believer in the general cause of popular democracy and a revivalist preacher for that cause, without having a great interest in, or head for, the specific issues that fueled the political campaign.²⁰³ He saw "political contests as not merely struggles for power but as struggles between good and evil."²⁰⁴ For Bryan, moral evil was closely related to debt, to hard money, and to the gold standard. The incumbent Democrat, Grover Cleveland, had identified the gold standard as "the shield of a civilized

¹⁹⁸ Wiebe (1967), p. 104. According to Goodwyn (1976), this may represent the first, truly well-orchestrated use of advertising in a national political campaign (p. 527).

¹⁹⁹ Malone and Rauch (1960), p. 173.

²⁰⁰ *Ibid.*; cf. Wiebe (1967), p. 104; and Smith, P. (1984), p. 552.

²⁰¹ Smith, P. (1984), p. 552.

²⁰² Morgan, H. W. (1970b), p. 169.

²⁰³ Hofstadter, R. (1989), pp. 241-242.

²⁰⁴ Glad (1964), p. 30.

life...[representing] a fixed scheme of things in which all values, epitomized by the intrinsic worth of their dollars, would never change.”²⁰⁵ With the Republicans taking up the banner of gold, Bryan was forced to emphasize free silver—perhaps the least salient of the common issues of the Populists and Democrats, but the one with the broadest appeal—and by so doing, set up the campaign for failure.²⁰⁶

While Bryan spoke movingly about “the people” and their plight, attempting to bring together the industrial masses, Western miners, and the family farmer, Hanna’s “corporate techniques” spread a message about “the progressive society” that arose from the “symbolic values embedded in the gold standard.”²⁰⁷ The most effective Republican tactic was to build on the fear inspired by two decades of economic ups and downs. While Hanna’s minions worked to build on this fear—suggesting possible loss of jobs to laborers, and to the general public that the current economic prosperity would evaporate if the radicals were to win—McKinley’s official message was permeated with broader, more optimistic themes designed to allay fear—“peace, progress, patriotism, and prosperity.”²⁰⁸

The campaign of 1896 brought two mythic American narratives into a face-to-face confrontation: the myth of rural virtue—embodied in the country boy, William Jennings Bryan—and the Horatio Alger myth of the self-made man—identified with William McKinley.²⁰⁹ During the Gilded Age, this latter myth had gained a wider following as it seemed to most Americans to be substantiated by the great industrial and technological successes they had witnessed. There was a widely-shared conviction that “progress could only be secured by a relentless and competitive struggle, that this would produce material well-being, which in turn would increase human happiness and indeed, if undisturbed, would lead on to the millennium.”²¹⁰ One factor contributing to sustaining this myth was the backing it seemed to have from science, especially from then-current (and largely inaccurate) interpretations of Darwin. To stand in the way of those who were bringing technological progress was seen as blocking the natural evolution of the civilized world.²¹¹ McKinley, for instance:

could not see how justice would result from government intervention in behalf of misfits who had failed to survive the competition of the market. He could still affirm the inevitability of economic harmony if such men would give up their agitation, accept a lesser role in society, and allow

²⁰⁵ Wiebe (1967), p. 99.

²⁰⁶ Hofstadter (1989), p. 245.

²⁰⁷ Goodwyn (1976), p. 521 and p. 524.

²⁰⁸ Ibid., p. 524.

²⁰⁹ Glad (1964), p. 14.

²¹⁰ Warren, K. (1996) *Triumphant capitalism: Henry Clay Frick and the transformation of America*. Pittsburgh, PA: University of Pittsburgh Press, p. 5.

²¹¹ Goldman, E. F. (1956) *Rendezvous with destiny: A history of modern American reform*. Rev. ed. New York: Vintage Books, p. 72.

successful businessmen and industrialists to work for the common good while pursuing their own enlightened self-interest.²¹²

Progress and the maintenance and further advancement of civilization depended, in other words, upon giving the fit—the economically successful—free rein to not only continue to direct their own courses but also to determine what would constitute the common good for all and bring it about through the exercise of their individual activities. Government and lesser individuals should simply stand aside.

Popular science, in this case, was buttressed by religion. The Protestant work ethic, an interweaving of Lockean “rationality and industriousness” with the concept of predestination, so much a part of America’s Puritan tradition, was also, according to Weber (1930), an important contributing factor to the rise of capitalist economic organization.²¹³ Calvinists believed that salvation was a function of grace, not good works—that, before birth, some souls are saved, and some doomed. They also believed in hard work, thrift, and in self-denial leading to the accumulation of material goods. Savings are a necessary condition for capital investment. Material success, particularly when not accompanied by profligate living, was considered to be an outward sign of inward grace. Therefore, successful businessmen and industrialists were marked, by both God and Darwin, as the natural leaders of a progressive, capitalist society. According to Goodwyn (1976),

The American populace was induced to accept as its enduring leadership a corporate elite whose influence was to permeate every state legislature in the land, and the national Congress as well...the collapse of Populism meant, in effect, that the cultural values of the corporate state were politically unassailable in twentieth-century America.²¹⁴

The Populists and other democratic critics of the concentration of wealth and power were, however, neither Luddites nor utopians, both of which they have been accused of being.²¹⁵ They “saw no conflict between popular community control and modern technology...[but rejected] the current means of America’s industrialization—the corporations, the systems of credit and distribution, [and] the alterations in political power.”²¹⁶ Bryan did not oppose industrial advance, per se. “He conceded that a progressive society should welcome industrial innovation, yet he insisted on the necessity of preserving democratic principles as economic conditions changed.”²¹⁷

²¹² Glad (1964), p. 49, emphasis added.

²¹³ Young, J. P. (1996), p. 31; Perdue, W. D. (1986) *Sociological theory: Explanation, paradigm, and ideology*. Palo Alto, CA: Mayfield Publishing Company, pp. 178-180; Weber, M. (1930) *The Protestant ethic and the spirit of capitalism*. New York: Charles Scribner’s Sons; cf. Goldman (1956), pp. 71-72.

²¹⁴ Goodwyn (1976), p. 537.

²¹⁵ Pollack (1962), pp. 3-4.

²¹⁶ Wiebe (1967), p. 75.

²¹⁷ Glad (1964), p. 35.

The Populists believed that technological advances were being manipulated by the industrialists to produce surplus labor, and beyond impoverishing the individual in that manner, “it alienated and degraded him...[through] the destruction of human faculties.”²¹⁸ But, they further argued that “society can overcome alienated man—if only industrialism were to exist in a more democratic framework.”²¹⁹ Technological innovation was inevitably linked by those who controlled it to uneven economic development, urban growth, and enhanced productive capacity.²²⁰ Beyond that, growth in productive capacity was often extended beyond the needs of society for the simple purpose of making the rich richer and more powerful.²²¹ In a period of less than a century, America had moved from what Tocqueville described as a condition of rough material equality to a condition of truly devastating inequality. Indeed, so unbalanced was the distribution of wealth that the Populists in the 1890s could show that 60 percent of America’s wealth was in the hands of only 30,000 Americans.”²²²

Although recording the demeaning characterizations of the Populists created and disseminated by their political rivals, most historians of the period stress the positive, democratic aspects of agrarian thought, and downplay the serious flaws that the movement had. One prominent exception is historian Richard Hofstadter. Although agreeing that Populism was the first political movement to “insist that the federal government has some responsibility for common weal...[and] to attack seriously the problems created by industrialism,” he considered the Populists to be utopians looking back with longing to some “lost agrarian Eden.”²²³ He also points out, and quite correctly, that the agrarian movement was significantly flawed with “provincialism... nativism ...nationalism...and anti-Semitism.”²²⁴ However, these flaws were widespread among all segments of nineteenth-century American society.²²⁵ The Omaha platform included planks that called for restricted immigration and would have denied land ownership to aliens.²²⁶ He also saw the Populists as early-day conspiracy theorists, ascribing to them a “common feeling that farmers and workers were not simply oppressed but oppressed deliberately, consciously, continuously, and with wanton malice by ‘the interests’”—the bankers, the plutocrats, the money power, the goldbugs.²²⁷

²¹⁸ Pollack (1962), p. 12.

²¹⁹ Ibid., p. 31.

²²⁰ Morgan, H. W. (1970a) Toward national unity. (pp. 1-12) in H. W. Morgan, ed. *The gilded age*, p. 5; and, Glad (1964), p. 41.

²²¹ Warren (1996), p. 19.

²²² Pollack (1967), p. 18. Out of a population of roughly 65 million persons, 30,000 amounts to about 1/20 of one percent.

²²³ Hofstadter, R. (1968) The folklore of Populism. (pp. 58-68) in T. Saloutos, ed., *Populism: Reaction or reform?* New York: Holt, Rinehart and Winston, pp. 58-59.

²²⁴ Ibid., p. 59.

²²⁵ Young, J. P. (1996), p. 143.

²²⁶ Malone and Rauch (1960), p. 158.

²²⁷ Hofstadter (1968), p. 61.

Whether they were saints or lunatics, martyrs or madmen, the Populists honestly sought to help people know about what was happening around them—providing something other than the conventional wisdom of the corporate world. As Henry D. Lloyd said in his book, *Wealth Against Commonwealth*, “if they [the people] know, they will care. To help them to know and to care; to stimulate new hatred of evil, new love of the good, new sympathy for the victims of power, and, by enlarging its science, to quicken the old into a new conscience, this compilation of facts has been made.”²²⁸ But, this other voice, these other facts, weren’t compelling enough to prevail.

The Populists, minimally, asked questions that needed answering, especially with regard to currency, direct farm loans, and other agricultural and industrial issues that gave meaning to their movement. Laughed off as buffoons when they posed these questions and offered concrete solutions to the problems they identified, it became apparent only later that both the questions and the Populists’ answers were serious and thoughtful. Their ideas continue to inform not only today’s revival of democratic and communitarian thinking, but also the conservation movement and the Green movement in ecology.²²⁹

Speaking to his own generation, yet informing ours as well, Bryan touched on “what would become the central problem facing Americans in the twentieth century, the problem of advancing and applying democratic principles in a period when social, economic, and technological changes were more rapid and far-reaching than ever before.”²³⁰ As today’s technologies advance exponentially and today’s social and economic systems become more fragmented and confused, social analysts should look to Populism for the inspiration of what it was—not an egalitarian achievement, but an egalitarian attempt—“a moment of democratic promise” that could not withstand the dominance of its own time by the modern worldview and its technological successes.

By the end of the nineteenth century in America, the modern worldview derived from classical physics had overcome challenges to its perspectives. The corporate structure of business organization, the development of specialized expertise, and the rapid pace of technological innovation and change all contributed to the adoption of “progress” as the natural social and economic law. Some radical ideas would have a rebirth in the next century—Populist reforms like the referendum and the notion that centralized government had an obligation to assuage the worst of the ill effects of capitalism—but the ethos of democratic community was subdued when the People’s Party fell to the

²²⁸ Lloyd, H. D. (1967) Epilogue: A transformation of social values. (pp. 467-534) in Pollack (1967) *The Populist mind*, pp. 533-534. Excerpted from Lloyd, H. D. (1894) *Wealth against commonwealth*. New York: Harper & Brothers.

²²⁹ The Omaha platform contained language that inspired the National Park movement: “the land, including all the natural resources of wealth, is the heritage of all of the people and should not be monopolized for speculative purposes,” as cited in Hicks (1931), pp. 420-421.

²³⁰ Glad (1964), p. 209.

Republicans in 1896. Only one perspective on how America should work was allowed to influence government structure—all other views were dismissed as too radical, and even as unpatriotic. Industrial America was seen as traveling a determined path— to play a unique role in the world, and nothing could be allowed to stand in the way or to question the direction or the ends embodied in that role.

In the twentieth century America would come of age as a world power. Government reform would unfold according to the middle-class values of the Progressives, closely allied with the organizational principles of big business. The experience of two world wars and a global depression would confirm the role of expertise in governing. Technology and its government form of choice—technocracy—would convince public administration that there was one right way to govern, and that only experts could discover the truth of that way and apply it.

Chapter 5

The Triumph of Progress and Technology Historical Cases After 1900

This American century has produced more distinctive cases of the triumph of the modern worldview than did the previous two. Technology produces more change in one lifetime in this century than it did in generations in previous centuries. We can hardly begin to keep up with the changes imposed by the proliferation of new and faster ways to do things. Most young American parents today cannot describe to their children what it was like to live without television, CDs, or the microwave oven. Unmanned and manned space flight, computers and the Internet, and the threat of nuclear holocaust are themes in the technological environment in which today's young adults have matured. Stories of political scandal, environmental degradation, and road rage have dominated the headlines and the nightly news since their birth. The influence of the modern worldview and its technological offspring have left us isolated, frustrated, and fragmented—setting the stage for misunderstanding and violence such as we experienced in Oklahoma City in 1995.

Looking back over the twentieth century, it is clear that the idea of progress has been enshrined as the mythic symbol in America, and that technological advances, expertise, and organization have served as the ideal means for that progress to continue. Selecting a representative historical case for this century, beyond the obvious one of the Progressive Era itself, has been difficult. Since it is impossible, in the space of a chapter, to adequately describe more than one additional case, I have chosen to follow a discussion of progressivism with a compound case that includes: the rise of technocracy during and after the Second World War, the turbulent 1960s, and the “postmodern” period from 1980 to the present. In each of these cases, the modern worldview can be shown to have had a profound effect on how we Americans see ourselves, our government, and our society.¹

The Progressive Era: A Blend of Spirit and Science

The turn of the century found Americans in both “an exuberant and an uncertain mood.”² Both “secular and religious versions of...[the] evangelical Protestant hope of realizing the

¹ The specific administrative reform movements of this century have been detailed in Chapter 2 above. The historical cases presented here will consist, therefore, of primarily social and political phenomena of the century.

² Link, A. S. with W. B. Catton and W. M. Leary, Jr. (1963) *American epoch: A history of the United States since the 1890's*. New York: Alfred A. Knopf, p. 16; cf. Hofstadter, R. (1963) The meaning of the progressive movement. (pp. 1-15) in R. Hofstadter, ed., *The progressive movement, 1900-1915*. Englewood Cliffs, NJ: Prentice-Hall, Inc., p. 5.

Kingdom of God on earth” tied a sense of united purpose to a broad range of activities.³ America had established herself as a world power with the successful conclusion of the Spanish-American War, but this move from a foreign policy of isolation to one of imperialism was unsettling at the same time as it inspired patriotism. Anxiety was evident at both a social and individual level. Memories of the economic swings of the late nineteenth century, a great disparity of wealth, and low wages and poor working conditions left many Americans uncertain. Breakdown of the family and drug and alcohol abuse characterized the period.⁴ One indicator of this national angst is the growth of the life insurance industry. During the fifty-year period from 1860 to 1910, per capita life insurance protection rose from \$5.47 to \$179.14.⁵

Much of the optimism and hope had as their source the spectacular increases in productivity and material quality of life brought about by invention and innovation in the 150 years since the American founding. It was easy to infuse the idea of progress with religious fervor when the ability to produce goods had taken such remarkable strides. One man working for one day could produce ten times the iron or eight times the coal his counterpart produced in 1781.⁶ He could produce 100 times the number of finished nails or 40 times the number of shoes.⁷ Basic and consumer goods were plentiful thanks to innovation and technological advances.

One reason for these advances in productivity was the move away from individual craftsmanship and toward standardization and systematic organization of work processes. Schlereth (1991) recounts some of the steps leading to mass production:

Important developments in the manufacturing of firearms (the interchangeability of parts), in tool-and-die companies (precision jigs and gauges), in grain milling and iron foundrying (the handling of materials by conveyor belts), in can making (special or single-purpose machinery), in steel production (time-and-motion efficiency studies), in meat packing (slaughterhouse “disassembly” lines), and in bicycle manufacturing (sheet-metal stamping and electric-resistance welding) preceded the Ford Motor Company’s introduction of a chain-driven assembly line in its Highland Park plant in 1913-1914.⁸

³ Griffen, C. (1970) The progressive ethos. (pp. 120-149) in S. Coben and L. Ratner, eds., *The development of an American culture*. 1st ed. Englewood Cliffs, NJ: Prentice-Hall, Inc., p. 120.

⁴ Smith, P. (1984) *The rise of industrial America: A people’s history of the post-reconstruction era*. (Vol. 6) New York: Penguin Books, pp. 911-914.

⁵ Hofstadter, R. (1955) *The age of reform: From Bryan to F. D. R.* New York: Alfred A. Knopf, p. 219.

⁶ Cashman, S. D. (1988) *America in the age of the titans: The progressive era and World War I*. New York: New York University Press, p. 23.

⁷ Ibid.

⁸ Schlereth, T. J. (1991) *Victorian America: Transformations in everyday life, 1876-1915*. New York: HarperCollins Publishers, p. 57.

Middle Class Professionals and Consumerism

The progressive movement was a movement of the growing urban middle class. This new middle class was defined less by economic status than by other factors, particularly by its association with business or with the professions.⁹ With extreme farm unrest subsiding, “leadership in the revolt against the status quo passed...to the cities and small towns,” and was drawn from “small businessmen and bankers, prosperous farmers, editors, clergymen, and other professional groups.”¹⁰ Improvements in communication technology over the past century allowed a greater sense of connection among these professionals, and the rapidly industrializing and urbanizing of America presented a variety of challenges that they were prepared to face. Teachers, engineers, social workers, managers, and other professionals claimed the distinctions that inhere in having specialized education and skills, and put those skills to work in service of their local communities to meet these challenges. As they experienced success locally and as they developed professional networks, they began to look beyond their cities for new challenges to overcome.¹¹

The influence of professionalization can be seen not only in the academic, business, and governmental aspects of American life but also in more mundane aspects such as sports, social work, philanthropy, residential design, and homemaking.¹² During this period, for example, “athletic events like track and field and ball games, such as football and baseball, became professionalized”¹³ to the extent that “some men devoted nearly all their time to them...[in settings that were] nationally organized, thoroughly quantified, and marked by an unprecedented mania for the modern sports record.”¹⁴ Competitive athletics had long been a part of American life. Amateurs engaged in physical training at the YMCA or participated in collegiate contests of all kinds. Golf, polo, hiking, and bicycling were common in the United States.¹⁵ But, where physical exercise had once been an integral part of work, now it was becoming something to engage in purposefully, both as a participant and as a spectator—leading inexorably to today’s mania for jogging, exercise clubs, and the Super Bowl.

⁹ Wiebe, R. H. (1967) *The search for order, 1877-1920*. New York: Hill and Wang, p. 112.

¹⁰ Link et al. (1963), p. 69; p. 68.

¹¹ Ibid., pp. 112-113.

¹² Schlereth, T. J. (1991), p. 124, and p. 223; Moore, R. L. (1974) Directions of thought in progressive America. (pp. 35-53) in L. L. Gould, ed., *The Progressive era*. Syracuse, NY: Syracuse University Press, p. 38; Ekirch, A. A., Jr. (1974) *Progressivism in America: A Study of the era from Theodore Roosevelt to Woodrow Wilson*. New York: New Viewpoints, pp. 69-70; Wiebe, R. (1967), p. 150 and pp. 168-172; and Smith, P. (1985) *America enters the world: A people’s history of the progressive era and World War I*. (Vol. 7) New York: Penguin Books, pp. 381-384.

¹³ Schlereth, T. J. (1991), p. 223.

¹⁴ Guttman, A. (1986) *Sports spectators*. New York: Columbia University Press, p. 83.

¹⁵ Smith, P. (1984), pp. 841-852.

The prime example of social work in this period is the settlement house. The settlement house movement arose partly as a need to provide islands of safety and uplift for “workers and immigrants in an otherwise morally dangerous city environment” was recognized.¹⁶ The first American settlement house was organized in New York in the 1880s. By 1910, the number across the country had risen to 400.¹⁷ Early neighborhood settlement houses provided “a constructive outlet” for the “humanitarian reform impulses” of the middle and upper classes in cities impacted by the inrush of European immigration.¹⁸ Not supported by tax dollars or churches¹⁹, these projects were staffed by idealistic, often college-educated young men and women, many of them trained teachers.²⁰

Settlement houses offered a wide range of social, educational, legal, and medical services, including “lecture series, amateur theatricals, musicals, vocational classes, kindergartens, and nursery schools for working mothers.”²¹ Social clubs, college extension courses, and a free clinic were a part of Hull House in Chicago.²² The deterioration of the inner-city neighborhoods in which settlements were located inevitably involved them in issues of city planning, housing, and public health. As the settlements moved from their early, more nurturing role to one that involved such technical areas, specialization and the professionalization of social work evolved.²³

Philanthropy moved from smallish private donations of the wealthy to selected and specific recipients of charity to organized disbursement of many millions donated by industrialists like Carnegie and Rockefeller through foundations staffed by

¹⁶ Moore, R. L. (1974), p. 38.

¹⁷ Stivers, C. (1995) Settlement women and bureau men: Constructing a usable past for public administration. *Public Administration Review*, 55 (6), pp. 522-529, p. 526.; cf. Ekirch, A. A., Jr. (1974), p. 76.

¹⁸ Ekirch, A. A., Jr. (1974), p. 73.

¹⁹ Ibid., p. 73 and p. 76. Jane Addams' Hull House, for example, was supported by her own money, gifts of close friends, and by subscriptions of the wealthy industrialists of Chicago. See, Sklar, K. K. (1990) Who funded Hull House? (pp. 94-115) in K. D. McCarthy, ed., *Lady bountiful revisited: Women, philanthropy, and power*. New Brunswick, NJ: Rutgers University Press.

²⁰ Ekirch, A. A., Jr. (1974), p. 73; cf. Scott, A. F. (1990) Women's voluntary associations: From charity to reform. (pp. 35-54) in McCarthy, K. D., ed. *Lady bountiful*, p. 45.

²¹ Ekirch, A. A., Jr. (1974), p. 76.

²² Landon, J. W. (1986) *The development of social welfare*. New York: Human Sciences Press, Inc., pp. 97-99.

²³ Initially, settlement house residents (staff), although educated, were “trained” in their social work roles through a process of apprenticeship. Eventually, as the needs and programs offered in the neighborhoods became more complex and technical, more specific professional training seemed necessary. Training programs in universities began in a small way with weekly lectures over a six-month period. Later, some universities, particularly those located in cities like Chicago, Philadelphia, and Boston, established schools of social work in the 1910s. Graduate programs in social work became prominent in the 1930s. See, Brown, E. B. (1976) *Social work as a profession*. New York: Arno Press.

professionals.²⁴ Characteristic of an age dominated by corporations and technology, philanthropy became “scientific and businesslike.”²⁵ Foundations, like the Russell Sage Foundation, also supported research into the conditions of poverty in the cities, and results of their research were published in social work journals, such as *Charities*.²⁶ Exposé articles by Jacob Riis and Lincoln Steffens, augmented by “scientific” foundation reports like the Pittsburgh Survey, served as one means to enlighten middle America about the extent of poverty in its midst.

The turn of the century was a period of architectural and design revolution—one that reflects a transformation of the middle class. Among the reasons for this transformation are: “a changing attitude by the middle-class toward industrialism, the impact of the home economics movement, a renewed search for authentic American design, and a ‘scientific’ concern for a more efficient, ordered, and germ-free residential space.”²⁷ This revolution is perhaps best exemplified by the work of Frank Lloyd Wright.

Wright and his followers led residential design away from the Victorian fussiness and excessive detail that characterized the gilded age towards an understanding of the home characterized by simplicity and repose.²⁸ Wright’s houses were servant-less houses, designed with ease of care and an “air of informality, of easy movement from one area and activity to another, houses that encourage...new kinds of intrafamily relationships.”²⁹ This new design perspective matched house design with natural terrain, called for furnishings that harmonized with the house design, and opened up the public areas of the house.³⁰ Where Victorian design could be said to reflect a “culture of character,” displaying photographs and memorabilia and artifacts from the family past in a formal and uncomfortable parlor, this new, more utilitarian and free design perspective reflects the outcome of a basic reorientation of the values of the middle class.³¹ As Schlereth (1991) points out, “the transformation of the parlor into the living room suggests a residential context for such a shift in the collective psyche.”³² Designers were aided in promoting this shift by the editorial comment of the *Ladies’ Home Journal* that tirelessly campaigned against the parlor and its plush “three-piece” set and for simplicity and good taste in home furnishings.³³ Bare floors and built-in cupboards improved both hygiene and convenience.³⁴

²⁴ Ibid., pp. 69-70.

²⁵ Ibid., p. 69.

²⁶ Ibid., p. 72.

²⁷ Schlereth, T. J. (1991), p. 124.

²⁸ Smith, P. (1985), pp. 899-902.

²⁹ Ibid., pp. 901-902.

³⁰ Ibid., p. 901.

³¹ Schlereth, T. J. (1991), p. 124.

³² Ibid.

³³ Sullivan, M. (1996) *Our times: America at the birth of the twentieth century*. D. Rather, ed., New York: Scribner, pp. 75-77.

³⁴ Ibid., p. 77.

This shift is further demonstrated in the way inventions and innovations changed American patterns of communication, transportation, and living, and in the way products were marketed to the progressive householder. The first of these was electrical energy that revolutionized housework through the labor-saving appliances that it powered.³⁵ City households were the first to take advantage of these devices—“vacuum cleaners, washing machines, refrigerators, electrical stoves and heaters”—for which American middle class families were paying \$175,000,000 per year by 1917.³⁶ Thomas Edison, the symbolic genius of electricity, brought safer light and heat, recorded music, and motion pictures to homes and communities. He also developed preliminary technology that later made the telephone possible.³⁷

Another revolutionary development was the modern corporate research laboratory, shifting “the frontier of scientific investigation” away from the universities.³⁸ Companies like General Electric, American Telephone & Telegraph, and Dupont gathered inventors and researchers “into a single laboratory to work together on complex problems,” along the pattern Edison had initiated.³⁹ From such corporate laboratories came advances, like the switchboard, that made the telephone, for example, a common feature of the American home.

The telephone and the automobile changed our basic patterns of communication and city and residential planning. With the telephone, instant communication became possible—from the home to any of a variety of places. “Americans owned 1.3 million phones in 1900, a figure that grew to 13.3 million in 1920,”⁴⁰ and by 1925, there was almost universal access to the telephone with one instrument for every seven Americans.⁴¹

With the automobile, especially after Ford began mass-producing the affordable Model-T, a person could live further away from work, leading to the beginnings of suburban development—a project completed in the 1950s with the Interstate highway. “Americans did not invent the automobile, nor have any serious share in the improvement of it, [but they] made the automobile available to the average man.”⁴² One motive ascribed to Henry Ford when insisted on the simple design of the Model-T and he began paying his employees more than twice the going wage, was that he wanted his employees, and by implication other working class families, to be able to afford to buy automobiles.⁴³ His

³⁵ Ibid., p. 93.

³⁶ Smith, P. (1985), p. 856; cf. Sullivan, M. (1996), p. 93.

³⁷ Smith, P. (1985), p. 857.

³⁸ Ibid., p. 862.

³⁹ Ibid.

⁴⁰ Schlereth, T. J. (1991), p. 190.

⁴¹ Sullivan, M. (1996), p. 56.

⁴² Sullivan, M. (1996), p. 108.

⁴³ Ibid., pp. 341-342; cf. Cashman, S. D. (1988), p. 279.

strategy was sound; by 1920, “there were more than 8,000,000 passenger cars registered in the United States, far more than the rest of the world combined.”⁴⁴ The automobile reinforced the notion of American individual freedom; it expanded a sense of empowerment and became a potent symbol of material success, especially for the young.⁴⁵ The automobile may have been to the youth of the progressive era what the personal computer is to the youth of today—“mysterious to their elders, [while] it yielded up all its mysteries to its young devotees.”⁴⁶

Mass production of these exciting products required modern consumer marketing mechanisms to get them in the public’s eye and into the ordinary home. One of these mechanisms was advertising. Journals, magazines, and newspapers had proliferated to the extent that by 1905, “there were twenty [monthly] magazines, most selling at ten or fifteen cents, with a combined circulation of 5.5 million” and daily newspaper circulation had “increased sevenfold.”⁴⁷ These media became vehicles for advertising whose purpose, according to Cherington (1913), “was to increase consumerism by undermining the ‘savings instinct’.”⁴⁸ Major department stores from Wanamaker’s in Philadelphia to Marshall Field in Chicago advertised in daily newspapers to the mutual benefit of both enterprises.⁴⁹

Advertising created two ideals in an age where toleration of deviation was declining: “the machine and the model,” and cleverly combined the two in marketing medicine.⁵⁰ Drawings of “the human ‘machine,’ with its familiar assortment of gears, pipes, tubes, and levers (nervous system wires came with electricity), offered the public a convenient image of internal efficiency and precision—‘runs like a machine’ became synonymous with good health.”⁵¹

Another shift in American store marketing experienced by the progressive householder was the advent of national brand advertising and packaging—“the trend away from displaying generic goods in barrels, jars, and sacks to preparing individual consumer units of wrappers, packets, cartons, and containers.”⁵² Neighborhood merchants also saw their business depleted by the proliferation national chains and department stores.⁵³ Department stores became “meccas of consumerism and materialism,” and their owners

⁴⁴ Smith, P. (1985), p. 872.

⁴⁵ Ibid., p. 873.

⁴⁶ Ibid.

⁴⁷ Schlereth, T. J. (1991), p. 160; and p. 177.

⁴⁸ Cherington, P. (1913) *Advertising as a business*. New York: Doubleday, Page & Co., p. 93.

⁴⁹ Boorstin, D. J. (1974) *The Americans: The democratic experience*. New York: Vintage Books, pp. 106-107.

⁵⁰ Schlereth, T. J. (1991), p. 165.

⁵¹ Ibid.

⁵² Ibid., p. 145.

⁵³ Boorstin, D. J. (1974), pp. 109-110.

developed the display of merchandise to a fine art in order to intensify the shopper's desire for things he or she hadn't intended to buy.⁵⁴ Department stores brought a wide variety of disparate goods to a central location in the town, and their "grandeur gave dignity, importance, and publicity to the acts of shopping and buying—new communal acts in a new America."⁵⁵ Boorstin (1974) argues that the department store was pivotal in developing a "democracy of consumers," where "anyone could enter a department store, see and handle the most elegant furnishings."⁵⁶

Paradoxes of Progressivism

Themes of improving efficiency—of progress—thus pervaded the progressives' daily experience—from handling social problems to running a household to leisure activities. Specialization and professional training were on the rise. The theoretical bases for their reform initiatives were drawn principally from "contemporary developments in the sciences of man, society, and nature [rather than] from religious sources."⁵⁷ Science and engineering professionals were increasingly called upon to become "advisors to government, private interest groups, and the nation at large on the practical implications of their subjects...[particularly on] the efficient use of resources."⁵⁸ Unlike their predecessors, the Populists and preachers of the Social Gospel, the progressives' "primary commitment was to efficiency, not to the extension of democracy."⁵⁹

As the pace of American life was quickened by the concern for efficiency, however, and this increased the level of anxiety, many sought the services of yet another group of experts—alienists (psychiatrists) whose Freudian analysis and therapy were then becoming popular. This anxiety was attributed to a number of sources:

too much strong coffee, too many cigarettes and/or cigars, too much liquor, cocaine, marijuana; too many sedatives and sleeping pills; the stress and strain of getting ahead; the loss of religious belief among the intellectual class and the general decline in the certainty of older religious convictions in the population as a whole.⁶⁰

Depression alternated with "a sense of living in a peculiarly hopeful time when brotherhood, justice, and righteousness were about to be realized to a degree never

⁵⁴ Schlereth, T. J. (1991), p. 148.

⁵⁵ Boorstin (1974), p. 101.

⁵⁶ Ibid., p. 107.

⁵⁷ Griffen, C. (1970), p. 139.

⁵⁸ Ibid.

⁵⁹ Ibid.

⁶⁰ Smith, P. (1985), p. 1006.

thought possible before,” creating a characteristic American schizophrenia.⁶¹ Psychiatry was seen as science coming to the rescue where religion was powerless.⁶²

American women were especially susceptible to the anxiety of the times. The suffrage movement, in many ways an integral part of the progressive reform movement, did not yield the benefits of equal partnership and equal citizenship, although it eventually succeeded in getting women the vote. Middle class women’s roles were changing dramatically, a transformation that continues today. The perceived need to help women adjust to these changes, and to bring a more scientific approach to marriage and child-rearing, spawned a new class of experts whose “help” can be shown to have hindered rather than helped women in this transformation.⁶³

The progressives idealized the home and the family—they were preoccupied with the home as a refuge for men from the pressures of the business world. Yet, they “compartmentaliz[ed]...work, home life and education,” and by withdrawing into the privacy of the home, isolated children from the experiences of ordinary life.⁶⁴ Reflecting their concern for children in general, progressive reformers devoted attention to child labor laws and to regulation of working class women’s employment. The social justice movement of this period worked tirelessly to establish a minimum age for workers, succeeding by 1914 in all states but one to accomplish this, and, in many cases, to get legislation prohibiting workers between ages 14 and 16 from working at night or in dangerous occupations.⁶⁵ This movement also promoted a limit to hours of work and a minimum wage for female employees.⁶⁶ “Almost without exception the progressive reformers took ideal qualities associated with the home...and held them up as a standard for the wider world.”⁶⁷

Themes both old and new existed within the progressive ethos. The new commitment to science did not entirely overcome evangelical notions dating back to the Puritans. The American understanding of progress included both reaping the benefits of technology and embodying the “City of God” as an example to the world. A concern with efficiency and expertise coincided with an almost religious need to cleanse American politics of its corrupt practices, American cities of their crime and slums, and the American home of its old-fashioned clutter and inefficient labor. The paradox of progressivism is also evident in the political action of the period.

⁶¹ Griffen, C. (1970), p. 125.

⁶² Smith, P. (1985), p. 1007.

⁶³ For a complete description of the effects of the application of expertise to women and their roles, see: Ehrenreich, B. and D. English (1978) *For her own good*. New York: Doubleday-Anchor.

⁶⁴ Griffen, C. (1970), p. 131.

⁶⁵ Link, et al. (1963), pp. 70-71.

⁶⁶ *Ibid.*, pp. 71-72.

⁶⁷ *Ibid.*, p. 132.

Politics in the Progressive Era

Within a few years of the election of 1896, “former Populists themselves were losing sight of their party’s original, fundamental reform demand[s].”⁶⁸ They saw insurgents in both the Democratic and Republican parties espouse their political agenda in the name of progressivism, while suppressing the economic reforms central to the farmers’ revolt.⁶⁹ The Populist two-tiered economic model was built on the premise that small independent producers could control some segments of the economy and should be left to do so, but that other segments, particularly transportation, finance, and communication—where there were “large concentrations that could not be democratically controlled through market mechanisms,” should fall to public ownership.⁷⁰ The progressives, although adamant about “trust-busting” and regulating big business, could not accept the idea of public ownership.⁷¹

The progressive political movement, unlike the more regional Populism, was a national movement. It affected all levels of government—national, state, and local. The ideas and institutional changes associated with the progressives remain at the heart of the modern American state. However, despite its visibility and its appearance of cohesion, progressivism “was subject to considerable ideological debate and political infighting.”⁷² Progressives were reasonably united when it came to identifying problems, but differed in opinion with regard to how to solve them. The primary distinction between groups can be found in the issues of how to control the corporations and to what extent the national government should be involved in aiding workers and farmers.⁷³

If the “Progressive Era” encompasses the period of 1900-1920, then self-acknowledged progressives only dominated national politics for the waning years of the period—beginning with the election of 1912. After the McKinley’s victory in 1896, conservative Republicans dominated the Congress and held the White House. McKinley had hoped to base his presidency on political isolation and domestic economic growth. However, events overtook him, and his administration embarked on America’s flirtation with imperialism, beginning with the Spanish-American War and the annexation of Hawaii.⁷⁴

⁶⁸ Clanton, G. (1991) *Populism: The humane preference in America, 1890-1900*. Boston, MA: Twayne Publishers, p. 162.

⁶⁹ Ibid.

⁷⁰ Young, J. P. (1996) *Reconsidering American liberalism: The troubled odyssey of the liberal idea*. Boulder, CO: Westview Press, p. 146.

⁷¹ Caine, S. P. (1974) The origins of progressivism. (pp. 11-34) in L. L. Gould, ed., *The Progressive era*. Syracuse, NY: Syracuse University Press, p. 31.

⁷² Young, J. P. (1996), p. 149.

⁷³ Link, et al. (1963), p. 69.

⁷⁴ Malone, D. and B. Rauch (1960) *The new nation: 1865-1917*. New York: Appleton-Century-Crofts, p. 195.

In the last days of the Harrison Administration, American sugar growers in Hawaii instigated a revolt against Hawaiian Queen Liliuokalani and petitioned the United States to annex the islands.⁷⁵ The American Minister to Hawaii recognized the growers' provisional government and the matter was brought to the Senate. This was the situation when Cleveland took office in 1893. Cleveland withdrew the annexation treaty, and the growers proclaimed Hawaii as an independent republic. In 1894, Cleveland recognized that status. When McKinley took office, he was persuaded that Hawaii would be an ideal base of operations for an American presence in the Pacific, and he acceded to the wishes of the republic and forwarded a new treaty of annexation to the Senate in the spring of 1897.⁷⁶ This action revived the notion of Manifest Destiny that had previously been associated with the annexation of Texas and the Mexican War. This notion embodied the worst of the progressive era's paternalistic and racist assumptions—that it had become America's duty to bring progress and enlightenment to “lower peoples.”⁷⁷ Many in America saw a “young and vigorous and rising” United States overcoming an “old and tired and declining” Europe to bring the benefits of civilization to the barbarian primitives of the world.⁷⁸

In 1895, the Cuban people rebelled against Spanish rule of their island. The rebels purposely destroyed American property in order to invite American intervention.⁷⁹ Newspaper publishers William Randolph Hearst and Joseph Pulitzer, in a circulation war of their own, got behind the idea of a war of liberation for Cuba—an idea that was seconded by such militant political leaders as Theodore Roosevelt and Albert Beveridge.⁸⁰ Monroe Doctrine notwithstanding, neither Cleveland nor McKinley wanted the United States to get involved. Both presidents had offered to mediate the dispute, an offer that Spain rejected. Anticipating a collapse of Spanish authority in Cuba, American consul general Fitzhugh Lee—an advocate of America's entry into the war—ordered the U. S. battleship *Maine* into Havana harbor.⁸¹ McKinley's moderation in the face of growing pressure for American involvement was derided by the Spanish Minister to the United States, Enrique Dupuy de Lôme, in a private letter, stolen by the Cubans and subsequently published in Hearst's *New York Journal*.⁸² Pressure on McKinley to act increased.

That same month, an explosion, its cause still undetermined, sank the *Maine*, killing 260 out of the ship's complement of 350 officers and men.⁸³ The headline “Remember the

⁷⁵ Ibid., p. 197.

⁷⁶ Ibid., pp. 197-198.

⁷⁷ Ekirch, A. A., Jr. (1974), p. 188.

⁷⁸ Wiebe, R. H. (1967), p. 226.

⁷⁹ Ibid., pp. 200-201.

⁸⁰ Ibid., p201; cf. Smith, P. (1984), pp. 865-866.

⁸¹ Smith, P. (1984), p. 866.

⁸² Malone and Rauch (1960), p. 201.

⁸³ Smith, P. (1984), p. 867; cf. Malone and Rauch (1960), pp. 201-202.

Maine!” stirred the nation and the Congress. An investigation into the cause of the explosion decided, upon “somewhat unsubstantiated evidence...that the cause was external.”⁸⁴ In the yellow press, the destruction of the *Maine* was touted as an act of aggression by Spain, and even more strident demands for war were made. Although Spain made commitments to an end to repression and delivered to McKinley the terms for an armistice in Cuba on April 10, 1898, these steps came too late. McKinley had already, reluctantly, sent a war message to a Congress that was eager to act.⁸⁵

The war was over in a brief three months. The United States didn’t lose a battle. It was, as John Jay wrote to Theodore Roosevelt, “a splendid little war: begun with the highest motives, carried on with magnificent intelligence and spirit, favor by that Fortune which loves the brave.”⁸⁶ The peace treaty brought Cuba, Puerto Rico, and the Philippines under the cloak of American “protection.”⁸⁷ The war was a triumph for profit-oriented American financiers and merchants—opening, as it did, Latin and South America and the Far East to American mineral extraction operations and plantations and as markets for American goods.⁸⁸

It was also a triumph for American journalism. The war, “was nowhere fought more brilliantly than in the columns of the newspapers, and it was covered by a battery of reporters numerous enough and well enough equipped to be used in emergency as military reinforcements.”⁸⁹ No previous war had been “so enjoyable for civilians to read about.”⁹⁰ News coverage of the Spanish-American War gave Americans at home a sense of being there not equaled until the present generation watched the Gulf War unfold in 1992 on CNN.

The war also put the national spotlight on a young man who would, more than any other, come to symbolize the progressive era—Theodore Roosevelt. Roosevelt left his post as assistant secretary of the navy to serve in a privately-organized regiment of “Rough Riders” under the command of Leonard Wood. While other units, most prominently the predominantly black Ninth and Tenth Cavalry units, “saved the fight,” Roosevelt’s leading of the charge at San Juan Hill captured the imagination of the press and the public.⁹¹ The reporters “made this victory into a personal exploit of vast dimensions” for Roosevelt.⁹² This publicity served to propel Roosevelt as a “reform” candidate into the office of Governor of New York, and, from there, despite the serious misgivings of Mark

⁸⁴ Smith, P. (1984), p. 868.

⁸⁵ Malone and Rauch (1960), p. 202; Smith, P. (1984), pp. 869-870.

⁸⁶ Quoted in Smith, P. (1984), p. 881; cf. Hofstadter, R. (1955), p. 164.

⁸⁷ Malone and Rauch (1960), pp. 209-211.

⁸⁸ Hofstadter, R. (1955), pp. 229-232.

⁸⁹ *Ibid.*, p. 189.

⁹⁰ Malone and Rauch (1960), p. 204.

⁹¹ Smith, P. (1984), pp.875-877; p. 877.

⁹² Malone and Rauch (1960), p. 204.

Hanna, into the vice-presidential slot in 1900.⁹³ The assassination of President McKinley on September 6, 1901, sent the Rough Rider to the White House.⁹⁴

Despite his symbolic association with progressivism, it would be a mistake to forget that Roosevelt was at heart a conservative Republican—“until 1902 his political record was one of unrelieved, but upright, conservatism: reform in the interests of honesty and efficiency.”⁹⁵ His record as police commissioner of New York City and as governor of New York demonstrated his hatred of corruption. He was a “champion of modest reforms,” but had no “general or comprehensive view of radical social change.”⁹⁶ He was not as pro-business as McKinley had been, but still believed that the growth of business—concentration—was natural and not necessarily bad. During his almost two terms in the White House his actions against big business earned him the sobriquet “trustbuster,” but he equated big unions with the trusts, and sought regulation of both with the kind of vigor that characterized his whole persona. He realized that it was impossible to restore an America of the past by destroying combinations, and that control of the economic power of combinations was government’s proper role. In his own words, Roosevelt argued that “government must now interfere to protect labor, to subordinate the big corporation to the public welfare, and to shackle cunning and fraud exactly as centuries before it had to interfere to shackle the physical force which does wrong by violence.”⁹⁷ The key was that government be a powerful, but neutral, arbiter among interests, subordinating all those interests to the common good.⁹⁸

Upon assuming office, Roosevelt had “three interrelated goals: to establish himself as the pre-eminent figure in the Republican party, to elevate the executive as the dominant force in national government, and to make that government the most important single influence in national affairs.”⁹⁹ Toward the first end, he arranged to meet with Hanna, the party’s aging power broker and confidante of other leaders of business, but managed not to commit himself to more than lukewarm assurances of continuing McKinley’s policies. Hanna publicly acknowledged his confidence that Roosevelt was up to the tasks thrust upon him, and the conservative press followed suit.¹⁰⁰ Roosevelt recognized the existing power structure of his party, and by “conceding the smaller points in order to win the

⁹³ Hanna is reported to have said to a friend, “Don’t any of you realize there’s only one life between this madman and the White House?” Quoted in Smith, P. (1984), p. 899 and Malone and Rauch (1960), p. 215.

⁹⁴ Malone and Rauch (1960), p. 215; cf. Smith, P. (1984), p. 887.

⁹⁵ Cashman, S. D. (1988), p. 58; cf. Hofstadter, R. (1955), p. 13.

⁹⁶ Smith, P. (1985), p. 11.

⁹⁷ T. Roosevelt, in his *Autobiography*, as quoted in Hofstadter, R. (1989) *The American political tradition and the men who made it*. Rev. ed. New York: Vintage Books, p. 293.

⁹⁸ Hofstadter (1955), pp. 232-233.

⁹⁹ Wiebe, R. H. (1967), p. 190.

¹⁰⁰ Sullivan, M. (1996), pp. 202-203.

important objectives,” he demonstrated that he was both a political realist and a master political strategist.¹⁰¹

Toward the second end, Roosevelt built himself an administrative apparatus loyal to the executive, including such public administrators as Gifford Pinchot, staffed by scientific experts to whom the president was content to delegate a wide swath of authority.¹⁰² Roosevelt used the presidency to “spotlight his favorite issues and force Congressional action”—issues like conservation. Increasingly, the executive branch either drafted or cleared important bills, such as “those to outlaw rebating by the railroads, regulate the food and drug industries, and revise the Sherman Antitrust Act.”¹⁰³ He took his role as a initiator of legislation seriously, and reforms that had his backing rarely failed to be enacted.

In the opinion of many, it was this Roosevelt, rather than his illustrious kinsman Franklin, who revitalized the office of president and established the president as the spokesperson for all of the people and the common interest.¹⁰⁴ Theodore Roosevelt saw the president as a steward for the people—his understanding of the limits on executive power were that “the President is free to act in the public interest in any way he sees fit as long as there is no precise legal prohibition of such action. What the Constitution and the laws do not prohibit, they allow.”¹⁰⁵ Theodore Roosevelt tested the traditional limits placed on the power of the president, and, with strong and enthusiastic popular support, he stretched the job to fit his view of it. “The more vigorously Roosevelt asserted leadership, the more support he won.”¹⁰⁶

He worked toward the third of his initial objectives by using the office of president as a “bully pulpit” for the purpose of getting popular support for his legislative goals—going over the heads of the Congressional leadership, and frustrating the Republican party state and local machines with regard to appointments.¹⁰⁷ A strong supporter of merit principles in civil service, he restored many federal positions that McKinley had declassified to classified status, and refused to follow the party line of appointing unqualified, but loyal, persons to unclassified positions.¹⁰⁸

¹⁰¹ Link, et al. (1936), p. 94.

¹⁰² Wiebe, R. H. (1967), pp. 190-191.

¹⁰³ Ibid., p. 191.

¹⁰⁴ Link, et al. (1963), p. 95.

¹⁰⁵ Nichols, D. K. (1994) *The myth of the modern presidency*. University Park, PA: The Pennsylvania State University Press, p. 20, emphasis added; cf. Ekirch, A. A., Jr. (1974), p. 149; and Malone and Rauch (1960), p. 217.

¹⁰⁶ Link, et al. (1963), p. 99.

¹⁰⁷ Cashman, S. D. (1988), p. 59; cf. Link, et al. (1963), p. 98.

¹⁰⁸ Sageser, A. B. (1935) *The first two decades of the Pendleton Act: A study of Civil Service reform*. University Studies Series (Vols. xxxiv - xxxv). Omaha, NE: University of Nebraska Press, pp. 224-240; cf. Cashman, S. D. (1988), p. 59.

Roosevelt had the opportunity, early in his first administration, to show the kind of balanced reform leadership he intended to provide in two cases with national implications—the anthracite coal strike and the anti-trust prosecution of the Northern Securities Company. Northern Securities was a holding company that controlled the Northern Pacific and Great Northern railroads and was looking to control all of the railroads in the western United States. The Northern Securities merger was another brainchild of J. P. Morgan who had recently formed the United States Steel Corporation, a combination of awesome proportions—one that combined holdings in iron ore, coal, and transportation facilities, in addition to steel mills and other production facilities.¹⁰⁹ Morgan’s plan to create a monopoly on western transportation, coming less than a year after the U. S. Steel deal, proved impossible for Roosevelt to ignore. The last prosecution under the Sherman Anti-trust Act had been in 1895, and the government had lost. Corporations had taken that as a sign that government could not effectively regulate their activities. The government’s case against Northern Securities, however, was upheld in the Supreme Court when a 5 to 4 majority held that the holding company was an unlawful combination.¹¹⁰

The newly-formed United Mine Workers (UMW), under the leadership of John Mitchell, called a strike in the spring of 1902 taking 147,000 anthracite coal miners out of the mines and shutting down production nationwide.¹¹¹ The dispute dragged out over the summer, existing supplies of coal were exhausted, and coal prices had risen from their normal five dollars a ton to thirty dollars a ton by the end of September. On October 1, the president invited the union officials and the mine operators to meet with him in the White House. He also had a plan drawn up for a government takeover of the minefields. The UMW welcomed the intervention of the president, as this gave standing to the union. The operators considered Roosevelt a traitor to his class and upbringing. The operators reluctantly agreed to the convening of a commission (only if it were to exclude any official representative of labor) to do factfinding and to arbitrate a settlement.¹¹² Roosevelt appointed the commission, and managed to include the head of the Order of Railway Conductors, loosely-disguised as an eminent sociologist.¹¹³ The result of the arbitration was a modest wage increase for the miners without requiring that the operators recognized the union.¹¹⁴

These cases demonstrate Theodore Roosevelt’s position on what role the national government in general, and the presidency in particular, should play in the economic

¹⁰⁹ Malone and Rauch (1960), p. 219; Mark Sullivan notes that the U. S. Steel deal created the largest trust in the world—a matter that was the cause of both patriotic pride and fear for Americans (1996, pp. 198-200).

¹¹⁰ Malone and Rauch (1960), p. 220; cf. Smith, P. (1985), p. 39; and Sullivan, M. (1996), pp. 207-209.

¹¹¹ Smith, P. (1985), pp. 13-20; cf. Sullivan, M. (1996), pp. 210-215.

¹¹² Sullivan, M. (1996), p. 213.

¹¹³ *Ibid.*, p. 214.

¹¹⁴ Malone and Rauch (1960), p. 220.

issues of the day. He was not opposed to combination or bigness *per se*, but considered some trusts to be bad for the country. He refused to allow big business and finance to continue to operate as if immune from governmental action.¹¹⁵ It was, he felt, the duty of the president to be the visible moral arbiter between good and bad trusts.¹¹⁶ The president, he felt, was president of all of the people, of all occupations, races, creeds, and conditions of life, and it was the president's job "to do equal and exact justice as among them all."¹¹⁷ The national government, "as the agent of the electorate, had a direct and paramount interest in large-scale strikes that threatened the nation's economy."¹¹⁸ And, the government, he demonstrated, had the power to "suppress monopoly and to control and regulate combinations," when and if it chose to apply it.¹¹⁹

Roosevelt was reelected by a huge majority in 1904, and his two terms were characterized by a vigorous, if moderate, reform agenda. He developed an administrative apparatus that relied on expertise and professionalism. He centralized control of the issue agenda in the office of President. He built what he considered a strong, yet honest, efficient, and balanced national government. He assured his place in history in his nationalist, imperialist foreign policy.¹²⁰ Being assured that his chosen successor, William Howard Taft, would carry on his programs of modest reform, Roosevelt disappointed his popular supporters by declining to run for reelection in 1908. However, having become convinced, particularly due to Taft's firing of Gifford Pinchot, that his successor had betrayed his confidence, Roosevelt placed himself back in the running for the White House in 1912.¹²¹ In doing so, he brought about a split in the Republican Party, and allow a "progressive" Democrat to win the White House.

¹¹⁵ Ibid., p. 219.

¹¹⁶ Smith, P. (1985), p. 11; cf. Hofstadter, R. (1989), p. 296.

¹¹⁷ Ibid., p. 39. This was TR's famous "square deal." According to Hofstadter (1989), Roosevelt saw himself as a Republican representing a golden mean between undue corporate influence on the one hand and radical, popular democracy on the other (p. 285).

¹¹⁸ Ibid., p. 19.

¹¹⁹ Malone and Rauch (1960), p. 220.

¹²⁰ Roosevelt, while cautious in domestic policy, was bold in foreign affairs. His vision of a canal connecting the Atlantic with the Pacific across the Isthmus of Panama could only be carried out through a creative interpretation of the Monroe Doctrine. Political cartoonists had a field day with TR, and were especially fond of portraying him in some variation of his Rough Rider uniform, carrying his famous "big stick," as he enforced America's will on the world. See, Malone and Rauch (1960), pp. 231-247; Sullivan, M. (1996), pp. 247-263; Link, et al. (1963), pp. 146-151; and, Smith, P. (1985), pp. 40-54, for further details of Roosevelt's foreign policy and, especially, the Panama Canal.

¹²¹ Taft had pledged to keep Roosevelt's conservation program alive and to retain Pinchot as Chief Forester. Pinchot publicly defended an Interior Department employee's exposé of Taft's Secretary of the Interior—Richard Ballinger—for giving the Guggenheim coal trust access to Alaska land and for offering some public land in Wyoming and Montana for sale. Taft removed both the employee and Pinchot. See, Mowry, G. E. (1946) *Theodore Roosevelt and the progressive movement*. New York: Hill and Wang, pp. 73-81; cf. Malone and Rauch (1960), p. 260; cf. Ekirch, A. A., Jr. (1974), pp. 154-155; Sullivan, M. (1996), pp. 286-301; Link, et al. (1963), p. 103; and, Smith, P. (1985), pp. 208-211. The bitterness between Roosevelt and Taft only worsened when, in 1911, the Taft Administration, growing concerned about the possibility of

The Progressive Election: 1912

In his analysis of the progressive period, Sandel (1996) identifies three distinct conceptions of progressive reform and three distinct directions in which reform was headed; these conceptions struggled for dominance in the presidential election of 1912. The decentralist vision, expounded by Louis Brandeis and Woodrow Wilson,¹²² was concerned with the negative impact of both big business and big government on democratic practice and the ability of citizens to govern themselves.¹²³ The nationalist view, identified with Herbert Croly and Theodore Roosevelt, proposed big, centralized, national government as a counterbalance to the effect of those large business organizations that were the natural product of America's growing economy and burgeoning inventiveness.¹²⁴ These two strands of progressivism—in contrast with the platforms of radical Socialist, Eugene V. Debs, and conservative Republican, Taft—constituted the real choice facing voters in presidential contest of 1912.¹²⁵

Roosevelt's 1910 series of "New Nationalism" speeches, given while stumping for progressive Republican candidates for Congress, reflected Croly's Hamiltonian vision expounded in *The Promise of American Life* (1909).¹²⁶ Roosevelt called for the development of a national government capable of withstanding the pressure brought to bear on public policy by "bad" business combinations, and presented an elitist vision of presidential leadership. In a speech at Osawatimie, Kansas, given on August 31, 1910, he called for the American people to "effectively control the mighty commercial forces which they [had] themselves called into being."¹²⁷ The truly conservative view of property is that it "shall be the servant and not the master of the commonwealth."¹²⁸ In putting forth his brand of nationalism, he was quick to abjure "overcentralization," but define nationalism as putting "national need before sectional or personal advantage."¹²⁹ He insisted that "the object of government is the welfare of the people," and that "the

Roosevelt seeking the Republican nomination in 1912, hinted that Roosevelt had acted improperly in allowing the U. S. Steel combination to go unchallenged—that he had given his tacit, if not explicit, permission for the purchase by Morgan and his associates of Tennessee Coal and Iron. See, Sullivan, M. (1996), pp. 302-305.

¹²² Sandel, M. J. (1996) *Democracy's discontent: America in search of a public philosophy*. Cambridge, MA: Belknap Press; cf. Charles Forcey (1961) *The crossroads of liberalism: Croly, Weyl, Lippmann, and the Progressive era*. New York: Oxford University Press, pp. 207-208; and Young, J. P. (1996), pp. 155-157.

¹²³ Sandel, M. J. (1996), pp. 211-216; cf. Young, J. P. (1996), pp. 152-155.

¹²⁴ Sandel, M. J. (1996), pp. 216-221.

¹²⁵ Link, et al. (1963), p. 122.

¹²⁶ Wilensky, N. M. (1965) *Conservatives in the progressive era: The Taft Republicans of 1912*. Gainesville, FL: The University of Florida Press, p. 9.

¹²⁷ Roosevelt, T. (1911) *The new nationalism*. New York: The Outlook Company, p. 13.

¹²⁸ *Ibid.*

¹²⁹ *Ibid.*, p. 27; p. 28.

executive power is the steward of public welfare.”¹³⁰ He defined the need for good citizenship as “the prime problem of our nation,” and argued that to get that kind of citizenship, “we must have progress, and our public men must be genuinely progressive.”¹³¹

These themes were repeated on the campaign circuit throughout the West in 1910, and became the basis for TR’s 1912 Progressive Party platform, after his break with the Republican Party.¹³² The new Progressive Party was led principally by independent, often self-employed, professionals who were “deeply aware of the social problems of American society, yet were somewhat divorced from them by virtue of their privileged status.”¹³³ It existed only briefly after Roosevelt’s loss to Wilson, and ceased to be viable as a political party when Roosevelt refused to run under its banner in 1916.¹³⁴

Reflecting Jeffersonian roots, Wilson’s “New Freedom” campaign theme was a slightly less radical version of Brandeis’s work to break up business combinations and the return to local control of *both* politics and economics.¹³⁵ Wilson’s campaign concentrated on such issues as reducing the protective tariff to allow competition to flourish, the need for a national trade commission, the government’s responsibility to protect the powerless, like women and children in the labor market, and the need for expanded public health services.¹³⁶ While the solutions they proposed were different in many respects, the themes running through the New Nationalism and the New Freedom both identified the same factors as problems facing the nation—the effects of American post-war economic growth and the rise of trusts, corporations, and a national market on small, independent producers and businesses, and on the public. When the votes were counted, it seems that the people had chosen the New Freedom solutions—Wilson won the election with a popular vote of 6, 286,214 (just under 42 percent) to Roosevelt’s 4,126,020. Taft came in third with 3,483,922, and Debs finished with 897,011. The election of Wilson was complemented by a large Democratic majority in the House, and a smaller Democratic majority in the Senate, giving him a relatively cooperative Congress to put his New Freedom initiatives into action.¹³⁷

¹³⁰ Ibid., p. 31; p. 28.

¹³¹ Ibid., p. 33.

¹³² Croly’s *The promise of American Life*, developed these themes before Roosevelt’s return to the political front. His book was sent to Roosevelt while the retired President was on safari in Africa. While it is clear that Roosevelt was the real-life model of the energetic executive in Croly’s model, it is less clear whose thought, if not both, underlay the “New Nationalism” speeches.

¹³³ Cashman, S. D. (1988), p. 112.

¹³⁴ Ibid.

¹³⁵ Hofstadter, R. (1989), pp. 328-330.

¹³⁶ Link, et al. (1963), p. 123.

¹³⁷ Ibid.

Like Roosevelt before him, Wilson became a symbol for progressive reform. He was “the spokesman for Progressivism in its years of greatest achievement.”¹³⁸ Before his attention was captured by the eruption of war in Europe, Wilson embarked on a domestic agenda that delivered the specific reforms his campaign had promised. First on the list was tariff reform—a significant reduction in rates was enacted in 1913.¹³⁹ As an amendment to the tariff legislation—to make up for lost tariff revenues—was authorization for a graduated income tax.¹⁴⁰

Next on the list was banking reform. The Federal Reserve Act, after a bitter struggle in the Senate, was enacted in late 1913, setting up the system as it continues today.¹⁴¹ Wilson took on the problem of how to provide financial assistance to farmers, but perhaps without the same consistent support he had devoted to the Federal Reserve, by supporting the Progressives’ bill for federal farm loan banks.¹⁴² Following soon were the Clayton Anti-trust Act, that broadened the scope of the Sherman Act to include discriminatory price-setting,¹⁴³ and the Federal Trade Commission Act, that created the Federal Trade Commission as an aid in executing antitrust laws.¹⁴⁴ These were followed by legislation addressing labor’s struggle for an eight-hour day and child labor issues. The Department of Labor, with a Cabinet-level Secretary, was established. Wilson’s second term brought the Nineteenth Amendment and women’s right to vote.¹⁴⁵ The balance of Wilson’s presidency was devoted first to maintaining American neutrality in the European war, and, when that became impossible, mobilizing to enter the war. He is remembered best, perhaps, for his valiant, if naïve, attempt to achieve “peace without victory,”¹⁴⁶ and to found a world organization where international conflict could be settled without war.¹⁴⁷

Progressivism in Wisconsin

Although it did not capture national attention from either the New Freedom or the New Nationalism in 1912, it is the period’s third progressive theme—a consumerist vision of a reformed American system—that according to Sandel (1996), undergirds today’s

¹³⁸ Malone and Rauch (1960), p. 318.

¹³⁹ Ibid., p. 324; cf. Link, et al. (1963), p. 127; and Sullivan, M. (1996), p. 447.

¹⁴⁰ Malone and Rauch (1960), pp. 323-324; cf. Sullivan, M. (1996), p. 447.

¹⁴¹ Link, et al. (1963), pp. 128-130; cf. Sullivan, M. (1996), p. 447; and Malone and Rauch (1960), pp. 324-327.

¹⁴² Malone and Rauch (1960), pp. 327-328; cf. Sullivan, M. (1996), p. 447.

¹⁴³ Link, et al. (1963), pp. 131-133; cf. Sullivan, M. (1996), p. 447; and Malone and Rauch (1960), pp. 328-329.

¹⁴⁴ Malone and Rauch (1960), pp. 329-330; cf. Link, et al. (1963), p. 133; and Sullivan, M. (1996), p. 447.

¹⁴⁵ Malone and Rauch (1960), pp. 331-333.

¹⁴⁶ Hofstadter, R. (1989), p. 351.

¹⁴⁷ Ibid., pp. 337-365.

procedural republic. Associated with the progressive movement in Wisconsin¹⁴⁸ and explicated in Walter Weyl's (1912) *The New Democracy*, this view is built on a notion of fairness to the individual as consumer. Big business was seen as an evil for its effect on consumer prices. The role of consumer was seen as a strong political identity to bind citizens together in a common cause. Government's role was that of protector of individual consumer rights, not as protector of small businesses, artisans and farmers.

Wisconsin Progressivism built more clearly on old Populist themes in its reform agenda—especially on the “appalling contrast between the ways of the rich and the poor...[that] raised disturbing questions about the whole meaning of industrialism.”¹⁴⁹ This movement, perhaps more than other progressive movement, experienced “new local institutions—discussion clubs, reform leagues, university extension centers, church groups, farmers' institutes—[that] arose to fill a widespread demand for places where men and women could share their puzzled quests for alternatives to the existing order.”¹⁵⁰ Because they found national politics “irrelevant,” they concentrated on local problems—the ones they thought they could solve, and addressed these, not on a theoretical level, but in any way that appeared practical.¹⁵¹ These local endeavors were aided by the universities—new “social scientists” were invited to participate and their expert advice was heeded.

There was a more than usual cohesiveness across social barriers in the Wisconsin movement. Of the things that united people, that gave them a common cause, the most important was their shared role as consumers—consumers “of high prices, defective products, and unresponsive politicians.”¹⁵² Since they recognized the inordinate influence of the state political machine on what they saw as purely local issues, Wisconsin progressives both pioneered such innovations as non-partisan local elections and found ways to counteract the old “ethnic-and-producer-centered partisan politics of the state level.”¹⁵³ Among their statewide reforms were: “consumer-owned [or municipal ownership of] various utilities,...registration of corporate lobbyists, and enforcement of health and safety requirements.”¹⁵⁴ Their tax reforms forced payment of delinquent taxes

¹⁴⁸ See David P. Thelen (1972) *The new citizenship: Origins of progressivism in Wisconsin 1885-1900*. Columbia, MO: University of Missouri Press. Roosevelt had mixed feelings about Robert La Follette, former progressive Governor of, then Senator from, Wisconsin, who best represents this third strand. Roosevelt is quoted by Hofstadter (1989) as calling Wisconsin progressivism “fool radicalism,” yet “praised him in 1910 for having made his home state ‘an experimental laboratory of wise governmental action in aid of social and environmental justice’.” (p. 301). Wilson, on the other hand, ultimately worked with La Follette, especially on La Follette's Seaman's Act, which he signed into law in 1915 (Malone and Rauch, 1960, p. 331).

¹⁴⁹ Thelen, D. P. (1972), pp. 64-65.

¹⁵⁰ Ibid., p. 55.

¹⁵¹ Ibid., p. 72.

¹⁵² Ibid., p. 82.

¹⁵³ Ibid., p. 290.

¹⁵⁴ Ibid., p. 307.

by wealthy individuals and companies, created “ad valorem taxation of sleeping-car and express companies, raised taxes significantly on the remaining quasi-public corporations and insurance companies, established a state tax commission, and passed a state inheritance tax.”¹⁵⁵

The three strains of progressive reform Sandel (1996) describes had as common ground the need for a restructuring of government that included civil service reform, the elimination of machine politics, and some movement toward more democratic electoral procedures. They also shared, with each other *and* with conservative Republicans, a relationship with business that, while cognizant of big business’s more blatant faults, recognized how thoroughly intertwined business and government were, and continue to be, in America, and consequently, how difficult it would be to arrive at effective social and economic reform.¹⁵⁶ Perhaps the most important legacy of progressivism was the yardstick it created against which American business and government could be measured—the idea of the “public interest.”¹⁵⁷ It was this concept, Thelen (1972) argues, that created “a new mass politics that united men as consumers and taxpayers in opposition to the old politics that was based on ethnic and producer identities.”¹⁵⁸ And, although regulation and reform concepts come and go, this concept remains today, still nebulous but potent, as a test of their appropriateness.

Analysis

The progressive era demonstrates the influence of the modern worldview on several levels. Most obvious, as its name implies, is the idea of progress itself, with its supporting ideas of specialization and professionalism. By the end of the nineteenth century, “the ‘expert’ began to be defined as someone who commanded specialized, esoteric knowledge, commonly the result of research; knowledge inaccessible to the laity, to amateurs and nonprofessionals.”¹⁵⁹ During the first two decades of the twentieth century, many facets of ordinary life came under the sway of these professionals and experts, beginning a trend that continues today. At the beginning of the century it could be said that “science is the controlling theme of the twentieth century whether for good or for ill,” and the passage of time has only served to confirm that observation.¹⁶⁰

¹⁵⁵ Ibid.; cf. Wiebe, R. H. (1967), pp. 178-180.

¹⁵⁶ This common connection to business (through socio-economic class and background) is documented in Wilensky, N. M. (1965) and Kolko, G. (1963) *The triumph of conservatism: A reinterpretation of American history, 1900-1916*. New York: The Free Press of Glencoe.

¹⁵⁷ Thelen, D. P. (1972), p. 308.

¹⁵⁸ Ibid.

¹⁵⁹ Smith, P. (1984), p. 917.

¹⁶⁰ Noble, D. W. (1958) *The paradox of progressive thought*. Minneapolis, MN: University of Minnesota Press, p. 17.

One area of specialization was the social sciences—whose academic professionals saw themselves as “agents of improvement,” using “tools provided both by natural science and by historical and cultural investigation.”¹⁶¹ Auguste Comte’s “positivist sociology tended to turn all of history into a closed system...once the chief dynamic factors had been specified, rooted in nature, and the trajectory of their action set, history developed by an inner logic along a precharted course, substantially immune to the contingencies of historical change.”¹⁶² In this way, Comte “ties the whole package together with a unilinear, progressive, and deterministic conception of social change.”¹⁶³

Nineteenth-century American social theorists built on the work of Comte and on that of Herbert Spencer, incorporating their own slant on Darwin’s theory of evolution, to support a conservative view of small government and laissez-faire economics. These scholars proclaimed that human history could no longer be seen as “a decline from innocence in paradise to sinfulness, but [as] progress by [human] efforts from less to more complex forms, functions, and achievements.”¹⁶⁴ Prominent among these were Charles Graham Sumner, and Lester Frank Ward. Herbert Spencer propounded a law of progress that was based on his assertion that all science—physical, biological, chemical, and social—sought to uncover a singular, but absolute and preexisting, reality, and that each was differentiated from the others by convention rather than by necessity.¹⁶⁵ In his (1850) *Social Statics*, his ultimate functionalist product, he argued that progress is a necessary part of nature—a result of a law “underlying the whole organic creation,” which includes culture.¹⁶⁶

Sumner’s particular brand of Social Darwinism gave rise to the phrase “survival of the fittest,” a phrase we often, but inaccurately, ascribe to Darwin. Sumner based his evolutionary explanation, at least in part, on Ricardian economics. He accounted for the disparity of outcomes for people of the Gilded Age by saying that those who had amassed fortunes were the fittest—the ones “whose energy, intelligence, and virtue won them a reward from nature.”¹⁶⁷ Sumner argued against the Jeffersonian notion of “natural rights.” In nature, no right to life was guaranteed. Liberty is not a gift, but comes as the result of effort and struggle. Humans struggle for liberty against nature, but often lose it by mistakenly identifying other humans, instead of nature, as the enemy. In an industrial age, Sumner argued, no satisfactory theory of individualism could be built on natural

¹⁶¹ Ross, D. (1991) *The origins of American social science*. Cambridge, UK: Cambridge University Press, p. 7; p. 8.

¹⁶² *Ibid.*, p. 18.

¹⁶³ Manicas, P. T. (1987) *A history and philosophy of the social sciences*. London: Basil Blackwell, p. 64, emphasis in original.

¹⁶⁴ Malone and Rauch (1960), p. 83.

¹⁶⁵ Manicas, P. T. (1987), p. 68.

¹⁶⁶ Spencer, H. (1897) *Social statics*. New York: D. Appleton and Company, p. 32 (cited in Manicas, P. T. (1987), p. 70).

¹⁶⁷ Ross, D. (1991), p. 87.

rights, but rather could only be derived from “the postulates of discipline and of organization,” like those found in successful business enterprises.¹⁶⁸

Lester Frank Ward’s view of progress arose from his belief that “the chief dynamic force in history was the advance of knowledge; scientific rationality, as the most advanced form of knowledge, was the key to future progress.”¹⁶⁹ Sociology, Ward insisted, “was as precise and mechanical as physics because society was controlled by the same kind of predictable laws as was physical nature.”¹⁷⁰ In his view, such motive forces of human nature as the drive to reproduce and to maximize happiness, worked through social institutions.¹⁷¹ In an age that sought certainty and order, he saw “order [as] a problem of rational coordination; progress, [as] a problem of learning.”¹⁷² Human history was a narrative of error occasioned by the inexpert attempts of human beings to order their own affairs. For there to be progress, Ward believed, history had to be subjected to “scientific control.”¹⁷³

Darwin’s evolutionary theory had a “significance for social thought similar to that of Newton for physical science.”¹⁷⁴ Newton’s discovery of laws “which rule the stars in their courses” had led to an urge to discover laws of human behavior and development.¹⁷⁵ Now social theorists were inspired by Darwin’s laws of nature to search for theories of social organization that justified the unequal effects of industrialization—a law of progress.¹⁷⁶ Not only did the ideas then current in natural science, however misunderstood and misapplied, fuel the new social sciences, but so too did their methods. In service of the idea of social control, Beard and Beard (1962) assert “the social scientist with his accurate, albeit less mathematical, knowledge may be enabled to guide the currents of civilization into rational directions and to impress upon the various aspects of culture an ideal pattern.”¹⁷⁷

At the close of the nineteenth century, “no philosophy could take a position, with any hope of convincing cultural leadership, that did not assert its harmony with science.”¹⁷⁸ It was left to the next generation of economists, sociologists, and political scientists to find

¹⁶⁸ Gabriel, R. H. (1986) *The course of American democratic thought*. 3rd Ed. New York: Greenwood Press, p. 233.

¹⁶⁹ Ross, D. (1991), pp. 88-89.

¹⁷⁰ Noble, D. W. (1958), p. 106.

¹⁷¹ Ross, D. (1991), pp. 92-93.

¹⁷² *Ibid*, p. 93.

¹⁷³ *Ibid*.

¹⁷⁴ Gabriel, R. H. (1986), p. 171.

¹⁷⁵ De Santillana, G. (1971) *The seventeenth-century legacy: Our mirror of being*. (pp. 30-52) in G. Holton, ed., *Science and the modern mind: A symposium*. Freeport, NY: Books for Libraries Press, p. 40.

¹⁷⁶ Gabriel, R. H. (1986), p. 172.

¹⁷⁷ Beard, C. A. and M. R. Beard (1962) *The American spirit: A study of the idea of civilization in the United States*. New York: Collier Books, p. 576.

¹⁷⁸ Noble, D. W. (1958), p. 81.

a way to use science to turn American thinking toward a new theory of progress, one that moved away from Spencerian social philosophy. Many of these progressive social theorists were contributors to the *New Republic*, and perhaps the most cogent analysis of the influence of modern science on social thinking in the progressive era arises from an examination of their ideas. Among these are: James Mark Baldwin, Charles H. Cooley, Henry Demarest Lloyd, Richard T. Ely, Simon Patten, Thorstein Veblen, Walter Rauschenbusch, and Herbert Croly.¹⁷⁹

Baldwin countered Spencer's use of Darwin by pointing out that, while Spencer spoke of humans as individuals, Darwin looked at humans as a species, and it was "the chance for novelty," not individual competition that drove evolution.¹⁸⁰ Survival was more likely, Baldwin argued, for individuals who were a "part of the best integrated social groups," because they would have the "richest store of experience to draw on."¹⁸¹ The most valuable human traits were subsumed in a tendency toward "conscious cooperation and unity," as these were associated with people who formed coherent social groups.¹⁸²

Baldwin stressed that "the culmination of social growth was a society of free agents voluntarily cooperating with each other...Society impresses social tradition on the individual, who then transcends it, returning to inspire society to follow along the path of his discoveries."¹⁸³ This social process, he believed, led to both individual ethics and moral behavior in society, and that both of these were "spontaneous expressions of the progressive evolution of society."¹⁸⁴ He assured his anxious readers that underneath the anarchy of the present there were laws of progress, that a shared belief in progress was necessary to overcome social problems, and that because "social reality...was above the control of natural law and above the control of what was usually called history," they were now free "to create a future whose coming, nevertheless, was inevitable and whose rules were absolute."¹⁸⁵

Charles H. Cooley concentrated on communication as the key to social progress. Infants are "potentially social," and this potential is realized through communication with others in their environment.¹⁸⁶ Both society and individuals are developed through this reciprocal process, and the ideas that are nourished through communication "are not isolated phenomena but rather are a part of a total web of associations, colored by

¹⁷⁹ Noble, D. W. (1958). John Dewey might well be included in this list, along with Lippmann and Weyl, however, attention will be paid to his work in the concluding chapter.

¹⁸⁰ Noble, D. W. (1958), p. 83

¹⁸¹ *Ibid.*, p. 82.

¹⁸² *Ibid.*

¹⁸³ *Ibid.*, pp. 94-95.

¹⁸⁴ *Ibid.*, p. 93.

¹⁸⁵ *Ibid.*, p. 102.

¹⁸⁶ *Ibid.*, p. 112.

emotion and sentiment.”¹⁸⁷ As American society grew larger and communities became separated by great distance, a slowdown in communication occurred, and this brought about a reduction in new and creative ideas. In Cooley’s view, the rise of industrialism and technology may have evoked a crisis, but it also provided a solution. The advance of technology solved the communication problem through its railroads, telegraphy, and mass-circulation newspaper, thus restoring the mutually-reinforcing development of individuals and communities.¹⁸⁸

In his later years, his thinking moved further away from an idea of progress that was predetermined. He focused his studies on the ideals generated in what he called “primary groups,” the family, childhood playmates, and the local community.¹⁸⁹ It is from these primary group ideals—which include loyalty, truth, service, lawfulness, and democracy—that larger social ideals are drawn. As long as primary groups continue to function, liberal society will continue to espouse such ideals.¹⁹⁰ He also recognized that the application of reason alone could not ensure a progressive future. “Science, if it was to be creative, had to be related to something like imaginative artistic endeavor,” and if social scientists were to use imagination, they would be “free to assist in the unfolding of God’s plan for the future.”¹⁹¹

For Henry Demarest Lloyd the goal of progress was clear—“a perfect cooperative commonwealth.”¹⁹² And, having such a clear goal, it was possible for the reformer to show the way for society to move efficiently toward achieving it. Like Cooley, Lloyd saw industrialism, urbanism, and technology as means of removing obstacles in the way of the commonwealth.¹⁹³ Lloyd was associated with both the Populist movement and labor causes before the turn of the century, but was able to make a transition to progressivism because of his essentially middle-class way of looking at social problems and opportunities.

In Lloyd’s view, progress was coming, but not fast enough. His slant on the meaning of progress was perhaps more evangelical than those of his peers. As Noble (1958) describes it, Lloyd believed:

Progress was coming because it was the spiritual purpose of evolution; progress was coming because the positive laws of society pointed toward it; progress was coming because industry was providing the proper environment for it; progress was coming because labor would vote it in...Progress, after all, was more than the mechanics of the perfectly

¹⁸⁷ Ibid.

¹⁸⁸ Ibid., p. 117.

¹⁸⁹ Ross, D. (1991) 243-244.

¹⁹⁰ Ibid.

¹⁹¹ Noble, D. W. (1958), p. 121.

¹⁹² Ibid., p. 148.

¹⁹³ Ibid., p. 151.

organized community; progress was its spirit. Progress was a sense of fraternity; progress was a spiritual attitude. Progress was love. Progress was a religion, the religion of humanity.¹⁹⁴

The cooperative commonwealth would be administered by “a permanent executive and administrative group...[made up of] men who ‘represent the deliberate and intelligent will of the people’...[who would] consult the will of the people through types of direct representation.”¹⁹⁵

Richard Ely applied the notion of a law of progress to economics and economic history. He was part of the American Economic Association whose purpose was to make the academic study of economics more scientific. Ely believed that “science dealt with facts and the facts of the world spelled a pattern of progressive growth...science is not religious revelation but a progressive unfolding of truth.”¹⁹⁶ Ely was one of the early advocates of a marginalist view of economics—that the profit motive shaped the production of goods to the satisfaction of the consumer.¹⁹⁷ However, he saw in industrialism both the cause and the ultimate solution to the crisis of individualism of the Gilded Age.

In his view, economic forms parallel the social development of the human—from infancy to maturity. Hunting and gathering economies represent the infancy stage; agriculture and handicrafts, adolescence; early industrialization, with its crisis of individualism, was adulthood; but the coming stage, economic concentration, would mark maturity—and with it, integration or cooperation.¹⁹⁸ Ely looked to the labor movement to bring society through its competitive stage to reach that final stage, but looked to the church to provide spiritual backing. He described a world in which God was not immanent—a material world open to human shaping. God’s will would triumph through human agency, spiritualizing this material world. “Reason and science would reveal the sociological laws of progress, operating through man’s past, and they could provide assurance that inexorable forces were bringing about a social utopia.”¹⁹⁹

Another economist of the era, Simon Patten, took a Hegelian perspective on progress—he saw “forces of retrogression [as] built into the forces of progress.”²⁰⁰ He agreed with Sumner that capitalist progress depended on the “survival” of the most capable and intelligent elements of society and the “elimination” of the most ignorant and unfit.

¹⁹⁴ Ibid., p. 153.

¹⁹⁵ Ibid., p. 156; interior quote: Lloyd, H. D. (1906) *Man the social creator*. New York: Doubleday Page, pp. 153-177.

¹⁹⁶ Ibid., p. 166.

¹⁹⁷ Ross, D. (1991), p. 192.

¹⁹⁸ Ely, R. T. (1913) *Studies in the evolution of industrial society*. New York: Macmillan, p. 26.

¹⁹⁹ Noble, D. W. (1958), p. 173.

²⁰⁰ Ross, D. (1991), p. 197.

Unlike Sumner, however, Patten believed that economic forces were amenable to human direction. Patten's suggestions for economic reform included:

Ease the pressure of debt on the workingmen, curtail speculation and excessive borrowing, encourage producers' cooperatives, and above all compensate for the specialized ignorance produced by the division of labor through education of all the faculties.²⁰¹

Some of Patten's thinking resonates with John Dewey's. He saw humans as capable agents of change in an uncertain environment. He proclaimed "both the freedom and responsibility of man" in a material world that could be transcended and controlled.²⁰² Progress was neither a reaction nor an adjustment to a fixed natural world. Rather, "it was the expression of the creative capacity always to move beyond the immediate environment and to be working to build a new and better world," using information from the environment to more effectively and intelligently reach that goal.²⁰³

A third progressive economist, Thorsten Veblen, was more thoroughly a positivist than the others were early in his career. He not only believed that the natural sciences provided an appropriate model for social science, but that "science was the quintessential form of the impersonal, matter-of-fact attitude generated by industrial development."²⁰⁴ Although most reviewers of his classic (1899) book, *The Theory of the Leisure Class*, considered it to be a satire, Veblen boasted that his natural science colleagues considered it an example of the true scientific method.²⁰⁵ The book does take a tongue-in-cheek stance toward the Gilded Age theories of progress, arguing against their claim that the fittest are rewarded with material wealth, and that their success, demonstrated by leisure and conspicuous consumption, makes possible the advances of education, the sciences, and the arts. For Veblen, conspicuous consumption is waste, and the habits and values usually associated with the leisure class are empty and shallow.²⁰⁶

Veblen believed that man was held in bondage to his barbarian self through the working of tradition and the dominance of exploiters—the earliest members of the leisure class who appropriated the labor of others for their own aggrandizement. Man could be freed from this bondage through economic theory. "Economic theory was basically a theory of reform; the method of science was a method of reason, and the purpose of reason was to distinguish between the true and the false and to help men to live by truth."²⁰⁷ Industrialism, through its machine processes, had freed "workmanship from the bonds of

²⁰¹ Ibid.; Ross paraphrases from Patten, S. N. (1968) *The premises of political economy*. (Orig. published 1885) New York: Augustus M. Kelley, pp. 19, 14, 220, 120, 222-244.

²⁰² Noble, D. W. (1958), p. 198.

²⁰³ Ibid., p. 181.

²⁰⁴ Ross, D. (1991), p. 212.

²⁰⁵ Ibid., p. 213.

²⁰⁶ Veblen, T. (1994) *The theory of the leisure class*. New York: Penguin Books.

²⁰⁷ Noble, D. W. (1958), p. 209.

barbarian habit,” and “was causing men to think in terms of impersonal sequence,” allowing the flowering of curiosity and growth.²⁰⁸ The machine had allowed man to develop into a rational creature—impersonal social and economic forces, paradoxically enough, were the means to creative freedom.²⁰⁹

Bridging the gap between progressive economic or social theory and traditional religious theory was Walter Rauschenbusch. He described God’s ideal purpose as existing “outside of time, waiting to find the ultimate expression in the world.”²¹⁰ There were, therefore, two human histories—“one was that of mundane appearance, seemingly the record of chance occurrences. The other was progress according to divine will which actually entered into everyday happenings and shaped them into the pattern of progress.”²¹¹ The world in its original state is imperfect; man was placed in this world “as the necessary agent of God’s purpose” to sanctify that imperfect earth.²¹² Humans are free to choose whether or not they would fulfill this role.

Democracy, in Rauschenbusch’s view, was “the secular parallel of the Christian doctrine of brotherly love.”²¹³ It had already opened the way to broader discussion of social ills, and had come to the point where it was:

willing to use governmental machinery for reform...democracy was committed to a faith in experimentation for the most efficient ways of controlling the social and physical environment...and...democracy had at hand the perfect tool for reform: social science which revealed the course of human progress.²¹⁴

In every respect but one, Americans were ready to forge ahead in fulfilling God’s purpose. Industrialization and the capitalist economy were the “only institutional aspect[s] of American life that [were] not Christianized.”²¹⁵ Competition fostered by capitalism was seeping into all relationships and all aspects of American life, endangering them. But, so too was the “rationality of efficient production”—fostered by “techniques of large-scale organization and scientific, technological advance.”²¹⁶ It would fall to leaders of the new middle class to lead the way in adapting this learning, this rationality, to the task of perfecting the earth.²¹⁷

²⁰⁸ Ibid., p. 224; p. 225.

²⁰⁹ Ibid., p. 225.

²¹⁰ Ibid., p. 233.

²¹¹ Ibid.

²¹² Ibid., p. 234.

²¹³ Ibid., p. 237.

²¹⁴ Ibid., pp. 237-238.

²¹⁵ Ibid., p. 242.

²¹⁶ Ibid., p. 243.

²¹⁷ Ibid., p. 244.

Although these progressive scholars differed in the kinds of evolutionary conditions they assumed and the kinds of solutions they offered, the one constant among them was the recognition that industrialism and technology were here to stay, and that science would provide the means of making progress. After the conclusion of World War I, there was less cohesion in the progressive reform movement—it became less visible—but that does not mean that the progressive program ended. Many of the principal reform ideas had already been incorporated into government in the Wilson Administration. The mobilization and preparation for America’s entry into the war, and the participation by academics in government activity during the war helped to establish much of the national governmental structure that we see today.

Slowly, but surely, mechanical images had replaced the organic ones inspired by Darwin. Bureaucratic analysis preferred those images—“men were now thinking in terms of a complex social technology, of a mechanized and systematized factory,” rather than in terms of the simple Cartesian clockwork.²¹⁸ According to Wiebe (1967), “bureaucratic thought...made ‘science’ practically synonymous with ‘scientific method.’ Science had become a procedure, or an orientation, rather than a body of results.”²¹⁹ Industrial development and consolidation offered material progress, but it was deemed necessary that it be “paralleled by a consolidation of regulatory powers in a centralized national government.”²²⁰ The old Hamiltonian argument for pitting interest against interest was now adopted by the progressives as a justification for an expansion of national government to regulate the economy in the interest of the people.²²¹ As government became more powerful, it became more important than ever that it be seen as procedurally neutral—as a government of law.²²²

The progressive years demonstrate, both in the public arena of the economy and government, and in the private arena of the home and family, the pervasive influence of the modern themes of objectivity, of the scientific method, of determinism, of the machine, and of the positive notion of progress. This period established the overweening importance of the expert, of the highly-trained and specialized professional, in all aspects of American life. The academic social sciences were born, as were research bureaus and other repositories of statistical information. And marshaling the forces of science and technology for the benefit of the people became the occupation of the professional practice of public administration. Although many of the original progressive reformers found they could not support the “reforms” encompassed by the New Deal in the 1930s,

²¹⁸ Wiebe, R. H. (1967), p. 146.

²¹⁹ *Ibid.*, p. 147.

²²⁰ Ekirch, A. A., Jr. (1967), p. 180.

²²¹ *Ibid.*, p. 181.

²²² Hofstadter, R. (1955), p. 232.

academic political science, especially Gulick, Merriam, and Goodnow, participated in the development of and justification for those reforms.²²³

Case 5. Technology and Technocracy:
Creating a Brave New World, a Good Society, or a Postmodern Nightmare?

For good or ill, the progressive era “witnessed the emergence of the modern American state,” and that state would become increasingly bureaucratic and centralized.²²⁴ We live today in an America of institutions that are a product of the progressive era, subsequent administrative reform and reinvention notwithstanding. We also live in an America whose social, governmental, economic, and moral characteristics have been indelibly marked by science and technology. America’s place in the world, her sense of mission, and her domestic character have been informed by an almost silent struggle between what technology has enabled her to do and what democratic spirit encourages her to be.

This final case history highlights turning points in the American experience in the last half of the present century. It covers the dawn of the nuclear age, the rise of technocracy, and the triumphs and tragedies of the 1960s. The pace of American life quickened after the Second World War. Americans were better educated, more professional, more mobile, and had higher expectations for the “good life,” without much discussion of what the good life might entail or what its price might be. It is during this period that the modern project gave birth to postmodern angst, an overwhelming uncertainty that has its roots in the capability for utter destruction unleashed by the United States to end the war with Japan.

August 6, 1945

At approximately 8:15 a.m., local time, a single bomb fell on the city of Hiroshima, Japan. This weapon was the culmination of one of the most extensive research and development projects ever engaged in and one of the most closely-guarded secrets of our time. The bomb “contained uranium 235 as its fissionable material enclosed as opposite ends of a gun barrel. The two sections of material were brought together in the critical mass and exploded by a proximity fuse when a gun mechanism at one end of the barrel shot the smaller of the two parts into the other.”²²⁵

²²³ For the study on the original reformers and their attitudes toward the New Deal, see Graham, O. L., Jr. (1967) *An encore for reform: The old progressives and the New Deal*. New York: Oxford University Press.

²²⁴ Young, J. P. (1996), p. 159.

²²⁵ Feis, H. (1966) *The atomic bomb and the end of World War II*. Princeton, NJ: Princeton University Press, p. 122. The original account of this event, cited by Feis, was contained in U. S. Air Force, Historical Division of Research Studies (1953) *The Army Air Forces in World War II, Volume Five. The Pacific: Matterhorn to Nagasaki, June 1944 to August 1945*. W. F. Craven and J. L. Cate, eds. Washington, DC: U. S. Government Printing Office, pp. 716-717.

The bomb was designed to explode above the ground to provide the widest possible range of damage. The destruction of Hiroshima and her inhabitants followed a pattern—now familiar—unseen before except by the observers of the one previous test of the weapon at Alamogordo:

A white flash of blinding intensity was all that many saw before they were blown to bits or struck down by flying fragments, or burned by the wave of searing heat that flashed out from the explosion. A heavy cloud of smoke and dust spread, cloaking the city in a pall of darkness. Hundreds of fires breaking out everywhere soon transformed it into a blazing inferno and, as the fires kept on, into a waste of ashes and smoldering ruins. Those who had escaped with their lives, many of them burned, in agony and confusion sought refuge elsewhere.²²⁶

In the Potsdam Declaration of July 26, 1945, the Allies had requested the unconditional surrender of Japan, and had warned that, failing this, “prompt and utter destruction” would ensue.²²⁷ On August 6, 1945, the White House issued a statement to the press, under President Truman’s name, announcing the bombing of Hiroshima and describing the atom bomb in general terms. The statement concluded with the following:

It was to spare the Japanese people from utter destruction that the ultimatum of July 26 was issued at Potsdam. Their leaders promptly rejected that ultimatum. If they do not now accept our terms, they may expect a rain of ruin from the air, the like of which has never been seen on this earth. Behind this air attack will follow sea and land forces in such numbers and power as they have not yet seen, and with the fighting skill of which they are already well aware...It has never been the habit of the scientists of this country or the policy of this Government to withhold from the world scientific knowledge. Normally, therefore, everything about the work with atomic energy would be made public. But under present circumstances it is not intended to divulge the terminal processes of production or all the military applications, pending further examination of possible methods of protecting us and the rest of the world from the danger of sudden destruction. I shall recommend that the Congress of the United States consider promptly the establishment of an appropriate commission to control the production and use of atomic power within the United States. I shall give further consideration and make further recommendations to the Congress as to how atomic power can become a powerful and forceful influence toward the maintenance of world peace.²²⁸

²²⁶ Ibid.

²²⁷ Ibid., p. 106; text of the Declaration was released in the U. S. Department of State (1945) *Bulletin* (July 29, 1945).

²²⁸ U. S. Department of State (1945) *Potsdam Papers*, Document 1315. Washington, DC: U. S. Government Printing Office, cited in Feis, H. (1966), pp. 123-124.

When the Japanese government failed to comply with the Allies' demand for surrender, a second atomic bomb was dropped, on August 9, 1945, on Nagasaki. This led to the end of the war, but also to the beginning of the nuclear age.

American Technocracy

The Manhattan Project was only one of the many research and development projects born of the war. "War is a technological forcing house, but modern war has yoked science to technology in a radically new way," and the development and subsequent use of atomic bomb symbolizes that union.²²⁹ The technology-based industries of the nineteenth century had not relied upon the discoveries of theoretical science prior to production.²³⁰ Now both government, in its operations research, and industry were engaged in the research and development business—with products on the government side like "distant-early-warning networks coordinated in real time through computer systems, intercontinental ballistic missiles, and, in Vietnam, the beginning of an 'automated' battlefield through the use of large-scale electronic sensing devices and computer-controlled retaliatory strikes."²³¹ Science-based industries, producing computers, electronics, optics, and polymers, continue to lead the list of manufacturing in an economy that has shifted to services over hard goods.²³² This had led to a configuration of the economy where "theoretical knowledge...becomes the strategic resource."²³³ And, that is one defining characteristic of a technocracy.

A technocracy can be defined as "a system of governance in which technically trained experts rule by virtue of their specialized knowledge and position in dominant political and economic institutions."²³⁴ It is the "social form in which an industrial society reaches the peak of its organizational integration...the ideal [associated with] modernizing, updating, rationalizing, [and] planning."²³⁵ It is characterized by a "belief that efficiency

²²⁹ Bell, D. (1976) *The coming of post-industrial society: A venture in social forecasting*. New York: Basic Books, p. 21.

²³⁰ Ibid., p. 25.

²³¹ Ibid., p. 22. For a short history of the rise and fall of the science-government relationship following World War II, see, Smith, B. L. R. (1994) The United States: The formation and breakdown of the postwar government-science compact. (pp. 33-61) in E. Solingen, ed., *Scientists and the state: Domestic structures and the international context*. Ann Arbor, MI: The University of Michigan Press; or Teich, A. H. and J. W. Wiaz (1986) Organization, development and finance of US science and technology. (pp. 17-34) in A. H. Teich and J. H. Pace, eds., *Science and technology in the USA*. Harlow, UK: Longman Group UK Limited, pp. 20-22.

²³² Bell, D. (1976), p. 25.

²³³ Ibid., p. 26, emphasis added.

²³⁴ Fischer, F. (1990) *Technocracy and the politics of expertise*. Newbury Park, CA: Sage, p. 17; cf. Meynaud, J. (1969) *Technocracy*. New York: Free Press,

²³⁵ Roszak, T. (1968) *The making of a counter culture: Reflections on the technocratic society and its youthful opposition*. Garden City, NY: Doubleday & Company, Inc., p. 5.

and production should be society's primary goals and that engineers and technically trained managers using a rational, quantitative, and systematic methodology are best equipped to make the decisions that would realize these objectives."²³⁶ Technocracy is "that society in which those who govern justify themselves by appeal to technical experts who, in turn, justify themselves by appeal to scientific forms of knowledge. And beyond the authority of science, there is no appeal."²³⁷

It would be a mistake to confuse the simple, if astoundingly rapid, growth of technology with technocracy. The first is an interconnected developmental process where practical applications are found and elaborated from the discoveries of theoretical science and from practical knowledges. As Winner (1977) describes them, "technologies are structures whose conditions of operation demand the restructuring of their environments."²³⁸ Introduction of a new technology or technological advancement disrupts the systems of which is a part.

Technological advance is a necessary precondition for technocracy, but doesn't explain the whole phenomenon. "Historically, the theory and practice of technocracy have been political and ideological responses to industrialization and technological progress."²³⁹ The arrival of technocracy depends on the surrendering of other decision criteria and methods in favor of those associated with "technique," a surrender due to the difficulty of defending decision criteria derived from sources other than science in the face of the authority of science.

Technique, a concept first elaborated by Jacques Ellul in 1964, is defined as "the totality of methods rationally arrived at, and possessing absolute efficiency in every field of human activity."²⁴⁰ Human activity, as it moves from the spontaneous to the deliberate, spawns technical operations.²⁴¹ Reason and consciousness intervene to create modern technique—new and different means to ends are seen as possible, and, when perfected, those means can be applied to other areas of operation previously under the sway of non-technical authorities, like religion.²⁴² Premodern techniques were constrained, as compared with their modern descendants, by being "applied only in a few life domains...[being] limited in power...[subject to] local cultural limitations...[and] limited

²³⁶ Hughes, T. P. (1975) Introduction. (pp. 1-15) in T. P. Hughes, ed., *Changing attitudes toward American technology*. New York: Harper & Row, Publishers, p. 7.

²³⁷ Ibid., p. 8; cf. Larson, M. S. (1984) The production of expertise and the constitution of expert power. (pp. 28-80) in T. L. Haskell, ed. *The authority of experts: Studies in history and theory*. Bloomington, IN: Indiana University Press, pp. 62-65.

²³⁸ Winner, L. (1977) *Autonomous technology: Technics-out-of-control as a theme in political thought*. Cambridge, MA: The MIT Press, p. 100.

²³⁹ Fischer, F. (1990), p. 17.

²⁴⁰ Ellul, J. (1964) *The technological society*. Trans. J. Wilkinson. New York: Vintage Books, p. xxv, emphasis in original.

²⁴¹ Ibid., pp. 19-20.

²⁴² Ibid., pp. 20-21.

by human choice.”²⁴³ Modern technique has come to influence and dominate a wider range of human activities, the whole human context, including such areas as: “politics, education, leisure, entertainment, culture as a whole, the unconscious drives, and even...the protest against technocracy itself: all these become the subjects of purely technical scrutiny and of purely technical manipulation.”²⁴⁴

The rapid expansion of industrialism in late nineteenth-century America can be credited to technological innovation. When technologies began to be “systematically pursued...and systematically integrated with large-scale industrial production, part of the utopian promise appeared to come true. Technical expertise was translating the power of reason into apparently limitless material progress.”²⁴⁵ The concurrent professionalization of work led to an increase in the likelihood of those with training as engineers becoming corporate elites and managers.²⁴⁶ Building on the production-line successes of Taylorism, “modern management [became]...not simply the creation of engineers; it was the product of engineers functioning as managers...engineers were the first people in industry to attempt to apply systematically the intellectual methods of science to questions of business management.”²⁴⁷ And, when Taylor’s scientific management lost its cachet, the professional field of engineering “had to expand to include the new methods of the social sciences.”²⁴⁸ The human factor, discovered and applied through the new management tools of psychology and sociology, was coupled with traditional engineering methods in a search for the one best way to meet production goals in the later iterations of management science. As technology moved from the manipulation of physical materials to more cognitive technologies—like “information theory, cybernetics, decision theory, game theory, utility theory, [and] stochastic processes”—these “intellectual” technologies began to be applied in the management of both public and private organizations.²⁴⁹

Modern technique is characterized by the kind of rationality that considers all ends as measurable objectives, and chooses the most efficient means to each—the one that “maximizes the yield of that end per unit cost.”²⁵⁰ Consequently, more traditional means to given ends are discarded as inefficient. Once technical rationality has been perfected in one area of life, it is applied to other areas. “Each advance in any area opens up advances

²⁴³ Waks, L. J. (1995) *Technology’s school: The challenge to philosophy*. Greenwich, CT: JAI Press Inc., p. 104, emphasis in original.

²⁴⁴ Roszak, T. (1968), p. 6.

²⁴⁵ Larson, M. S. (1984), p. 37.

²⁴⁶ For a complete description of this phenomenon see, Noble, D. F. (1977) *America by design: Science, technology, and the rise of corporate capitalism*. New York: Alfred A. Knopf, especially Chapters 4 and 10.

²⁴⁷ Noble, D. F. (1977), p. 263.

²⁴⁸ *Ibid.*, p. 274.

²⁴⁹ Bell, D. (1976), p. 29.

²⁵⁰ Waks, L. J. (1995), p. 104.

in closely related areas by means of lateral applications.”²⁵¹ Unintended consequences of the application of technique, rather than being seen as symptoms of problems with technique itself, open up new target areas on which the experts must be called upon to act. The modern technique is also characterized by its unity—it “embrac[es] all the separate techniques, form[ing] a whole.”²⁵² Technique is qualitatively universal—as it expands, “everything, including humanity, becomes a technical object.”²⁵³ At this stage, then technique becomes autonomous—it “shapes ends to its own requirements,” and replaces all other criteria, whether moral, artistic or spiritual, as arbiter of what is good.²⁵⁴ The corporate model, informed by this modern technique and its scientific justifications, was first applied to American government by the progressives, and later refined and augmented by the New Deal and the demands of World War II leading to the government we have today.

Technocracy convinces citizens, bewildered by increasing complexity in all aspects of their lives, that, first, all problems are technical in nature. It then persuades them that most cogent problems have already been solved through the techniques applied by the experts, and that those problems that remain intractable are largely the product of poor communication or human irrationality in one form or another. Finally, technocracy teaches that it is only the experts—those who are academically credentialed and sanctioned by their positions in governmental or corporate organizations—who can be trusted to determine our wants and needs and devise the means to supply these.²⁵⁵

A technocratic polity can be said to contain three spheres—“a top echelon of political and economic elites, a technocratic strata of experts and specialized administrators, . . . and a largely depoliticized mass public.”²⁵⁶ Basic governing decisions are made by the top-level elites, and they have the ability to shape policy to suit the interests of their constituencies. They also have access to and influence on the technical experts who “mediate the policy decisions made by top elites as well as direct their implementation.”²⁵⁷ The experts, well rewarded both in terms of status and salary, lend their sanction to policy decisions that maintain the status quo, and “often withhold from the rest of society the kinds of information necessary to play a meaningful role in the governance process.”²⁵⁸

²⁵¹ Ibid., p. 105.

²⁵² Ellul, J. (1964), p. 94.

²⁵³ Waks, L. J. (1995), p. 106.

²⁵⁴ Ibid.; cf. Winner, L. (1977). According to Winner, “to say that technology is autonomous is to say that it is . . . not governed by external law,” that is, that at some advanced stage it is no longer subject to human control (pp. 16-17). This human “loss of mastery manifests itself in a decline of our ability to know, to judge, or to control our technical means” (p. 30).

²⁵⁵ Roszak, T. (1968), pp. 10-11.

²⁵⁶ Fischer, F. (1990), p. 27.

²⁵⁷ Ibid.

²⁵⁸ Ibid., pp. 27-28.

The role of the citizen is thus reduced to participation in general elections, and these generally “offer only narrowly proscribed choices between competing political elites.”²⁵⁹ Added to this lack of meaningful choice is the “mass media and the bevy of public relations specialists and communications experts who filter and shape its messages,”—spin doctors—and it is little wonder there is so much “alienation and apathy” among citizens.²⁶⁰ In a technocracy it is assumed that “most persons...lack the knowledge or credentials to participate in the government.”²⁶¹ Democratic practices, considered dangerously disruptive by ruling elites and their expert administrators, are routinely discouraged and inhibited, and, in some cases, actively discouraged.²⁶²

The rise of science and technology at the turn of the century, according to Price (1965), fundamentally:

altered the basic rules and procedures of U. S. government established at the time of the founding...The scientific revolution has (1) moved the public and private sectors closer together, (2) brought a new order of complexity to the administration of public affairs, and (3) upset our system of checks and balances in government.²⁶³

When there is a fusion of economic and political power—as in what President Eisenhower called the “military-industrial complex”—“the boundary between private industry and government [becomes]...increasingly indistinct, in some cases virtually nonexistent.”²⁶⁴

Government-sponsored research and development, especially in regard to weapons systems and aerospace technology, leads to a relationship between the government and private enterprise that is “more like the administrative relationship between an industrial corporation and its subsidiary than the traditional relationship of buyer and seller in a free market.”²⁶⁵ Scientists and managers, both public and private, have often more to say in the development of policy than do the legislative and executive branches in whom the authority for policy decisions is vested by the Constitution. Political actors often choose to defer the critical decisions to their technical advisors, so although these decisions affect

²⁵⁹ Ibid., p. 29.

²⁶⁰ Ibid.

²⁶¹ Winner, L. (1977), p. 145.

²⁶² Larson, M. S. (1984), p. 38.

²⁶³ Price, D. K. (1965) *The scientific estate*. Cambridge, MA: Harvard University Press, as paraphrased by Winner, L. (1977), p. 151.

²⁶⁴ Winner, L. (1977), p. 152. Bellah, R. N., R. Madsen, W. M. Sullivan, A. Swindler, and S. M. Tipton, in their (1992) *The good society*. New York: Vintage Books, p. 103, call this “Pentagon socialism,” and assert that up to 20 percent of the American market was exempt from regulation because of its government contracts.

²⁶⁵ Price, D. K. (1965), p. 36.

us all, the political process—the democratic process—is subverted. As Bell (1976) argues:

The crucial decisions regarding the growth of the economy and its balance will come from government, but they will be based on the government's sponsorship of research and development, of cost-effectiveness and cost-benefit analysis; the making of decisions, because of the intricately linked nature of their consequences, will have an increasingly technical character.²⁶⁶

The blurred boundary between sectors is perhaps easiest to notice with regard to the ease with which top executives move between them and the ethos of elite managerialism that pervades both. Robert McNamara, once head of Ford Motor Company, then head of the Department of Defense and “father” of PPBS, defended the administrative practices he brought to government in this way:

Some critics today worry that our democratic, free societies are becoming overmanaged. I would argue that the opposite is true. As paradoxical as it may sound, the real threat to democracy comes, not from overmanagement, but from undermanagement. To undermanage reality is not to keep free. It is simply to let some force other than reason shape reality. That force may be unbridled emotion; it may be greed; it may be aggressiveness; it may be hatred; it may be ignorance; it may be inertia; it may be anything other than reason. But whatever it is, if it is not reason that rules man, then man falls short of his potential.

Vital decision-making, particularly in policy matters, must remain at the top. This is partly, though not completely, what the top is for. But rational decision-making depends on having a full range of rational options from which to choose, and successful management organizes the enterprise so that process can best take place. It is a mechanism whereby free men can most efficiently exercise their reason, initiative, creativity, and personal responsibility. The adventurous and immensely satisfying task of an efficient organization is to formulate and analyze these options.²⁶⁷

Technocracy and democracy apparently work at cross purposes. But, does this necessarily make technocracy evil and technocrats ill-intentioned? Even the severest critics of the effects that the overweening influence of technology have had on our culture would concede that the intentions of the technocrat may be to find the genuine good for

²⁶⁶ Bell, D. (1976), p. 344.

²⁶⁷ McNamara, R. S. (1968) *The essence of security*. New York: Harper & Row, pp. 109-110. McNamara went on to head the World Bank following his years at the DoD, undoubtedly taking this ethos with him. Cf. Harris, D. (1996) *Our war: What we did in Vietnam and what it did to us*. New York: Times Books, Random House, pp. 126-129.

society. However, those same critics point out that the scientific worldview has blinded our culture to alternative possibilities by insisting that all that we consider to be “good, true, and beautiful” are associated with “affluence, empirical knowledge, and prodigious material power over [the] environment.”²⁶⁸ The policies issuing forth from the technocrat are “born of pure reason and generous intention,” and the technocrats are “those who qualify as disinterested experts in all aspects of life—or, at one highly important remove, those who control the services of those experts.”²⁶⁹

One undeniable problem with technocracy is that, in its claim to be value-neutral, it confuses instrumental values with ultimate ends. Technology, the source of the technocracy’s authority, has no final values—only “values about the procedures, techniques, processes and modes which should be followed, values about ‘how to do it’.”²⁷⁰ Instrumental know-how is invaluable when dealing with technical problems, but our technocratic application of it to all aspects of life has led to a profound sense of loss and alienation. The human psyche seeks wholeness—the ability to integrate the experiences of life into a meaningful and consistent whole. The structuring of life into separate, and often incompatible, compartments—the “careful dissociation of work, cognition, and public life from family, feeling, and fun”—that characterized American life in the 1960s was at the root of that era’s youthful anti-war, pro-ecology, feminist, drop-out counter culture.²⁷¹

The 1960s: A Decade of Both Shattered Dreams and Unimagined Adventures

To get an idea of the scale of technological advance, Toffler (1970) invites us to imagine the expanse of human history (approximately 50,000 years) as divided into 62-year lifetimes. This calculation yields 800 lifetimes, the first 650 of which were lived in caves. We have only had 70 lifetimes where communication by means of writing was possible. Printed documents and books have only been available for the last seven lifetimes. We have only been able to measure time precisely for the last four. The electric motor has only been available for power for the last two. Only in the last one was it possible to fly from one place to another on earth or through space.²⁷² In the half-lifetime since the publication of Toffler’s book, humans around the world have become electronically connected, and computer literacy, as much as literacy in its normal sense, has become an important educational goal.

²⁶⁸ Roszak, T. (1975) Technocracy: Despotism of beneficent expertise. (pp. 37-51) in T. P. Hughes, ed., *Changing attitudes*, p. 38.

²⁶⁹ Ibid., p. 39. This passage is a paraphrase by Roszak of the position taken by Lynn White, Jr. In his (1972) *The historical roots of our ecologic crisis*. In C. Mitcham and r. Mackey, eds., *Philosophy and technology: Readings in the philosophical problems of technology*. New York: The Free Press.

²⁷⁰ Keniston, K. (1965) *The uncommitted: Alienated youth in American society*. New York: Harcourt, Brace & World, Inc., p. 253.

²⁷¹ Ibid., p. 269.

²⁷² Toffler, A. (1970) *Future shock*. New York: Random House, p. 15.

Writing in the 1960s, Kenneth Boulding identifies the twentieth century as literally the middle of human history. For those born in the middle of this century, he argues, almost as much has happened since their birth as had happened before it.²⁷³ He identified that moment—the 1960s—as a critical turning point for human history. The decade certainly proved to be a critical juncture in American life, containing as it did the greatest fears and greatest divisions in our society since the Civil War along with some of the proudest achievements—both technological and social—of our history.²⁷⁴

For many, the 1960s were a patchwork quilt of ups and downs. The decade began with the election of John F. Kennedy as President of the United States. His presidency has been compared to the halcyon days of the legendary Camelot. He was young and charismatic. He challenged Americans to look for ways to serve each other. He seemed to epitomize the ideals of the nation, and Americans, especially young Americans invested their hopes and dreams in him. His rhetorical style “persuaded [Americans] to become a part of what [was] being said and done.”²⁷⁵

Kennedy’s incomplete term was not without its problems, however. The cold war was at its chilliest stage. When satellites revealed the presence of nuclear missiles in Cuba, and Kennedy entered into a most dangerous game of “chicken” with Soviet Premier Khrushchev, the nation held its collective breath until the missiles were removed. To American families the possibility of nuclear war was very real and unspeakably frightening. Fathers built bomb shelters in the basement and stocked them with rifles as well as with canned goods and bottled water. School children engaged in safety drills that actually offered no safety.

In the same decade, the same president set a goal that would take the breath away from those who watched it realized. In 1962, President Kennedy challenged the nation to send a man to the moon and return him safely to the earth. In July, 1969, many Americans woke their children to witness the first step of a human on the surface of an extraterrestrial body. Before reaching that point those same Americans had mourned the deaths of the Apollo 1 astronauts in a fire during a routine test, and many questioned the

²⁷³ Boulding, K. (1964) *The meaning of the 20th century*. New York: Harper & Row.

²⁷⁴ As I can claim to be one of those persons standing in the median strip of human history, much of what follows in this section is built upon my memories and feelings of this tumultuous decade, supported and complemented by the thinking of contemporaries. I was not one of those drop-outs, or war protesters, or civil rights demonstrators, or radical feminists who are often taken as the standard for people of my generation. I was instead one of those who chose to continue to believe in the American dream, and the pivotal events of the 1960s and 1970s were a counterpoint to my marriage, the births of my children, and my entry into public service. I shared in the fears, the disappointments, the shame, the triumphs, and the hopes generated by the time, if not the marches and protests.

²⁷⁵ Marías, J. (1972) *America in the fifties and sixties: Julián Marís on the United States*. M. A. Rockland, ed., trans. B. De Puy and H. C. Raley. University Park, PA: The Pennsylvania State University Press, p. 320.

wisdom of continuing the project. Another Apollo crew survived near disaster when an explosion damaged their command module on the way to the moon. Their eventual safe return was a miracle—perhaps public administration’s finest hour—as NASA technicians mocked up fixes to the multiple problems that plagued the flight.²⁷⁶ Four more moon landings were successfully achieved before the Apollo program ended in 1972. In the ten years of the space program, American technology had turned science fiction into reality, and had brought that reality into such common acceptance that television broadcasts from space began to be taken for granted.

The assassination of President John F. Kennedy in November, 1963, stunned the nation. Few Americans had personally experienced the last previous presidential assassination—that of William McKinley in 1901. Technology, in the form of instant television communication and a home movie of the motorcade in Dallas, somehow intensified the effect, as did the fact of the President’s youth and vigor, his appealing family, and the circumstances of the event. Shock was eventually replaced with suspicion for some—conspiracy theories surfaced and many of these are believed today. Before the Kennedy assassination, most Americans trusted government; the number of believers began to shrink afterwards. The later assassinations of Robert Kennedy and Martin Luther King, Jr. convinced many that America had grown mad.

On taking the oath of office, President Lyndon Johnson offered the reassurance of his intention to carry on the program for domestic improvement initiated by Kennedy. He declared a “War on Poverty” and began to build a legislative agenda and administrative apparatus to carry out this assault on the nation’s worst domestic problems—decaying cities, rising unemployment, hungry children, and rising welfare rolls, incongruencies in an era of prosperity and plenty. He found, however, that he couldn’t focus on this war because of America’s involvement in Southeast Asia.

America had, in the 1950s, made a commitment to support a marginally democratic, but scarcely majority, government in South Vietnam with the intention of preventing the further spread of Communism in the region. That support came in the form of advisers, principally from the military and the Central Intelligence Agency. The level of American support had been gradually increasing through the years. More troops were needed to pacify the region. Congress had not declared a state of war, but the Selective Service was actively drafting young men into military service.

The Tonkin Gulf Resolution in August, 1964, made our presence in Vietnam official, and, as the warfare escalated, so did the draft and so did the questions. When we look back on the 1960s, we tend to merge war protests, civil rights activities, and feminist activities with the counter culture as represented by the “flower children.” We should

²⁷⁶ NASA should be remembered for their fine performance in the way the Apollo 13 mission was rescued, not merely for the many administrative and technical problems that led to the Challenger disaster.

keep these streams of protest separate, and attempt to understand each in its own terms. We attach a negative connotation to the youth culture, assuming that it was comprised of drug users, irresponsible and lazy young people who seemed to us to be unwashed, under-educated, over-sexed, cowardly, unpatriotic losers. Some undoubtedly were all of those things. But most were simply people who couldn't make sense of the direction America seemed to be headed in.

The case of the draft resisters makes a good example. In America of the 1950s, boys wanted to be John Wayne when they grew up.²⁷⁷ John Wayne not only symbolized what it meant to be a patriotic American, but also what it meant to become a man. To cross the chasm between being an inductee and being a draft resister, each had to face down his internalized John Wayne. As draft resister David Harris (1996) recounts it:

We were to say few words and say them with a growl, keep a hard jaw and a tight ass, not snivel, stifle feelings, take orders, never cry, dish out punishment to the bad guys, fire from the hip, know we were right just because we were Americans, always win, but die like heroes if our luck ran out. We were to be patriots, revere the flag, honor God and Country, and follow the chain of command. Anything other than that was void...Getting the war out of the boy was every bit as much an issue as getting the boy out of the war...We had to overcome an almost universally accepted dogma that it was disloyalty verging on treason for citizens to criticize the government when our soldiers were in combat. And, thanks in large part to the cinematic contributions of the Duke, being a man and being a good soldier were virtually synonymous in the generic Americanism practiced around Fresno and its like. So, before becoming antisoldiers, we all had first to come to terms with not being the soldiers we'd expected ourselves to be.²⁷⁸

Most Americans at that time still believed the democratic myth—that in America rights were respected and citizens were guaranteed equal opportunity. Those around the world who ascribed to our democratic values could count on us for support against all foes. “We were the world’s best hope and, if not completely selfless, at the least tirelessly beneficent.”²⁷⁹ We couldn't recognize ourselves as unwanted interlopers in Vietnam where this war, not surprisingly, was called the “American war.” We also underestimated the ability of the Vietnamese to resist our military force, despite the sophistication of our weapons systems and the ability of our troops. We had difficulty even finding the enemy and so “uprooted whole villages, and evacuated them to bastions surrounded by barbed wire, almost always against their wishes. Since we were in control of both everything and

²⁷⁷ This story is not mine, but rather, comes from the autobiographical description of the Vietnam years written by a draft resister who went to prison for his resistance, now a reporter, David Harris (1996).

²⁷⁸ Harris, D. (1996), pp. 43-44.

²⁷⁹ *Ibid.*, p. 39.

nothing, we measured our success by how many people we were able to kill and announced those statistics on a daily basis.”²⁸⁰ By the time we left Vietnam, defeated and demoralized, 3 million people had died, among them 58,000 Americans.²⁸¹ We had, in the end, “dropped some 250 pounds of high explosives for every single human being in that part of the Southeast Asian subcontinent.”²⁸²

We eventually came to realize that our involvement was a hideous mistake, one whose toll still weighs heavily on our collective psyche.²⁸³ Our hubris, magnified by our technical superiority, allowed us to depersonalize the Vietnamese people to the extent that the My Lai massacre was possible. Harris (1996) points out that:

Over and over in our war, we collided head-on with the Other... We were the world's richest and the world's strongest, its most industrial, its most modern, its most technologized, and its most comfortable power. We had never been beaten. We were the creatures of advantage and prosperity. There had always been a relative few of us occupying a relatively large space. We were urban and suburban, motorized and televised, overfed and overstimulated. We expected immediate gratification in all things. We were a nation of immigrants and migrators. We ate our food fast, kept our roots shallow, and frequently left our families behind. We followed fads and made our own rules, often as we went along. We believed our machines could solve our problems. We hadn't fought a war inside our own borders in a century, and it had been almost two centuries since we'd been a colony. Now we were a big-ticket item, the first of the First World.

And they, of course, were small change and as Third World as Third World could be. There had always been a lot of them in a relatively small place. They were traditional and hidebound, and most of them lived and expected to die in the same village on the same land where their parents had lived and died and their parents' parents as well. They were rural, remote, and redundant. They were also poor. They had been resisting colonization by one set of foreigners or another for more than a millennium and had never fought a war anywhere but close to their homes. They walked and waded and worked and wasted nothing. They had little choice but to put gratification off until they could afford it. They had no industry to speak of, one highway, one railroad, and millions of bicycles. They dreamed of paddies and plantations. They were creatures of disadvantage and hardship. Most could neither read nor write, and most ate sparsely, respected their elders, and valued endurance over speed.

²⁸⁰ Ibid., p. 40.

²⁸¹ Ibid., p. 15.

²⁸² Ibid., p. 41.

²⁸³ Mariñas, J. (1972), pp. 322-331; and pp. 422-427.

And, of course, they were yellow skinned and slant eyed. We expected that a land full of dinks—most of whom still drew their water out of wells in buckets—would scatter at our approach like a bunch of terrified Kiowa encountering their first iron horse. We thought the sophistication and grit required for a serious military effort would be beyond people whose men held hands, whose women dug canals, and whose children had never seen a TV. We expected a slant-eyed cross between Charlie Chan, Madame Butterfly, and Mr. Moto who would recognize their inferiority and surrender when it actually dawned on them just who they would have to fight. We assumed that we were much more suited for putting their affairs in order than they were. They, on the other hand, were much more suited to tasks like planting rice. And we expected they would accept both assumptions.

In our caricature, they placed little value on human life; accordingly, we placed little value on theirs. We imagined they would fight us with human wave attacks, seeking to overwhelm us with numbers, and never imagined that they would outsmart us as well. We pictured the Asian mind as conniving, unscrupulous, and brutal but never as incisive or brilliant. We could not tell one of them from another, so we assumed tens of millions of people were all the same and treated them that way. We considered them primitive and superstitious. We took their Oriental inscrutability for granted, giving us an excuse never to know who they really were and making both bombing them and buying sex from their daughters much easier than it would have been otherwise. They were different from Americans, and we assumed that meant they were worse.²⁸⁴

Those safely at home saw the war broadcast on the nightly news, day after day. We learned words and phrases and acronyms from television journalists, such as DMZ, Tet, napalm, and Agent Orange. War protests grew to include more than those who might have to fight. And, to make matters worse, the government closed ranks, lying about our status in Vietnam and hunting down those who would tell the truth. Our heavy losses from the Tet offensive convinced all but the most recalcitrant that government assurances about the status and activities of our troops were false and that government promises of an early end to the fighting would not be fulfilled. The lies of the 1970s, up to and including the Watergate lies, built on our growing mistrust of government, increased our likelihood of shutting civic matters out, and began to lead to an American society fragmented and barricaded in personal enclaves.²⁸⁵

²⁸⁴ Harris, D. (1996), pp. 65-68.

²⁸⁵ For instance, the plumbers unit, made famous by Watergate, was formed to gather information on and disrupt war protests, and were responsible for the burglary of the office of Daniel Ellsberg's psychiatrist. Ellsberg was a former Pentagon employee who had leaked information about the true progress of the war to the press. Harris, D. (1996), p. 142.

Analysis: Science, Technology, and Postmodern America

We've fought "wars" since Vietnam, some of them appearing pointless and silly, some of them with objectives with which most can relate. One of the latter was the Gulf War. In that conflict the tie between technology and warfare was made explicit, as the war itself was virtually televised. We watched with amazement as our technology overcame the sheer numbers of the Iraqis. When the Iraqis threatened to launch Scud missiles with chemical and biological warheads against our allies in the region, our Patriot missiles were fired to intercept them. Precision air strikes and cruise missiles destroyed targets almost before our eyes half a world away. Our mechanized cavalry took command of the desert. The Iraqi air force was destroyed and the Iraqi army suffered heavy losses through combat and mass desertion. Our military redeemed itself for the failure of Vietnam and redeemed the sense of an American destiny at the same time. And, all of this was immediately available to the American public on CNN.

Around-the-clock coverage of the Gulf War was the making of 24-hour news networks on television. CNN either created an insatiable appetite for "news" or responded to a yet unspoken need for such coverage in America, depending on one's perspective on this issue since the war. In the typical American fashion of choosing to do what one can do rather than what one should do, since the network and its imitators or spin-offs established their presence in our living rooms, they have aired continuous coverage and opinion shows, creating long-running, dramatic issues out of such events as the O. J. Simpson trials, the Ramsey murder investigation in Boulder, Colorado, and, of course, our present crisis, the Kenneth Starr investigation of the Clintons. This is not to say that these events were and are not important or newsworthy—each of these stories has relevance for America. However, that relevance has been confused and clouded, rather than clarified, because of the compelling need of the networks to fill hours of air time and of the print media to compete with the Internet and television to break stories first.

Restoring our sense of destiny, if that is what the Gulf War accomplished, has also restored our hubris. We have not grown beyond a vision of self as superior from either victory or defeat, and still see the world—including each other—in terms of Otherness. The modern tendency to define Self in opposition to Other, to know others as objects, has spawned the fragmentation and separation identified as postmodern by critics of our society. Science has not only provided the cognitive perspective to make this view possible, but also has produced the material basis for a sense of difference and superiority that fuels the distinction and isolation of those identified as Other.

Technology expands exponentially. Futurists in the 1960s and today warn against the adverse effects of this expansion on human beings.²⁸⁶ The scale and rate of technological change leave most of us feeling inadequate. We become alienated and isolated whether we accept the change technology demands as legitimate and try to keep up with it (failing inevitably) or whether we deny that legitimacy.²⁸⁷ We have too many choices and inadequate knowledge to make them, leading to a variety of physical and mental illnesses.²⁸⁸ We have lived for a generation with the threat of nuclear devastation which has only lessened, not gone away entirely, in the past few years. We begin to recognize that our consumption of fossil fuel and other irreplaceable resources have not only robbed the future, but poisoned the present, and may lead to a greenhouse death for our planet.²⁸⁹ But, what can we do about it? Is there anything we can do? These are questions destined to increase our angst and feelings of inadequacy.

Technology, by increasing our surface control over nature, has transformed the way in which we look at the world and relate to each other in many subtle ways. It has brought about a higher standard of living and the expectation for more to come, with an implied promise that technology can make things better and better. It has transformed work and created a new class of professional managers and technicians. It has engendered a new kind of quantitative rationality emphasizing efficiency, and this, in turn, has changed education to favor these new modes of thought and new fields over older ways of thinking and professional preparation. Advances in communication and transportation have led to global economic interdependencies and new social relationships. Technology has even affected our aesthetic viewpoint—we can see the world from above and from outer space—leading to different visual assessments and judgments.²⁹⁰

The American love affair with progress and technological bent have led to thinking about utopia. The atomic bomb demonstrated the power of science, and many envisioned a bright future fueled by clean nuclear power. Others, like Manhattan Project scientist J. Robert Oppenheimer, challenged conventional wisdom about nuclear arms, leading to his

²⁸⁶ Toffler, A. (1970); cf. Roszak, T. (1968, 1972, and 1975); Bell, D. (1976); and Naismith, J. (1982) *Megatrends: Ten new directions transforming our lives*. New York: Warner Books. See, also, the scholars of the communitarian school, beginning with Bellah, et al. (1985 and 1992), and continuing through Selznick, P. (1992) *The moral commonwealth: Social theory and the promise of community*. Berkeley, CA: University of California Press, who attempt to discover a way to counteract the effects of the modern perspective on American social life.

²⁸⁷ Keniston, K. (1965), p. 386.

²⁸⁸ Toffler, A. (1970).

²⁸⁹ When Al Gore wrote his (1992) *Earth in the balance: Ecology and the human spirit* (Boston, MA: Houghton Mifflin Company), he was derided by other politicians who considered that he was ‘crying wolf’ about the precarious state of the earth’s ecosystems. His views are increasingly supported by scientists of climate and ecology. The El Niño weather of the past year has made believers of many who a short while ago thought global warming would not pose a serious problem. See, for example, the special issue of *National Geographic*, 193 (5), May 1998, devoted entirely to the physical world and climate.

²⁹⁰ Bell, D. (1976), pp. 188-189.

being charged with being a Communist sympathizer or worse.²⁹¹ Perhaps the most influential of the modern positive utopians was Richard Buckminster Fuller. Fuller developed, as nearly as possible, a “post-Newtonian” philosophy and a vision of life as an “absolute system” of machines and humans controlled by the technocrats.²⁹² Cheap, safe atomic energy was the fuel of choice for his encapsulated cities. As we all know, nuclear power poses many problems—some as ordinary as the disposal of radioactive wastes, some as “exciting” as the Three Mile Island disaster—that call into question the viability of Fuller’s utopia.²⁹³

Few of the utopian visions of this century were as positive as Fuller’s. In addition to challenges by such humanists as Lewis Mumford, who opposed systems thinking in its crudest forms and was something of a Luddite, technological utopias have come to be “transvalued” in fiction and philosophy—instead of being the fruit of progressive society, the epitome of good, the technological future offers the security of domination and drugs, of genetic engineering and a loss of individual purpose.²⁹⁴ George Orwell’s *1984* and Aldous Huxley’s *Brave New World*, both written in the 1940s, predict the development of such utopian societies after mankind has nearly destroyed the future in technology-driven war.²⁹⁵

Does our technology determine our future? Experts cannot agree on a simple answer to that question, although they do agree about the prominent place of technology in human cultures.²⁹⁶ For every gain that technology supplies, there are often unnoticed losses. As early as the 1920s, American scholars began to question the gains and enumerate the losses:

We have lost contact with nature—the contact that gave man his first challenges, his first joy of battle, his first sense of victory. We have lost that neighborliness which was characteristic of the older community...the steam engine first undermined that community, and the automobile has completed its destruction. We have lost practically all of the integrity of our old craftsmanship. The machine is not interested in integrity: only in form... We have lost practically all control of our destinies. We work when the machine works; we do what the machine commands; we use the

²⁹¹ Gabriel, R. H. (1985), pp. 474-477.

²⁹² Temko, A. (1975) Which guide to the promised land: Fuller or Mumford? (pp. 19-34) in T. P. Hughes, ed., *Changing attitudes*, p. 26.

²⁹³ Nuclear policy is explored as a case study in F. R. Baumgartner and B. D. Jones (1993) *Agendas and instabilities in American politics*. Chicago, IL: The University of Chicago Press, C. 4; and is the subject of J. V. Rees (1994) *Hostages of each other: The transformation of nuclear safety since Three Mile Island*. Chicago, IL; The University of Chicago Press.

²⁹⁴ Temko, A. (1975); Keniston, K. (1965), p. 327.

²⁹⁵ Orwell, G. (1949) *1984*. New York: Harcourt, Brace; Huxley, A. (1989) *Brave new world*. New York: Perennial Library.

²⁹⁶ For a fuller exploration of the question, see Smith, M. R. and L. Marx, eds. (1994) *Does technology drive history? The dilemma of technological determinism*. Cambridge, MA: The MIT Press.

products that the machine turns out. We are educated to work with the machine and to use machine-made products.²⁹⁷

Another loss is the loss of art and authentic feelings. The power of technical language and rationality reduces all other perceptions to the realm of the irrational and trivial. As Roszak (1968) reminds us, tongue in cheek, “the world can do without poems and paintings; it can scarcely do without dams and bombs and sound policy.”²⁹⁸ The key to these last benefits is the application of technique. In the public sector, some scholars resisted the flow of technique (in the form of behaviorism and positivism), but in the move toward more technology and a science of management, their message was ignored.²⁹⁹

As we approach a new millennium, American society faces new challenges. Advancing technology will both create new problems and help solve them. Despite a mixed, at best, track record, we continue to place our trust in modern administrative principles and technical solutions. We continue to believe that there is “one best way,” not only to make a product, but to govern in a democracy. We manage for the short-term the problems we have decided are amenable to technical solutions, assigning to the political those problems too big or complex to reduce easily to our elite managerial apparatus. However, we have found that these modern “strategic concepts, analytic methods and organizational practices discourage the kind of long-term perspective and risk taking necessary to sustain a high level of technological innovation,” and, as a consequence these administrative practices even endanger our technological edge over the rest of the world.³⁰⁰

Today’s new technologies raise serious ethical issues, as well as endanger our survival. In the nineteenth century, Social Darwinism, in its most basic form, once recommended the sterilization of the mentally incompetent. In 1968, the National Health Service in the UK, in an effort at population planning, recommended both “voluntary euthanasia for the unproductive and incompetent elderly,” and a program of “compulsory contraception [for] adolescents, who would, in later life, have to apply to the Service for permission to produce children. It would then be the job of the NHS to evaluate the genetic qualities of prospective parents before granting clearance to beget.”³⁰¹

²⁹⁷ Hart, J. K. (1975) Power and culture. (pp. 241-252) in T. P. Hughes, ed., *Changing attitudes*, p. 248. This article was originally published in *The Survey*, Graphic Number 51, (March 1, 1924), pp. 625-628.

²⁹⁸ Roszak, T. (1968), p. 53.

²⁹⁹ White, O. F., Jr. and C. J. McSwain (1990) The phoenix project: Raising a new image of public administration from the ashes of the past. (pp. 23-59) in H. D. Kass and B. L. Catron, eds., *Images and identities in public administration*. Newbury Park, CA: Sage.

³⁰⁰ Abernathy, W. J. and R. S. Rosenbloom (1982) The institutional climate for innovation in industry: The role of management attitudes and practices. (pp. 27-54) in A. H. Teich and R. Thornton, eds., *Science, technology, and the issues of the eighties: Policy outlook*. Boulder, CO: Westview Press, p. 48.

³⁰¹ Roszak, T. (1968), pp. 21-22, citing a television program produced for the BBC-1, entitled “Something for Nothing,” aired in London on June 27, 1968.

Today's reproductive technologies—from birth control to gene therapy to cloning— and questions surrounding the definition of death—from discontinuing life support to organ transplantation to assisted suicide—are central issues in the political conflict in America today. The kind of decision making that has dominated American military and foreign policy since the 1940s—one that “flatten[s] every non-quantitative consideration beneath a steam roller of dehumanized logicity”—is widely believed to be inappropriate for these kinds of “scientific” decisions.³⁰²

Technology wears two faces. The same laser technology that is used in delicate eye surgery was proposed as a defensive weapon in President Reagan's Strategic Defense Initiative of 1983. The Internet gives us instant access to more information than we could ever need and provides opportunities to build “communities” in cyberspace, but we sometimes close ourselves to real human community and a slower, but richer, information process when we use it.

The side of technology we see depends on how we choose to use it. Perhaps democratic practices can coexist with technological advances. We hope they can, since, like the contents of Pandora's box, once a technology is loosed on the world, it can't be contained again. It is up to us—all of us—to find a way to reconcile technology to the democratic spirit. We can continue to apply the linear logic of the classical, Newtonian worldview and build social policies that are inimical to our humanity, or we can search for alternative legitimating concepts. Physics supplied the first “scientific” perspective through the intervening interpretation of the idealist philosophers of the eighteenth century. We need not choose to look at the world through the “hard-edged, distinct focus of the scientist's impersonal eye;” we may choose instead a more global awareness and peripheral vision to examine our world and to shape our social constructs.³⁰³ Alternate, but equally “scientific,” perspectives may be supplied in today's new sciences, and, as is argued below, they may be used to liberate both technology and democracy from stranglehold of technocracy.

³⁰² Roszak, T. (1975), p. 44.

³⁰³ Ibid., pp. 250-251.

Chapter 6 The Counterintuitive World of the New Sciences

As the above cases demonstrate, a naïve faith in Truth and Science and Progress permeates American history. Enlightenment philosophy and the young social sciences of the nineteenth and early twentieth centuries adopted many of the tenets derived from or associated with classical science as the foundation for building social systems and government structures.¹ The social sciences have clung to those tenets—to objectivity, determinism, linearity, and universality—although the physical sciences have moved beyond them.

The world of the physical sciences experienced a radical change in perspective about the fundamental nature of reality in the first three decades of the twentieth century. The first definitive challenge to Newtonian thinking came from an unknown clerk named Albert Einstein in the form of his theory of special relativity. The second and final blow to the mechanical model of the universe, the cumulative work of a series of mathematicians and physicists working separately and together, was the counterintuitive theorizing of quantum physicists. The radical reconception of how the world works that rose from this work has been supported and augmented since the 1960s by chaos theory and theories of complexity in all of the sciences. Taken together, these “new science” theories have revolutionized the ways we can think about the world and about ourselves as actors in the world.

In the pages that follow, I will present a brief account of the development of post-Newtonian or classical mechanics and optics—the dominant paradigm of physics from the eighteenth to twentieth centuries. I will then describe how anomalies in the behavior of light and heat led to the formulation of quantum theory and to theories of relativity. Quantum theory has yielded several ontological interpretations, and these will be summarized. Next, with the development of more and more powerful computing systems, it became possible to attack the nonlinear mathematics necessary for the articulation of chaos theory and other theories of complexity. Finally, the characteristic assumptions and ontological implications of these new sciences and their potential applications for social science will be identified.

¹ Throughout this chapter, the terms “classical” and “Newtonian” are used interchangeably to denote the science developed out of the work of Newton, Galileo, Descartes, and their contemporaries. The term “dynamics” refers to studies of motion, and the term “mechanics” refers to studies of forces. The terms “quantum theory,” “quantum mechanics,” and “new sciences” all refer to discoveries of the twentieth century that overcome the anomalies or problems in classical science.

Classical Physics: Its Promise and its Limitations

The work of Galileo, Descartes, and Newton in the seventeenth century culminated in a paradigmatic departure, a revolution for its day, from the Aristotelian thinking that had held the position of dominant cosmological explanation during the Middle Ages. In the two centuries following Newton there occurred a process of what Thomas Kuhn (1970) has termed “normal science”—the exploration and expansion of the concepts of Newton’s three laws of motion, of his understanding of gravity, and of his work with optics. Science moved from the simple and universal Newtonian statement of how the world works to a more detailed and particular description.² In addition, science moved from being the private occupation of a few men to being a more public endeavor of many, settled in university and research facilities, supported, in part, by the state.

The movement, during the eighteenth and nineteenth centuries, from Newton’s model of single particles and the effects of well-defined forces upon them to the complex interactions of multiple particles and forces was inspired by a search for “constancy in nature” and resulted in a classical dynamics informed by conservation principles and minimal principles.³ Conservation principles assume a symmetry in nature such that momentum and energy are never lost. In the case of momentum, it is necessary to assume that the laws of nature are spatially symmetrical. Where energy is concerned, this same assumption applies to time. “This means that if we represent the physical state of a system by some quantity that is a function of...space and time, the momentum of the system is related to how the physical state of the system changes if the system moves from point to point in space and the energy is related to how the state changes from moment to moment.”⁴

Although experimental situations can only assert that in isolated systems of bodies the total system momentum remains constant, regardless of the type of bodies or interactions (the law of conservation of momentum), the repetition of experiment has validated, as an assumption, that this “law” is true across the range of foreseeable bounded situations.⁵ Momentum and angular momentum (measures of motion in a straight line and rotational motion, respectively) are vectors, that is, they are measures of mass times velocity, and involve not only quantity but direction.⁶ The Newtonian model of the universe requires that we be able to monitor such entities and that they be conserved.⁷ Newtonian physics sees the universe as a closed system in equilibrium, with finite quantities of matter and energy.

² Newton’s laws were abstract and theoretical. It remained to later scientists to apply them to specific experimental situations.

³ Motz, L. and J. H. Weaver (1989) *The story of physics*. New York: Plenum Press, p. 89.

⁴ *Ibid.*, pp. 99-100.

⁵ Asimov, I. (1966) *The history of physics*. New York: Walker and Company, p. 69.

⁶ *Ibid.*, p. 67.

⁷ Motz and Weaver (1989), p. 90.

The development of the law of conservation of energy was more complicated than that of momentum—energy is a more complicated concept and can be manifested and measured in a variety of ways. It is impossible, for example, to demonstrate that the mechanical energy of a system is conserved, as quite often mechanical energy is converted to other forms of energy, such as heat, in transactions.⁸ To arrive at a suitable understanding of “energy,” it is first necessary to include in that term a number of states of a system, and to state a law of conservation of energy, one must include those states—“work, mechanical energy, heat, and everything else that could be converted into heat.”⁹ Only when all of the possible states of energy are taken into consideration can it be said that, in an isolated system, energy is conserved.

Today’s particle physics community seems determined to find a unified field theory that will cohere mathematically including all of the elements of quantum theory and gravitational theory—one that will provide a full explanation for all physical events since the beginning of time and the moment of the universe’s creation—in systems ranging from the huge to the tiny.¹⁰ However much we may identify the search for a unified theory with the present day, this is not simply a manifestation of the ambition of present-day scientists. From Newton’s time forward, progress toward such a goal has been apparent.¹¹ Sir William Hamilton’s work in the nineteenth century, culminating in his principle of least action, is an example of that drive to tie together observed phenomena and generalize, from those observations, principles that demonstrate the conservative nature of the physical universe.¹² Hamilton’s studies in geometrical optics and mathematics bring together elements of a particle’s momentum and path with its energy and time, concluding that the linear path that light takes is the shortest of possible paths open to it.¹³ Hamilton’s work was “a remarkable synthesis of the laws of optics and Newton’s laws of motion,”¹⁴ one that corrected what he considered a flaw or omission in Newtonian dynamics.¹⁵ It also took into account the wave and particle properties of light, foreshadowing quantum theory, and correctly includes a configuration of space and time in its definition of action that forms a starting point for Einstein’s space-time continuum.¹⁶

⁸ Asimov (1966), pp. 97-99, emphasis in original.

⁹ Ibid., p. 100.

¹⁰ See Weinberg, S. (1993) *Dreams of a final theory: The scientist’s search for the ultimate laws of nature*. New York: Vintage Books, for a full argument in favor of this endeavor, and Lindley, D. (1993) *The end of physics: The myth of a unified theory*. New York: Basic Books, for a counter-argument against both the usefulness of a unified theory and the likelihood of our discovering one.

¹¹ The worthiness of such an ambition—to reduce all physical processes to one mathematical construct—does not go unquestioned. See, Lindley, D. (1993).

¹² Motz and Weaver (1989), pp. 106-113.

¹³ Ibid., p. 110.

¹⁴ Ibid., p. 111.

¹⁵ Ibid., p. 112.

¹⁶ Ibid., p. 113.

The invention of the steam engine and the desire to improve its efficiency are logically tied to the study of processes involving the flow of heat, or thermodynamics. In fact, the first law of thermodynamics is a restatement of the law of conservation of energy—that however heat may move within a closed system, whether by convection in gaseous or liquid systems, or by conduction in solids, it is never lost.¹⁷ Heat energy is observed to move spontaneously from hot regions to cold regions. In nature, according to the second law of thermodynamics, while the spontaneous shift from cold to hot regions is not forbidden, it is unlikely to occur without their being change elsewhere.¹⁸ The growth in knowledge about thermodynamics had immediate economic importance. Where simple machines—lever, pulley, screw, etc.—could magnify the work of a person, more complex machines (those that capture the thermal energy of heat and transform it into work) could replace or significantly reduce human labor in many commercial operations.¹⁹

The second law of thermodynamics—that “natural processes are accompanied by an increase in the [total] entropy of the universe”—has significant cosmological implications.²⁰ If the second law holds true, there is an inexorable movement from pockets of high and low energy scattered throughout the universe toward increasing disorder—or entropy. The second law held such fascination for nineteenth-century historian Henry Adams that his later works reflected this pessimistic point of view—that humankind was, along with the universe in general, on the downward spiral of increasing disorder toward the thermal death of ultimate equilibrium.²¹ It has since been confirmed that life and order are conditioned on minimizing entropy in a system, and an expanded discussion of the role of the law of entropy in the new sciences will be found below.

The development of these two “laws” of thermodynamics principally resulted from the concentrated lifelong efforts of three noted physicist-mathematicians—J. P. Joule, William Thomson (later, Lord Kelvin), and Rudolf Clausius.²² What their experiments and refinements demonstrated was the propensity of energy to be conserved and entropy to increase in closed systems unless a deliberate intervention occurs.²³ The second law predicts that eventually all energy will be transformed into entropy—that heat will be

¹⁷ Asimov (1966), p. 226; Motz and Weaver (1989), p. 161. The second law of thermodynamics is also known as the law of entropy. It assumes that there is a finite quantity of energy in the universe and pictures the movement to equilibrium—a slowing down of the universe into thermal death.

¹⁸ Atkins, P. W. (1984) *The second law: Energy, chaos, and form*. New York: Scientific American Books, p. 130.

¹⁹ Motz and Weaver (1989), p. 164.

²⁰ Atkins, P. W. (1984), p. 32.

²¹ See, Adams, H. (1918) *The education of Henry Adams: An autobiography*. Boston, MA: Houghton Mifflin Company.

²² Atkins, P. W. (1984), pp. 3-10.

²³ It is possible to decrease the entropy in a closed system, but this happens at the expense of the entropy of the universe. A refrigerator, for example, functions in keeping the interior cold by expelling heat into the kitchen.

evenly distributed throughout the universe.²⁴ If the universe is a closed system, these laws reveal a contradiction to the Newtonian assumption of symmetry. Newton's laws apply to reversible processes. The laws of thermodynamics describe irreversible processes—they give an arrow to time.

By the middle of the nineteenth century, Newtonian studies of mechanics and gravity had reached the peak of their development in terms of mathematical constructs. This branch of physics so dominated the scene with its elegance and simplicity that studies of other physical phenomena—such as, optics, electricity, magnetism, and heat—were slower to develop. They also did not generate the same kind of attention and recognition as did the more immediately productive use of the Newtonian theoretical machinery on problems for which it was appropriate.²⁵ Newtonian mechanics had been so thoroughly worked out by the end of the century, that one noted physicist is said to have advised prospective physicists to seek another field as every important problem had already been worked out and all that remained for future physicists was the refinement of solutions to further decimal points.²⁶ It is interesting to reflect that the weaknesses of Newtonian mechanics lie precisely in the areas of physics that were slow to develop, and that some of the most fundamental and important problems of physics had not been easily addressed by Newtonian constructs. According to Einstein, Newton's models of gravity and light, grounded as they were in the concept of locality,²⁷ required the postulation of several undetected “fluids”—such as ether for the transmission of the force of gravity, and two different fluids for the transmission of electrical current. Ultimately, the need for such inventions to make the observed facts fit the Newtonian theory contributed significantly to “a complete breakdown of the belief that all phenomena can be explained mechanically.”²⁸ As Isaac Asimov (1966) puts it, “the serpent in the Newtonian Eden was something called ‘action at a distance.’”²⁹ If forces like light, electricity, gravity, and magnetism could be seen to work on matter from a distance, without intervening media, they must be somehow contained in particles; if they were transmitted in waves, however, there must be a medium through which their action is transmitted. The weak

²⁴ Energy and entropy, although intimately related, are not equivalent—they are two separate properties that combine to define the state of the system. See, Atkins, P. W. (1984), p. 169.

²⁵ Motz and Weaver (1989), pp. 122-123.

²⁶ This remark is attributed to A. A. Michelson, who allegedly was quoting Lord Kelvin on the topic. See, Wolf, F. A. (1989) *Taking the quantum leap: The new physics for non-scientists*. New York: Harper & Row, p. 46, footnote.

²⁷ Newtonian mechanics relied on an assumption of contact—that force is transmitted from one particle to another either through direct contact or through some intermediate medium. Non-local transfer, action at a distance without an intervening medium, could not be explained by Newton's model. See, Asimov (1966), p. 241.

²⁸ Einstein and Infeld (1938), p. 84.

²⁹ Asimov (1966), p. 243.

points in classical mechanics opened up a whole new perspective on the nature of matter and energy; however, Newton's theoretical model was not given up easily.³⁰

Electromagnetic Radiation and the Structure of the Atom

The first paradoxical problem for the mechanical view of the world came in the field of optics—the study of light.³¹ Newton believed that light was particulate in nature—or, as he referred to it, corpuscular—and that the phenomena associated with optics resulted from particles of light striking surfaces. In his own time, however, others believed that light traveled as waves through the medium of the “luminiferous ether.”³² The most persuasive of Newton's contemporaries who argued for a wave theory of light was Christiaan Huygens, who showed that light of different colors actually had different wavelengths—that the degree to which each color of light refracted could be taken as an indication of the wavelength of each and could explain the spectrum of visible light.³³ Scientists argued the merits of the two models—particle and wave—for more than a century without resolution. Strong evidence in favor of the wave model was provided by Thomas Young in 1801 as the result of his double-slit experiment, where light from one source, when forced through two slits in a barrier, form typical wave interference patterns.³⁴ It was not until the 1850s, however, that wave theory came to dominate optics. The most convincing evidence that light traveled in waves was the demonstration that it travels more slowly when passing through a dense medium, such as water, as compared to its speed in air or in a vacuum.³⁵

The nature of light waves—were they longitudinal waves or transverse waves, and what was the medium through which they were transmitted—still posed a mystery until James Clerk Maxwell, building on the earlier work of Michael Faraday in electromagnetism, demonstrated that light waves are an electromagnetic phenomenon.³⁶ The factor that tied

³⁰ Nor should it be given up. In terms of bounded or closed situations, or in those situations where approximations will serve, Newtonian mechanics continues to work admirably. The problem with classical dynamics was not that it could not be applied in all situations, but rather that despite its shortcomings, it continued to be applied in situations where it was not suitable, both in physics and across disciplinary boundaries into the social sciences.

³¹ The paradoxes that eventually caused the replacement of classical mechanics with quantum theory and relativity as the principle means of explaining physical processes occurred in physics concurrently, and, as good theoretical constructs usually do, the dual nature of both matter and energy (wave/particle duality) and Planck's constant and his notion of the quantum has applicability across a great many seemingly unconnected areas of physics. These areas will be discussed individually for the sake of clarity, but are connected through the work of Planck, Einstein, Heisenberg, and others.

³² The term “luminiferous” means “light-bearing.” Asimov (1966), p. 326.

³³ Asimov, I. (1991) *Atom: Journey across the subatomic cosmos*. New York: Truman Talley Books, pp. 29-30.

³⁴ Asimov (1966), pp. 306-307.

³⁵ Motz and Weaver (1989), p. 123.

³⁶ *Ibid.*, p. 124 and Asimov (1991), pp. 42-46.

light to electricity and magnetism is the speed at which the waves of each are propagated—the speed of light.³⁷ Visible light was found to occupy a set of wavelengths—from longer red light to shorter violet light—along the continuum of possible wave lengths. Later, infrared light and ultraviolet light were found on either side of the visible spectrum. Later still, radio waves, X-ray radiation, gamma radiation, etc., were measured and assigned their appropriate slots on that continuum.³⁸ It appeared that all forces, then, are wave-like, and there must be a medium like the ether.

The ascendancy of the wave theory of light persisted in spite of the difficulty in understanding its transmission. In 1887, Albert Michelson and Edward Morely conducted an experiment they devised to prove the existence of ether. Michelson had previously measured the speed of light and had attained the greatest accuracy to date.³⁹ The pair of experimenters expected there to be some variation in the speed of light caused by the Earth's passage through the ether.⁴⁰ After repeated trials, however, they were forced to announce that the speed of light is a constant, regardless of direction, and that there was, therefore, no ether wind.⁴¹ Once again, scientists puzzled as to how it could be possible for light and other electromagnetic radiation to be wave phenomena, although it was clear that they exhibited wave-like behavior, without a medium for transmitting them across a distance.

It was also necessary to account for the relationship between heat and light. It is readily observable that when a substance is heated to a high enough temperature, it begins to emit visible light—the higher the temperature goes beyond the initial threshold, the brighter the light emitted. The relationship between temperature and wavelength (color) of emitted light posed a problem for nineteenth-century scientists because they could not derive a formula based on classical thermodynamic principles that would fit the observed data for “black-body” radiation.⁴² Heating a black body causes it to emit light, but the spectrum produced, unlike that of solids, is independent of the material used to construct the black body. The math indicated that at the violet/ultraviolet range “intensity would continue going up without limit as the wavelengths got shorter...[which] meant that any

³⁷ Ibid., p. 153.

³⁸ Mooney, C. F. (1996) *Theology and scientific knowledge: Changing models of God's presence in the world*. Notre Dame, IN: University of Notre Dame Press, p. 73.

³⁹ Gribbin, J. (1995) *Schrödinger's kittens and the search for reality: Solving the quantum mysteries*. Boston, MA: Little, Brown and Company, pp. 69-72.

⁴⁰ Lindley (1993), p. 43.

⁴¹ Asimov (1966), pp. 331-336; Wolf, F. A. (1989), p. 51; and Davies, P. and J. Gribbin (1992) *The matter myth: Dramatic discoveries that challenge our understanding of physical reality*. New York: Touchstone, pp. 73-74.

⁴² Any hollow object made of any material with a small aperture is by definition a black body—it absorbs radiation, but because the area of the interior surface is so much greater than that of the opening, very little radiation escapes. There was a serious inconsistency between the classical theoretical predictions regarding how much of what kind of light radiates at what temperatures and observed data. See, Lindley (1993), 46-47.

body should radiate chiefly in the short wavelengths, getting rid of all of its heat in a blast of violet, ultraviolet, and beyond.”⁴³ Known as the “ultraviolet catastrophe,” this failure to mesh the laws of thermodynamics and observed results did not yield until attacked in a new way by Max Planck.⁴⁴ Planck assumed that there was not a continuous progression, but rather that there were discontinuous jumps in energy—that changes in energy were “stepwise [and] discrete” in a “grainy” universe where “grain size is a fundamental constant of nature.”⁴⁵ He called these jumps quanta. By using a new mathematical constant, he developed a formula that built on previous work, perfectly accounted for the observed data, and solved the black-body problem.⁴⁶ Planck did this work in order to “repair what appeared to be a flaw in classical thermodynamics; however, the repair did not strengthen the structure, but brought the whole house down.”⁴⁷ The significance of Planck’s work went beyond his presentation of his solution in 1900—his visualization of the quantum and his calculation of the constant would figure in the solutions to many problems beyond that presented by black-body radiation. Although he did not intend to revolutionize physics, and in fact later described his thinking as too radical,⁴⁸ Planck’s quantum of action and theory of discontinuity eventually would overcome all earlier understandings of action.⁴⁹ His black-body solution has come to be regarded as the dividing line between the classical era, of which he was a part, and modern physics.⁵⁰

The early Greeks hypothesized that there were a few fundamental elements (named “atoms” by Democritus) from which all observed substances were derived—and, that the nature of material bodies depended on their constituent blends of these atoms.⁵¹ Scientists since the Greeks have developed a variety of theories about the nature of material bodies. These theories wavered between the “hardness” of an atomic theory, and a softer, more qualitative approach dependent upon “chemical elements” that would impart properties to materials regardless of the kind of material in question.⁵² Russian chemist, D. I. Mendeleev, intuitively developed a system of organization of chemical elements in 1869,

⁴³ Asimov (1991) p. 56.

⁴⁴ Lindley (1993), pp. 63-65; cf. Mooney (1996), pp. 72-74.

⁴⁵ Speyer (1994), p. 94.

⁴⁶ Planck’s constant is small—so small that its effects are only visible in the subatomic world. “Radiation (E) is emitted in discrete portions (or quanta), whose size is determined by the formula $E = hv$, where ν is the frequency of the radiation and h is the universal constant now known as Planck’s constant.” The value of h is 6.626076×10^{-27} erg seconds. See, Ponomarev, L. I. (1993) *The quantum dice*. A. P. Repiev, trans. Bristol, UK: Institute of Physics Publishing, pp. 20-21. See also, Wolf, F. A. (1989), pp. 61-67; Speyer (1994), pp. 90-94; Lindley (1993), pp. 63-64; Asimov (1966), pp.368-372, and Heisenberg, W. (1958) *Physics and philosophy: The revolution in modern science*. New York: Harper & Brothers Publishers, pp. 31-32, among others.

⁴⁷ Speyer (1994). P. 94.

⁴⁸ Ponomarev (1993), p. 52

⁴⁹ Motz and Weaver (1989), p. 195.

⁵⁰ Asimov (1991), p. 57.

⁵¹ Ponomarev (1993), p. 63.

⁵² Ibid.

grouping the then-known 63 elements according to similarities in their properties.⁵³ He predicted the existence of three elements based on gaps in his table, and these elements—gallium, scandium, and germanium—were found in 1875, 1876, and 1886 respectively.⁵⁴ The systematic study of elements lent credence to an atomic theory of matter. The atom was accepted as the fundamental unit of matter.

However, three subsequent discoveries at the end of the nineteenth century shook science's faith in the hardness and indivisibility of the atom. In 1895, Wilhelm Roentgen discovered X-rays, and later these were used to penetrate the atom, revealing that atoms have an inner structure. In 1896, radioactivity was first observed—seemingly solid atoms were shown to give off particles transmuting material from one element to another.⁵⁵ And, the discovery that all atoms contain electrons took science the next step in its search for fundamental particles. Atoms, small as they are, are composed of even smaller constituent parts.⁵⁶

J. J. Thomson's discovery of the electron in 1896 brought a measure of clarity to the internal structure of the atom.⁵⁷ Thomson visualized the atom as "a uniformly distributed positive charge in a sphere about 10^{-8} centimetre in diameter in which are floating about negative electrons about 10^{-13} centimetre across."⁵⁸ The planetary model of the atom, with electrons orbiting a positively-charged nucleus was developed by Ernest Rutherford in 1911⁵⁹, and some aspects of that model remained problematic until refined later by Niels Bohr.⁶⁰ The electron discussed in these models was a hypothetical particle—its existence deduced from observed effects. Actual electrons could be isolated when bumped out of atoms using light—a process called the photoelectric effect.

In 1905, an obscure patent clerk in Bern, Switzerland, produced three papers that would change physics forever. In one, he demonstrated the reality of atoms and molecules by explaining Brownian motion. In the second, his paper on special relativity, he related matter to energy, completely reworking Newton's mechanical universe. In the third paper, one he claimed as the most revolutionary, he explained the photoelectric effect using

⁵³ Ibid., p. 69; and Cutnell, J. D. and K. W. Johnson (1992) *Physics*, 2nd Ed., New York: John Wiley & Sons, pp. 872-873.

⁵⁴ Glashow, S. L., with B. Bova (1988) *Interactions: A journey through the mind of a particle physicist and the matter of this world*. New York: Warner Books, p. 25. Cf. Asimov (1991), 24-25.

⁵⁵ This sounds like the alchemist's dream come true, however, instead of base metals being turned into gold, the reality is that incredibly rare and costly metals like radium turn into common lead by means of radioactive decay. Glashow (1988), p. 4

⁵⁶ Ibid.

⁵⁷ Ibid., p. 77; cf. Wolf, F. A. (1989), pp. 73-75.

⁵⁸ Ponomarev (1993), p. 40.

⁵⁹ Rutherford was the first to calculate the size of the atom, to identify the basic "particles" of the atom, and to learn that the proton holds a positive charge and is the atom's most massive component. See, Asimov (1991), pp. 95-99; cf. Mooney (1996), p. 75.

⁶⁰ Ibid., p. 41.

Planck's hypothesis.⁶¹ He won the Nobel Prize in 1921 primarily for this work. His name, of course, is Albert Einstein.

The photoelectric effect is observed when the surface of a metal, or any solid, is exposed to light. In that circumstance, electrons are emitted, the number and energy level of the electrons varying with the color and intensity of the light. A dim red light shone on a cesium surface, for example, produces a few slow electrons. As the intensity (frequency) of the red light is increased, the number of electrons increases, but the energy level of the electrons remains the same. A dim blue light releases a few electrons, as well, but these move at higher velocities. Increasing the intensity of the blue light increases the number of electrons released, but the energy level of electrons emitted by blue light remains the same (although higher than if red light is used).⁶²

In either case, it seems that there is no energy left over. Einstein argued that the energy imparted by light striking the metal surface increased discontinuously—that the wavelength (color) of the light determines the energy level or velocity of the electrons, but that frequency (intensity) determines the number of electrons emitted.⁶³ This view of light as a quantum phenomenon explains energy absorption as well as radiation.⁶⁴ For Einstein the quantum could be conceived as a particle of energy, and that light is delivered in packets that were eventually named photons.⁶⁵ His theoretical work reopened the question of whether light is a wave or particle phenomenon.

Einstein's explanation of the photoelectric effect seemed to verify the particle-like nature of electrons, as well. Thus, the atom's composition came into question again. While Thompson's model (positively-charged central core studded with negatively-charged electrons) didn't make sense, it was just as difficult to make the Rutherford planetary model work. If a planetary model behaved according to the laws of classical mechanics, the significantly less massive and negatively-charged electrons would be doomed to spiral into the nucleus, drawn there either by electric attraction or gravity.

It took a fresh approach supplied by Neils Bohr to overcome this problem.⁶⁶ He conjectured that some variant of the planetary model could approximate the true picture of atomic structure if somehow electrons could be prohibited from falling into the

⁶¹ Speyer (1994), pp. 94-95.

⁶² Ibid.; cf. Asimov (1991), pp. 80-82; Wolf, F. A. (1989), pp. 68-71; Heisenberg (1958), pp. 32-33; and, Ponomarev (1993), pp. 44-47.

⁶³ Asimov (1991), p. 80.

⁶⁴ Asimov (1966), pp. 374-375; cf. Mooney (1996), p. 74.

⁶⁵ Ibid. Einstein's formula, $E = hf$ (where E is the energy of the photon, f is the frequency of the light, and h is Planck's constant) established Planck's quantum understanding of subatomic phenomena and demonstrated that the idea of discontinuous change is a fundamental aspect of nature.

⁶⁶ Wolf, F. A. (1989), pp. 75-85; cf. Mooney (1996), p. 75.

nucleus.⁶⁷ His theoretical model was a fusion of the “classical mechanical picture with Planck’s quantum theory...[arguing] that only certain orbits are ‘allowed,’ and an electron moving from an outer, higher-energy orbit to a lower-energy orbit causes the release of energy as emitted radiation.”⁶⁸ And, electrons could not “spiral inward out of those orbits, emitting radiation as they did so, because they were only allowed to emit whole pieces of energy—whole quanta—not the continuous radiation required by classical theory.”⁶⁹ Stable orbits could be described as corresponding to certain fixed energy levels—“each a multiple of the basic quantum.”⁷⁰ Therefore, Bohr postulated, electrons are confined to their respective distances from the nucleus unless they are given an energy boost, by a photon, as in the photoelectric effect, or they give up a photon’s worth of energy as they fall into an unfilled, lower energy orbit.⁷¹ Bohr’s theory, although it provided an explanation for anomalies observed in the light spectrum of hydrogen, was not easy for the scientific community of 1913 to accept—reality was becoming fuzzier with each application of Planck’s theory.⁷²

In the second of his 1905 papers, Einstein developed his theory of special relativity to explain better than Newton had how the elements of a coordinated system relate to each other in an inertial state. His theory was based on two assumptions that contradicted Newtonian premises: that there is no such thing as absolute motion and that the velocity of light in a vacuum would be constant, “irrespective of the state of motion of whoever measures it.”⁷³ The speed of light also, according to Einstein, defines an absolute upper limit for all relative motion.⁷⁴

In his development of the special theory of relativity, Einstein also formulated the mathematical relationship between matter and energy— $E = mc^2$ —that offered further clues to quantum theory and, of course, is the foundation of all atomic energy applications, including those of the Manhattan Project of WWII.⁷⁵ The relationship thus documented between matter and energy led Louis de Broglie to his discovery of matter waves two decades later.

⁶⁷ Ponomarev (1993), p. 54.

⁶⁸ Baggott, J. (1992) *The meaning of quantum theory: A guide for students of chemistry and physics*. Oxford, UK: Oxford University Press, p. 12.

⁶⁹ Gribbin, J. (1984) *In search of Schrödinger’s cat: Quantum physics and reality*. New York: Bantam Books, pp. 52-53.

⁷⁰ *Ibid.*, p. 53; cf. Wolf, F. A. (1989), pp. 79-82 and Davies and Gribbin (1992), pp. 200-201.

⁷¹ Glashow (1988), p. 50.

⁷² Speyer (1994), pp. 96-98; cf. Lindley (1993), p. 68; and Heisenberg (1958), p. 34-38.

⁷³ Davies and Gribbin (1992), p. 74; cf. Asimov (1966), p. 342.

⁷⁴ Davies and Gribbin (1992), p. 74; and Pearcy and Thaxton (1994), p. 175.

⁷⁵ The factor c^2 when multiplied by the mass (m) yields the energy equivalent (E). Since the speed of light squared is such a large number, a tiny amount of matter is the physical embodiment of huge amounts of energy. See, Asimov (1966), pp. 347-352.

What de Broglie sought to discover was some physical, not theoretical, justification for the stability of the atom.⁷⁶ Bohr's model somewhat arbitrarily had ruled that electrons should behave according to quantum rules, but offered little supporting evidence as to why this should be so. De Broglie thought the answer could be found by applying Einstein's theory of special relativity and its mass-energy equivalence in combination with Planck's quantum theory to the problem of Bohr's atom.⁷⁷

De Broglie reasoned that if electromagnetic radiation (typically light), which was generally believed to be propagated in waves, could be shown to have a particle aspect (as the photoelectric effect verifies), then particles of matter might be shown to have a wave aspect or be associated with waves, since matter and energy are related.⁷⁸ Bohr's electron orbits could be viewed as standing wave patterns. When he compared his hypothetical matter waves to Bohr's orbits, de Broglie found that the pattern could be expressed as the momentum (energy) of the particle as equal to the wavelength divided by Planck's constant.⁷⁹ In the "first (lowest energy) Bohr orbit, the electron wavelength was exactly equal to the circumference of the orbit; for the second orbit, two whole wavelengths...and so on."⁸⁰ Thus the electron is an aspect of a matter wave, and mass behaves much as energy is shown to behave—both exhibit characteristics of particles and characteristics of waves, but are neither.⁸¹ De Broglie's conclusion was that "all bodies in nature must possess both wave and particle properties at the same time."⁸²

Understanding the physical universe in terms of this notion of wave/particle duality has been perhaps the most difficult challenge presented by quantum theory from its beginning in the early decades of this century to today. Scientists, even as they demonstrated its validity, were plagued by doubts inspired by the "no-model" model of reality encompassed by the concept.⁸³ So, for those of us not intimately involved with science, there is little wonder that we are mystified by it. It seems to us that "modern physics [has] left the solid world of here-and-now to enter a weird realm of uncertainties and strange, ephemeral particles that have whimsical names and dubious existence."⁸⁴

⁷⁶ Ponomarev (1993), p. 90.

⁷⁷ Baggott (1992), p. 17.

⁷⁸ Asimov (1991), p. 86; cf. Wolf, F. A. (1989), p. 87; Gribbin (1984), p. 89; Mooney (1996), p. 76; and Ponomarev (1993) pp. 89-92.

⁷⁹ The mathematical formula is: $p = h/L$, where p is momentum, L is the wavelength, and h is Planck's constant. See, Wolf, F. A. (1989), pp. 89-91; and Ponomarev (1993) p. 91.

⁸⁰ Lindley (1993), p. 69.

⁸¹ Asimov (1991), p. 87. In fact, electrons respond much as photons do when passed through a double slit mechanism—they show wave interference patterns. See, Gribbin (1984), pp. 89-91.

⁸² Ponomarev (1993), p. 90; cf. Asimov (1966), p. 306.

⁸³ Speyer (1994), p. 100.

⁸⁴ Glashow (1988), p. 47. The discussion of quantum theory in this dissertation does not need to extend to such "ephemeral" particles as quarks with such interesting properties as "charm" and "color," but Glashow's point is well-taken. For most of us, anything beyond the electron, proton, and neutron of our high school science class becomes both confusing and counterproductive.

Science debated for decades about whether light is a wave or particle phenomenon, but the development of quantum theory “revealed that this question is simply not meaningful since neither answer is quite correct.”⁸⁵ One could say the answer is situational—in one set of situations both matter and light act as waves, and in another set they both act like particles.

Perhaps the clearest illustration of what it means for a body to exhibit wave/particle duality is that provided in a thought experiment developed by Isaac Asimov. Imagine an ice-cream cone (without the ice cream, please). It is a sugar cone that is conical in shape. Set it upright on a table on its circular base and step across the room. When you observe it in this experimental setting, it exhibits its “triangle” aspect. Now, lay the cone on the table on its side. When viewed from the base, the cone exhibits its “circle” aspect. While the cone has attributes related to both the “triangle” and the “circle,” it is neither of these, yet, in its own way and at the same time, it is both of them. Which attributes we can see (measure) depend entirely on the way we set up the experiment to measure the ice-cream cone phenomenon.⁸⁶

General Relativity and the Early Development of Quantum Theory

Einstein’s publication of his theory of general relativity in 1915 sealed the fate of Newtonian classical mechanics as the accepted “theory of everything.” It was certainly not his intention, however, that his work would spell the end of a mechanical explanation for how the world works. What Einstein set out to do was to correct the flaws in Newton’s mechanics and bring into view a better, but still mechanical, theory of motion.⁸⁷ He was so thoroughly a believer in an objective world, one that could be understood through mechanical laws, that he was appalled by quantum theory’s dependence on probability. His assertion, “God does not play dice!” is everywhere and often quoted as evidence of his anti-quantum theory feelings.⁸⁸

Einstein’s earlier work on special relativity described a special case formulating laws of relative motion in coordinate systems in a state of inertia. The special theory demonstrated that the concept of absolute motion upon which Newton’s work had been based could no longer be assumed. What Einstein accomplished with his theory of

⁸⁵ Ibid., p. 86.

⁸⁶ Paraphrased from Asimov (1991), pp. 82-86.

⁸⁷ Wolf, F. A. (1989), p. 68.

⁸⁸ It is interesting to note that both Planck and Einstein tried, unsuccessfully, to disassociate themselves from their roles in the development of the new physics. Einstein went so far with his disgust of quantum theory that he spent the latter part of his life attempting to demonstrate that it is incomplete—that it fails to explain all features of reality. See, among others, Albert, D. Z. (1992) *Quantum mechanics and experience*. Cambridge, MA: Harvard University Press, p. 61 ff., and Rae, A. (1986) *Quantum physics: Illusion or reality?* Cambridge, UK: Cambridge University Press, p. 28.

general relativity was the mathematical description of relative motion for all cases, including those involving acceleration, and a new understanding of gravity, not as a force, but as a function of the warping of the fabric of space-time by concentrations of matter.

The general theory of relativity debunked the concept of absolute time, as well as absolute motion. Einstein saw time as relative, just as motion through space is relative. In the general theory, time is fused with space—to discuss location or time as separate factors no longer made sense.⁸⁹ As Thorne (1994) summarizes:

By rejecting absolute space, Einstein made absolutely meaningless the notion of “being at rest” in absolute space...[he] also rejected the notion that everyone, regardless of his or her motion, must agree on the length, height, and width of some table or train or any other object...By rejecting absolute time, Einstein rejected the notion that everyone, regardless of his or her motion, must experience the flow of time in the same manner.⁹⁰

He arrived at these conclusions as a result of two assumptions. First he insisted on the absoluteness of the speed of light—that light travels in all directions and is measured from all vantage points at a constant speed. Second, he assumed that, regardless of their exact nature, the laws of physics must “treat all states of motion on an equal footing.”⁹¹

Newton’s laws of gravitation were based on the notion that the force of gravity varied with the mass of the bodies in question and the distance between them in space. This notion assumes that gravitational force is an inherent property of matter and that it operates across distance in a space described by Euclidean geometry. Newton’s picture of gravity operating, for example, between a planet and its satellite would be a circular or elliptical orbit drawn around a central point in two-dimensional, flat space. Einstein’s picture of the same phenomenon would be in three dimensions, with the planet depressing or warping the space-time fabric into a bowl shape and the satellite skimming around the lip of the bowl on a frictionless path.⁹²

Einstein described gravity as hollows produced by mass curving space.⁹³ Einstein described space by means of Riemannian geometry, where the three dimensions of space and the dimension of time are related to the matter contained in space. Newton’s understanding of space and time can be characterized as “given once and for all,

⁸⁹ Asimov (1966), p. 355. Einstein saw space as “just a way of talking about the relative distances between bodies.” Pearcey and Thaxton (1994), pp. 168-169.

⁹⁰ Thorne, K. S. (1994) *Black holes and time warps: Einstein’s outrageous legacy*. New York: W. W. Norton & Company, p. 72.

⁹¹ *Ibid.*, p. 73.

⁹² Lindley (1993), pp. 84-85.

⁹³ Asimov (1966), p. 361.

independent of the matter it contains.”⁹⁴ Einstein’s understanding produced his fundamental field equations that allowed him to predict that the path of electromagnetic phenomena, such as light, although these phenomena have no mass, would be affected by the presence of matter in space.⁹⁵ This prediction was confirmed experimentally in 1919 by Sir Arthur Eddington who showed that light from distant stars is “bent” by the gravity of our sun before it reaches us here on Earth.⁹⁶

Through his theory of general relativity, Einstein succeeded in reaching his goal of perfecting classical physics. He unified the Newtonian concepts of inertial and gravitational mass, applying Galileo’s principle of equivalence, and resolved, he thought, the difficult problem of action at a distance.⁹⁷ The idea of strict cause and effect was reinforced by the theory of general relativity, causal chains could be followed logically, and nothing could happen at speeds greater than that of light.⁹⁸

But, as Lindley (1993) reminds us, “what general relativity gave, quantum mechanics took away.”⁹⁹ The further development of the quantum theory in the mid-1920s returned uncertainty into our picture of the world and opened the door for a multitude of possible definitions of reality, all of which explain experimental results, and none of which are commensurate with the others.

Bohr’s intuitive leap had resulted in his two postulates to explain atomic stability—that there are stable electron orbits where electrons do not radiate and that “radiation only occurs when an electron jumps from one stationary orbit to another.”¹⁰⁰ There was little direct experimental evidence the Bohr model represented reality, and, despite the additional theoretical justification provided by de Broglie’s wave theory, its picture of the atom was controversial, to say the least.

Early quantum theory challenged the imagination and curiosity of a number of young physicists. Bohr’s and de Broglie’s work was translated by Max Born, Paul Dirac, and Hannover Jordan into a formalism called matrix mechanics where even the results of Newton’s mechanics could be shown to fit.¹⁰¹ Heisenberg’s principle states that no two electrons can have the same quantum numbers, and Wolfgang Pauli, in 1924, identified spin as a fourth quantum number. The discovery of spin improved the accuracy of Bohr’s

⁹⁴ Prigogine, I. with I. Stengers (1996) *The end of certainty: Time, chaos, and the new laws of nature*. New York: The Free Press, p. 176; cf. Heisenberg (1958), pp. 122-123.

⁹⁵ Ibid.

⁹⁶ Asimov (1966), pp. 362-363; Lindley (1993), p. 86; and Glashow (1988), pp. 79-80.

⁹⁷ Lindley (1993), p. 90; and Penrose, R. (1989) *The emperor’s new mind: Concerning computers, minds, and the laws of physics*. New York: Penguin Books, pp. 202-204.

⁹⁸ Lindley (1993), pp. 90-91.

⁹⁹ Ibid., p. 91.

¹⁰⁰ Ponomarev (1993), p. 54.

¹⁰¹ Heisenberg (1958), p. 39.

model for elements with high atomic numbers. He also developed the Pauli exclusion principle—particles of the same kind (with identical quantum numbers) cannot occupy the same orbit in an atom or be in the same state at the same time.¹⁰²

Erwin Schrödinger developed precise mathematical formalisms for de Broglie's standing matter waves, and, from his equations, the Heisenberg uncertainty principle can be derived. It was later shown that Schrödinger's wave mechanics and the matrix mechanics of Born, Jordan, and Dirac were mathematically equivalent.¹⁰³ Schrödinger's wave mechanics demonstrated that only a probabilistic description of position is possible—that electrons are smeared out “everywhere in the atom.”¹⁰⁴ The parallel and complementary work of all these physicists tended to demonstrate the consistency and validity of quantum theory.

Werner Heisenberg's most widely-known contribution to the development of quantum theory is his principle of uncertainty—he argued that it is impossible to measure both the position and the momentum of an atomic object at the same time. If one wants, for example, to measure the momentum, it becomes necessary to illuminate the object with photons. As we have learned, shining light on an electron causes it to move, thus destroying clarity on its position. As Heisenberg described it, increasing the clarity of the information we have about some aspect of an atomic object decreases our clarity on other aspects.¹⁰⁵ According to Heisenberg, “to observe is to disturb,”—our very act of observation, experimentation, or measurement changes those aspects of the object we want to learn about that are not singled-out for measurement.¹⁰⁶

After developing a mathematical formalism where the wave aspect could be seen as a probability wave describing the likelihood of a particle's position or momentum at a given moment,¹⁰⁷ Bohr decided that both wave/particle duality and Heisenberg's uncertainty principle were “special cases of a more general principle of complementarity.”¹⁰⁸ Wave/particle duality “sets limits on the amount of information that can ever be obtained about a quantum system at any one time,” and those limits are related to Heisenberg's uncertainty equations.¹⁰⁹ Bohr's theory of complementarity has been described as “one of the most fundamental philosophical and scientific ideas of our

¹⁰² Ponomarev (1993), pp. 58-60; Lindley (1993), p. 189; and Gell-Mann, M. (1994) *The quark and the jaguar: Adventures in the simple and the complex*. New York: W. H. Freeman and Company, p. 124.

¹⁰³ Heisenberg (1958), pp. 39 and 41; and Lindley (1993), p. 73.

¹⁰⁴ Wolf, F. A. (1989), pp. 93-99; cf. Lindley (1993), pp. 70-71; and Mooney (1996), pp. 77-78.

¹⁰⁵ Ponomarev (1993), pp. 111-113; Lindley (1993), p. 73; Mooney (1996), pp. 82-83; and Wolf, F. A. (1989), pp. 105-115.

¹⁰⁶ Wolf, F. A. (1989), p. 117.

¹⁰⁷ The probability wave is an idea the Max Born took up and developed more fully. See, Heisenberg (1958), pp. 40-41.

¹⁰⁸ Ponomarev (1993), p. 113; cf. Mooney (1996), p. 84, and Pearcey and Thaxton (1994), p. 197.

¹⁰⁹ Rae (1986), p. 9.

time,” and should be regarded as equal in importance to the theory of general relativity.¹¹⁰ It is complementarity that informs the thought experiment with the ice cream cone, although Bohr’s favored analogy is provided by comparing an atom to a living cell. Each is the smallest unit of its kind that retains the integrated properties of the whole. If one wants to learn about the processes of a living cell—about what constitutes life—the cell must be examined. To examine it, especially when using an electron microscope, its basic integrity is destroyed—it is killed. This, according to Bohr, is why we have yet to unlock the fundamental mystery of life.

This is also true of the atom. Our investigations into the individual properties of the atom interfere with those complementary properties at a fundamental level. We can, and do, understand the properties of the subatomic world through developing information about individual properties, but this information is not simultaneously valid across properties. We can develop a composite picture of process, but we don’t have adequate conceptual images to describe them completely.¹¹¹

Our descriptions of reality are either “unambiguous although incomplete or complete although ambiguous,” since “any truly profound phenomenon of nature cannot be defined uniquely using the words of common language, and [what definition we can arrive at] requires at least two mutually exclusive complementary concepts.”¹¹² Only mathematical language, a compressed and formal variation of verbal language, can provide exact descriptions. The wave picture and the particle picture of the atom were considered by Bohr “as two complementary descriptions of the same reality...[each] can be only partially true...If one takes into account [the] limitations [imposed on the use of either partial description] which can be expressed by the uncertainty relations, the contradictions disappear.”¹¹³

The scientists responsible for these various understandings of quantum theory spent time together at the Copenhagen Institute discussing the different approaches they had undertaken. In the course of these meetings, it was Heisenberg whose unenviable task it was to reconcile Bohr’s and Schrödinger’s positions into one interpretation of quantum theory that all could endorse, at least as a starting point. The different ontological interpretations of quantum theory discussed below had as their starting point this Copenhagen interpretation, which remains the most widely-held view of what quantum theory says about what is real.

Those gathered at Copenhagen were excited by their explorations of this different, revolutionary understanding, but, at the same time, they were humbled by the

¹¹⁰ Ibid..

¹¹¹ Ibid., pp. 116-117.

¹¹² Ibid., p. 117.

¹¹³ Heisenberg (1958), p. 43.

implications of their work. It would be possible to consider their discoveries as a triumph over classical, Newtonian physics, but this was not how they looked at the situation. Much as did Einstein, they collectively respected the body of knowledge that quantum theory seemed to make obsolete. According to Torretti (1990):

By exposing [the flaws in Newtonian premises] Einstein undermined the entire stock of notions built upon or intertwined with [them]. However, neither he nor his fellow physicists yielded to the cheap temptation of dismissing Newtonian science as one big connected piece of nonsense. On the contrary, they were at pains to show how, in the light of the new mode of thought, the Newtonian system possessed both meaning and truth, within appropriate limits.¹¹⁴

As Heisenberg (1958) put it, “wherever the concepts of Newtonian mechanics can be used to describe events in nature, the laws of Newton are strictly correct and cannot be improved.”¹¹⁵ What quantum theory made clear is that Newtonian mechanics cannot describe all events in nature, at all levels of analysis.

The group at Copenhagen had, after months of discussion and intensive study, arrived at what they felt was a complete and satisfactory (at least to most of them) atomic theory. They were, however, as troubled as other scientists of their time were by what it all might mean. Heisenberg (1958) summed up their feelings with this account of his own:

I remember discussions with Bohr which went through many hours till very late at night and ended almost in despair; and when at the end of the discussion I went alone for a walk in a neighboring park I repeated to myself again and again the question: Can nature possibly be as absurd as it seemed to us in these atomic experiments?¹¹⁶

Many Quantum Realities and a “No-Model” Model of the World

In the years since the 1926 Copenhagen sessions, the details of what might be called “quantum facts” have been fleshed out—additional and more fundamental particles have been produced or observed in particle accelerators—and the basic theory has consistently been shown to accurately reflect and describe experimental phenomena of all kinds. As new generations of physicists have worked with quantum theory, many have attempted to put their own fresh spin on the significance or meaning of these quantum facts in reference to what we can say about what is real. Some of these interpretations strike us as being fairly straightforward; some require that we suspend disbelief about the world and our roles in its ongoing creative processes; some are fantastic—too fantastic for us to

¹¹⁴ Torretti, R. (1990) *Creative understanding: Philosophical reflections on physics*. Chicago, IL: The University of Chicago Press, p. 49.

¹¹⁵ Heisenberg (1958), p. 97.

¹¹⁶ *Ibid.*, p. 42.

believe possible; all of them require that we accept a level of ontological complexity with which we are uncomfortable. Even the most unbelievable have been proposed by credible scientists—the all carry with them the cachet of scientific legitimacy, even those that seem like mysticism. The interpretations summarized below have had a revolutionary impact in both today’s physics and today’s philosophy.¹¹⁷

Bohr’s Copenhagen Interpretation¹¹⁸

Neils Bohr consistently held that the facts revealed by the application of quantum theory demonstrated that there is no deep reality—that the real world in which we live and work “floats on a world that is not as real.”¹¹⁹ This argument contends that “quantum objects in their unmeasured state literally have no dynamic attributes...[or that] whatever attributes objects might possess are contextual: they depend upon the measurement situation.”¹²⁰ There is no statement we can make about unmeasured quantum objects.

The standard Copenhagen interpretation’s resolution of the measurement problem assigns an important role to how we ascribe meaning to atomic objects—a “construction of reality by mental acts,” by the choices we make between complementary attributes and measuring devices.¹²¹ Much the way we fill in missing information to make an ordinary object conform to our expectations—or choose to see, as in the classic example of a line drawing of a cube, the cube facing us directly or the cube facing up and to the right, we make choices in what or how we will examine quantum objects, and these choices affect the aspect of the object we see.¹²² In spite of the drawbacks of the Copenhagen interpretation, the most prominent of which is the privileged status it accords to experimental apparatus, this view “to this day...constitutes the conventional wisdom of the physics community.”¹²³

The Copenhagen Interpretation, Variation Two¹²⁴

¹¹⁷ A good, if necessarily brief, summation of the varied explanations of these alternative interpretations of quantum theory and their implications on how we understand what is real can be found in Davies, P. (1983) *God and the new physics*. New York: Touchstone, pp. 100-118.

¹¹⁸ The summary descriptions that follow are based on Nick Herbert’s short introductory descriptions. For this summary, see Herbert, N. (1985) *Quantum reality: Beyond the new physics*. New York: Anchor, pp. 16-17 and pp. 158-164. Additional sources for the same interpretive categories are noted for each. Cf. Wolf, F. A. (1989), pp. 127-151; and Casti, J. L. (1989a) *Paradigms lost: Images of man in the mirror of science*. New York: William Morrow and Company, Inc., pp. 442-446.

¹¹⁹ Herbert (1985), p. 16; cf. Penrose (1989), p. 280.

¹²⁰ Casti (1989a), p. 442, emphasis in original.

¹²¹ Wolf, F. A. (1989), p. 128, emphasis in original; *ibid.*, p. 130.

¹²² *Ibid.*, p. 131.

¹²³ Casti (1989a), p. 443.

¹²⁴ Herbert (1985), pp. 17-18 and pp. 164-168.

A second variation of the standard interpretation, sometimes called the Austin interpretation, is largely the work of John Wheeler of the University of Texas.¹²⁵ The original Copenhagen interpretation insists that there is no deep reality, only phenomenal, or surface, reality; Wheeler's view holds that phenomenal reality is created by the act of observation. Wheeler argues, "No elementary phenomenon is a real phenomenon until it is an observed phenomenon."¹²⁶

Even the reality of the past is held hostage to this theory—"the past exists only insofar as it is present in the records we have today. And the very nature of those records is dictated by the measurement choices we exercised in generating them."¹²⁷ The essence of measurement, according to this view, is not merely choosing an experimental design and then observing, but making a record of one's observation.¹²⁸ Wheeler and his colleagues devised an experiment—the delayed-choice experiment—to confirm their interpretation. In this variation of the double-slit experiment of Thomas Young, the observer does not choose which slits to open until after the quantum objects have passed them.

The phenomena consistently display the particle or wave characteristic appropriate to the configuration of the apparatus chosen. It seems as if the photon or electron "chooses" to appear as a particle or wave in accordance with the observer's choice of configuration.¹²⁹ It is the observer, in choosing an aspect to measure, in the act of measurement, and in the recording of the outcome, that makes the dynamic attributes of the quantum object real.

Thought Experiments Posed in Opposition to Orthodoxy: A Digression

Of the thought experiments developed and posed to demonstrate some of the weirdness of the orthodox view coming out of Copenhagen, two should be mentioned at this point—the infamous "Schrödinger's Cat" experiment and that posed by Albert Einstein, Boris Podolsky, and Nathan Rosen, now known as the EPR paradox.¹³⁰ The first of these arose from Erwin Schrödinger's discomfort with the level of importance assigned to the observer as the catalyst bringing about the collapse of the wavefunction by the Copenhagen interpretation; the second was Einstein's final and best effort to demonstrate that quantum theory is incomplete.

If all that we know about an atomic object prior to measurement is the collective probabilities of its potential positions and momenta that is described mathematically by a wavefunction, and if in measuring the phenomenon we find a well-defined position or

¹²⁵ Casti (1989a), pp. 446-450.

¹²⁶ Wheeler is quoted by Herbert (1985), p. 18; and Casti (1989a), p. 447.

¹²⁷ Casti (1989a), p. 447.

¹²⁸ Herbert (1985), p. 167.

¹²⁹ The delayed-choice experiment is described fully in Herbert (1984), pp. 164-168; and Casti (1989a), pp. 447-450.

¹³⁰ Gribbin (1984), p. 181.

momentum, then something about measurement resolves all of the potential attribute qualities into the one actual attribute we measured. This mysterious something is designated as the collapse of the wavefunction. The wavefunction can be imagined as all possible paths an atomic object can take, expanding without limit. It can be visualized as the virtual realm in which the atomic object exists in all possible states at the same time, a superposition of states first demonstrated mathematically in 1928 by Paul Dirac.¹³¹ The act of measurement affects this virtual world in such a way that this superposition of states resolves into the one state that is recorded by measurement. As Lindley (1996) defines it, “measurement is an act by which the measurer and the measured interact to produce a result. It’s not simply the determination of a preexisting property.”¹³²

Mathematician John von Neumann, after laboriously working out the mathematics, could not find a place to locate the “collapse.” On each side of the collapse, he could describe the state of the atomic object, but the transition at measurement could only be described as, “And then, a miracle occurs.”¹³³ This missing step is the measurement problem of quantum theory.

Schrödinger’s thought experiment, first published in 1935, was intended to highlight the absurdity of relating observation or measurement to the resolution of a superposition of states, and to demonstrate that orthodox quantum theory, although an elegant explanation of subatomic process, is incomplete.¹³⁴ Gribbin’s (1984) account of the thought experiment is as follows:

Schrödinger suggested that we should imagine a box that contains a radioactive source, a detector that records the presence of radioactive particles (a Geiger counter, perhaps), a glass bottle containing a poison such as cyanide, and a live cat. The apparatus in the box is arranged so that the detector is switched on for just long enough so that there is a fifty-fifty chance that one of the atoms in the radioactive material will decay and that the detector will record a particle. If the detector does record such an event, then the glass container is crushed and the cat dies; if not, the cat lives. We have no way of knowing the outcome of this experiment until we open the box to look inside; radioactive decay occurs entirely by chance and is unpredictable except in a statistical sense...According to the strict Copenhagen interpretation...the equal probabilities for radioactive decay and no radioactive decay should produce a superposition of

¹³¹ Mooney (1996)

¹³² Lindley, D. (1996) *Where does the weirdness go? Why quantum mechanics is strange, but not as strange as you think*. New York: Basic Books, p. 21.

¹³³ Herbert (1985), pp. 145-149. Von Neumann’s work was help up for decades as proof that more realist “hidden variables” interpretations of quantum theory were impossible. An elementary error in the math was discovered by John Bell in 1966. Cf. Gribbin (1995), pp. 152-156; and Prigogine, I. with I. Stengers (1996) *The end of certainty: Time, chaos, and the new laws of nature*. New York: The Free Press, p. 130.

¹³⁴ Gribbin (1984), p. 203; cf. Penrose (1989), pp. 290-293; and Mooney (1996), p. 87.

states...Until we look inside, there is a radioactive sample that has both decayed and not decayed, a glass vessel of poison that is neither broken nor unbroken, and a cat that is both dead and alive, neither alive nor dead.¹³⁵

Schrödinger's purpose in proposing this problem was to demonstrate that the orthodox view is flawed by assuming a collapse of the wavefunction and a role for the observer in determining the outcome—"obviously the cat cannot be both alive and dead at the same time."¹³⁶ Prior to opening the box, the event has taken place or not, the cat has been poisoned or not. Introducing a human observer cannot, according to our commonsense understanding, have caused the experimental system to choose a state of being.

Where a superposition of states is an elegant concept for quantum-level events and entities, and while it is easy to distinguish between particle aspects of an atomic phenomenon and its wave aspects, when we experiment at the macro-level of the classical world in which we live, such distinctions between states become more difficult. Orthodox quantum theory is built of statistical descriptions of small-scale entities. As Heisenberg (1970) puts it, "In large-scale processes this statistical aspect of atomic physics does not arise, generally because statistical laws for large-scale processes lead to such high probabilities that to all intents and purposes we can speak of the processes as determined."¹³⁷ It was once thought that once we cross over the line to experimental media that is "classical," not quantum in size, that superpositions are impossible to achieve. However, recent experiments have produced just such conditions—not, however, in entities as large and complex as a cat.¹³⁸ The debate about the implications of this thought experiment continue, unresolved, to this day.

Albert Einstein had been arguing for years with Bohr and the Copenhagen group about some disturbing aspects of the orthodox theory—especially about its reintroduction of action at a distance and about instantaneous transmission of information, violating his rule that nothing can travel faster than light. He was unhappy, as we have discussed earlier, about the randomness inherent in quantum theory and its reliance on probability to describe nature. But, quantum theory's violation of the universe's "speed limit" led him

¹³⁵ Ibid., pp. 203-205; cf. Baggott (1992), pp. 102-106).

¹³⁶ Ibid., p. 205.

¹³⁷ Heisenberg, W. (1970) *The physicist's conception of nature*. Trans. A. J. Pomerans. Westport, CT: Greenwood Press, Publishers, pp. 41-42.

¹³⁸ One example concerns superconducting rings. In a superconducting device, electrons move without friction because they display coherent attributes, and, as do all electrons moving as electric current, they create a magnetic field. If a superconducting ring is slightly broken, the coherent flow of the electrons continues, but instead of one magnetic field, two fields exist in superposition. See, Lindley, D. (1996), pp. 172-177; cf. Baggott (1992), pp. 180-182. In a more recent experiment, scientists have shown that teaspoonsful of a helium isotope at near absolute zero temperature exhibit superposition qualities, generating waves of atoms across a thin boundary between two energy levels. See Supplee, C. (1997, July 31) Oddball state of matter detected. *The Washington Post*, p. A3.

to believe that the orthodox interpretation was incomplete—that some “hidden variables” concept must be the true explanation for quantum events and properties, one that would provide a true picture or model of reality.

Consequently, he engaged in a decade-long debate with Bohr on this issue culminating in his development, with some of his colleagues at Princeton, of a thought experiment designed to demonstrate the inadequacy or incompleteness of quantum theory, not as this effects the results of atomic experiments, but as an explanation of reality.¹³⁹ Einstein, Podolsky, and Rosen, posed the problem in this way: “If, without in any way disturbing a system, we can predict with certainty (i.e. with a probability equal to unity) the value of a physical quantity, then there exists an element of physical reality corresponding to this physical quality.”¹⁴⁰

The EPR experiment consists of producing two atomic objects—two electrons or two photons, for example—that share a wavefunction and then separating them by a great distance.¹⁴¹ Quantum theory assumes that, in the case of such quantum “twins,” a measurement of a dynamic attribute of one—recording the spin of an electron, the polarization of a photon, or the position or momentum of a particle—instantaneously affects the same dynamic system of the other, regardless of their distance apart. This assumes, as Baggott (1992) puts it, some “spooky action at a distance.”¹⁴² For Einstein, this idea was absurd on its surface; he assumed there must be some aspect of dynamic attributes firmly rooted in reality, although hidden, that explains this phenomenon. The problem posed was founded on two related assumptions: that nothing can move faster than light speed and that reality is rooted in local action.

Einstein and his colleagues argued that if, according to the Copenhagen interpretation, we measure the position of one particle with certainty, we know the position of the second with certainty without a measurement—position is a real physical attribute of both particles. Likewise, if we measure the first particle for its momentum, we know the momentum of the second without a measurement. Real physical attributes of the second particle—the one of the twins unmeasured and undisturbed—are determined by our arbitrary choice of what to measure in the first particle.¹⁴³ They conclude that “no reasonable definition of reality could be expected to permit this.”¹⁴⁴

¹³⁹ Herbert (1985), p. 209; Lindley (1993), pp. 92-93; and Mooney (1996), pp. 85-87.

¹⁴⁰ Einstein A., B. Podolsky, and N. Rosen (1935) Can quantum-mechanical description of physical reality be considered complete? *Physical Review*, 47, (May 1935), p. 777.

¹⁴¹ This paraphrase of the EPR paradox is taken from Herbert (1985), pp. 199-210.

¹⁴² Baggott (1992), p. 99.

¹⁴³ The problem can equally be posed in terms of measuring the spin of one electron, and thus knowing the spin value of the other, or measuring the polarization value of one photon, and knowing the polarization value of the other.

¹⁴⁴ Einstein, et al. (1935), p. 777.

Einstein's understanding of locality demands that when the quantum particles separate, the entangled wavefunction that defines their potential properties must separate, as well. Bohr maintained that once the wavefunction becomes entangled (when the particles become twins), that same wavefunction stretches across space containing the potential attributes of both particles. Einstein's separate wavefunctions require some local intervention—such as a checklist of possible real attributes inherent in each wavefunction; Bohr's entangled wavefunction collapses across space as well as time to define the physical properties of both particles at the same moment.¹⁴⁵

Bohr's reply to the EPR paper was a restatement of his principle of complementarity and went on to argue that the ambiguity expressed in the assumed conditions for reality imposed by EPR—the meaning of the expression 'without in any way disturbing a system'—predetermines the answer arrived at by Einstein.¹⁴⁶

The question of which view would prevail remained unanswered, even theoretically, until in the 1960s, John S. Bell began to work with the mathematical proofs of von Neumann that had, it was argued, precluded the possibility of hidden variables. His mathematical construct, Bell's theorem, "rejects all models of reality possessing the property of 'locality'."¹⁴⁷ Bell's theorem offered only three possible explanations for quantum results: Bohr is right that there is no underlying reality; there is an influence that is non-local; or measurements of the "twins" are not really independent.¹⁴⁸ What Bell demonstrated was that in any experiment of the class including EPR, the assumption of locality leads to an inequality that must show up in experimental results.¹⁴⁹ And, he achieved "a separation between two issues—probability and nonlocality—that Einstein had thought were inextricably intertwined."¹⁵⁰ When the experiment is conducted, the results violate Bell's inequality. Therefore, "any local-reality assumption is mistaken ... [and] any reality that underlies the EPR experiment must be non-local."¹⁵¹

That Bell's theorem is based on fact was demonstrated by Alain Aspect in 1981 and 1982, through experiments that were structured to look at polarization in twin photons.¹⁵² Without going into the details of these actual, not thought, experiments, their results confirmed the conclusions of Bell's theorem.¹⁵³ Aspect's results "[verify] the strongly

¹⁴⁵ Baggott (1992), p. 102.

¹⁴⁶ Ibid., pp. 100-101.

¹⁴⁷ Herbert (1985), p. 212.

¹⁴⁸ Lindley (1996), p. 145.

¹⁴⁹ Mooney (1996), pp. 94-97.

¹⁵⁰ Lindley (1996), p. 152.

¹⁵¹ Ibid.

¹⁵² Lindley (1993), p. 97; cf. Rohrlich, F. (1983) Facing quantum mechanical reality. *Science*, 221, No. 4617 (September), pp. 1251-1255; and Shimony, A. (1988) The reality of the quantum world. *Scientific American* (January, 1988), pp. 46-53.

¹⁵³ A complete description of the Aspect experiments and the earlier work of John Clauser can be found in Herbert (1984), pp. 224-227, in Baggott (1992), pp. 139-150, and in most of the articles included in

correlated quantum theoretical predictions, hence violating Bell's inequality and supporting his contention that our phenomenally local world is in actuality supported by an invisible reality which is unmediated, unmitigated, and faster than light."¹⁵⁴ Even should quantum theory itself someday fail, any replacement theory must "likewise violate Bell's inequality when it comes to explaining the twin state."¹⁵⁵ It does not matter how we come to describe deep reality—"Aspect's results prove that nonlocality is part of nature, regardless of anything to do with quantum mechanics."¹⁵⁶

Reality as Undivided Wholeness¹⁵⁷

We return to our summaries of the principal ontological interpretations of quantum theory with the work of David Bohm. Bohm came to develop his interpretation of quantum theory when, in 1951, he wrote a book attempting to explain Bohr's position and found he couldn't fully accept that position.¹⁵⁸ Bohm earned a reputation as something of a rebel and as well as a heretic. Because he refused to testify about his colleagues in the Manhattan Project before the House Un-American Activities Committee, he was indicted for contempt of Congress. He was ultimately acquitted, but found difficulty in getting a job in the United States, so emigrated to the United Kingdom.¹⁵⁹

Unable to subscribe to the orthodox view, he developed his theory of unbroken wholeness.¹⁶⁰ Bohm argues that, as opposed to the assumptions of the standard theory, atomic objects are true particles that do have objective dynamic attributes.¹⁶¹ We are, however, unable to measure those attributes without disturbing the pilot waves (or proxy waves) associated with the particles—waves that express the quantum potential in a multi-dimensional configuration space, and that connect all of the universe in each experimental or observational situation.

In his later years, Bohm described this interconnection of all with all in the universe as the one point of common reference between quantum theory—characterized by discontinuity, indeterminism, and non-locality—and the general theory of relativity—characterized by "strict continuity, strict determinism, and strict locality."¹⁶² What he means by interconnection goes beyond a warm feeling that all aspects of reality are

Cushing, J. T. and E. McMullin, eds. (1989) *Philosophical consequences of quantum theory: Reflections on Bell's theorem*. Notre Dame, IN: University of Notre Dame Press.

¹⁵⁴ Herbert (1985), p. 227.

¹⁵⁵ Ibid.

¹⁵⁶ Lindley (1996), pp. 152-153.

¹⁵⁷ Herbert (1985), pp. 18-19 and pp. 168-172; Albert (1992), pp. 134-179; Gribbin (1995), pp. 156-160; Wolf, F. A. (1989), pp. 177-183; Mooney (1996), pp. 91-93; and Casti (1989a), pp. 461-465.

¹⁵⁸ Gribbin (1995), p. 157.

¹⁵⁹ Ibid.; cf. Casti (1989a), pp. 461-462.

¹⁶⁰ The orthodox view is generally held to be either of the Copenhagen interpretations.

¹⁶¹ Casti (1989a), p. 462.

¹⁶² Bohm, D. (1985) *Unfolding meaning: A weekend of dialogue*. London: Routledge, p. 8.

related. Rather, we can understand what he means by unbroken wholeness through the metaphor of a hologram—the whole is contained in each of the parts. The order of the universe is everywhere in the process of enfolding and unfolding to create the separations between things that we experience as the natural world.¹⁶³

Bohm's theory has been described as a story of the world that satisfies both those who see the world as determined and those whose model is probabilistic. It all begins, appropriately, with a stipulation of the initial conditions of the universe. Bohm's theory stipulates "that what God did when the universe was created was first to choose a wave function for it and sprinkle all of the particles into space in accordance with the quantum-mechanical probabilities, and then, to leave everything alone, forever after, to evolve deterministically."¹⁶⁴ In this story there is no measurement problem, no collapse of the wave function, there is only the appearance of those events.¹⁶⁵ What there is, according to Bohm, is a universe connected throughout time by a single wave function that has evolved, moving matter around and precipitating the unfolding of what is implicate, or enfolded, in the wave into the objects we see around us in the classical world we inhabit. Bohm's interpretation, as it developed through his career, then is built on both the notion of order—enfolded or explicit—and interconnection and holism.¹⁶⁶

The Many-Worlds Interpretation¹⁶⁷

On its surface, Hugh Everett's many-worlds interpretation of quantum theory may strike the non-scientist as the strangest of all these strange understandings of reality. What this variation accomplishes—the elimination of the measurement problem—is outweighed by the means it uses to do so. Everett argues that with each measurement of a quantum object, which in orthodox theory collapses the wavefunction of potential states into the one observed actual state, there is no collapse. Instead, measurement brings all of the potential states into actuality, but in separate universes. "Everett's theory claims that whenever the [quantum] system and measuring device interact, the new system composed of the two splits into as many copies as there are possible outcomes of the measurement."¹⁶⁸ There only appears to be one universe to us observers because we are restricted to one of these universes, each of which is one of an infinite number of parallel planes of existence.¹⁶⁹

¹⁶³ Ibid., pp. 1-32; cf. Bohm D. and B. J. Hiley (1987) Non-relativistic particle systems. *Physics Reports (Review Section of Physics Letters)*, 144, No. 6, pp. 323-348, p. 329.

¹⁶⁴ Albert (1992), pp. 144-145.

¹⁶⁵ Ibid., pp. 169-170.

¹⁶⁶ Baggott (1992), pp. 165-167.

¹⁶⁷ Herbert (1985), pp. 19-20 and pp. 172-175; Gribbin (1995), pp. 160-166; Gribbin (1984), pp. 235-254; Wolf, F. A. (1989), pp. 218-225; Baggott (1992), pp. 194-201; Penrose (1989), pp. 295-296; Mooney (1996), pp. 90-91; and Casti (1989a), pp. 453-456.

¹⁶⁸ Casti (1989a), p. 454, emphasis in original.

¹⁶⁹ Ibid.; cf. Herbert (1985), p. 173.

Underneath seems to some as the mysticism of the many-worlds interpretation appears to others as having some basic similarity to the more “realist” explanations. In Bohm’s theory, for instance, the initial conditions of a wave function for the universe and appropriate quantum rules works in much the same way as Everett’s parallel universes do. Each explains the classical appearance of the everyday world based on the potential information contained in a wavefunction. For Bohm, that information plays out in a deterministic way, unfolding a classical world. For Everett, the richness of that information is not wasted through discarding the potential not realized in measurement, but is, instead, preserved in an unreachable alternate universe.

Herbert (1985) describes change as resulting from two fundamentally different processes. Change that occurs as a result of the collapse of the wavefunction by an observation or measurement will be sudden and discontinuous in nature. Change can also be a smooth, continuous flow, but this kind of change is confined to the wavefunctions representing object, not to the objects themselves. Waves represent all that could happen in reality, and orthodox quantum theory understands completely how waves behave. Waves can predict, within the limits of uncertainty, how matter behaves. Both smooth transitions in waves and discontinuous transitions in quantum measurements combine to bring changing reality into being.¹⁷⁰ In Everett’s many universes, all change is flow, because there is no collapse of the wavefunction.¹⁷¹

The Quantum Logic Interpretation¹⁷²

The simplest description of this quantum theory variation is that what is real in the world is organized by a different and unavailable kind of logic—it “obeys a non-human kind of reasoning.”¹⁷³ Ordinarily, we rely on Boolean logic, which prescribes the use of such language connectors as “and,” “or,” and “not,” to make sense of the relationships between objects. The attributes of quantum objects do not seem to consistently obey the rules of Boolean logic. There are attributes that do follow the Boolean rules, such as velocity; the velocity of a new particle created by collision of two particles is the sum of their pre-collision velocities (velocity A and velocity B). One of the most crucial of the laws of Boolean logic is the distributive law, which is expressed as: X or (Y and Z) = (X or Y) and (X or Z).¹⁷⁴

The polarization of light, an important dynamic quantum attribute, does not obey this distributive law.¹⁷⁵ Light can be polarized in three directions—vertically or horizontally

¹⁷⁰ Wolf, F. A. (1989), p. 219.

¹⁷¹ Ibid., p. 221.

¹⁷² Herbert (1985), pp. 20-22 and 177-185; Casti (1989a), pp. 458-461.

¹⁷³ Herbert (1985), p. 20.

¹⁷⁴ Casti (1989a), p. 459.

¹⁷⁵ Casti (1989a), pp. 458-459.

or diagonally; light cannot, however, be completely polarized in two orthogonal directions—both vertical and horizontal—at the same time.¹⁷⁶ According to the distributive law, “the collection of all those photons polarized both horizontally and diagonally plus those polarized vertically consists of those that are vertically or horizontally polarized plus those that are vertically or diagonally polarized.”¹⁷⁷ In an experimental setting, if light is passed through a horizontal filter and then a vertical filter, no light emerges. If a diagonal filter is placed either before the horizontal one or after the vertical one, this remains true. However, placing a diagonal filter between the other two, allows light to proceed through the arrangement. The distributive law does not apply to photon polarization.¹⁷⁸

Thus, say the proponents of quantum logic, there must be a non-Boolean kind of logic at work in the quantum world. Where classical objects are entirely open to view, quantum objects have both compatible attributes that follow Boolean rules and complementary attributes that have hidden relationships.¹⁷⁹ According to quantum logic, “the quantum world consists of individual islands on which the ordinary rules of logic apply (the case of individual attributes)...But these islands combine their attributes in a way that can only be described by some weird, nonstandard rules applicable solely to the world of the quantum.”¹⁸⁰

A quantum logic interpretation supports a theory in which quantum particles “actually possess their measured attributes” much as classical objects do. What differs is that a classical object’s attributes can only go together in one way, while a quantum object’s attributes can combine or be revealed in a number of ways limited only by the variety of ways the associated wave can be analyzed.¹⁸¹ As principal quantum logician, David Finkelstein of Georgia Tech, says, it isn’t strange that quantum objects have definite attributes at all times, but what is strange is “the way these attributes are combined to form what we see with our measuring instruments.”¹⁸² This variation of quantum theory supports, then, the existence of an objective reality, but can only explain its existence by creating a kind of logic whose operations are alien to human thinking.

Einstein’s Neorealism¹⁸³

¹⁷⁶ Polarized sunglasses are based on this principle.

¹⁷⁷ Casti (1989a), p. 459.

¹⁷⁸ *Ibid.*, p. 460.

¹⁷⁹ Herbert (1985), p. 181.

¹⁸⁰ Casti (1989a), p. 460.

¹⁸¹ Herbert (1985), pp. 181-182.

¹⁸² Casti (1989a), p. 461.

¹⁸³ Herbert (1985), pp. 22-24 and 185-189; Casti (1989a), pp. 457-458; Gell-Mann (1994), pp. 168-170; and Gribbin (1995), pp. 152-156.

Although he had played a major role in the development of quantum theory, Albert Einstein never accepted the implications of the orthodox (Copenhagen) view with respect to the question of the existence of an objective reality. Einstein maintained a position that “behind the weird quantum world lay a hidden reality of concrete objects and forces moving in accordance with the more traditional notions of cause and effect.”¹⁸⁴ Although he had to acknowledge the fuzziness that characterized quantum phenomena, Einstein hoped that it was caused by “observational inadequacy” and imprecise instruments.¹⁸⁵ During his decade-long debate with Bohr that culminated with the EPR paradox, Einstein tried to prove that the orthodox position was inconsistent, but ultimately could only argue that it had to be incomplete.¹⁸⁶

Neorealists contend that “the ordinariness of direct experience can be explained by an equally ordinary underlying reality.”¹⁸⁷ The act of measuring the dynamic attributes of quantum objects is like any everyday measurement—“they are a confirmation of something that existed all along.”¹⁸⁸ Assuming that attributes like position and momentum are inherent properties of quantum objects, then it is the wavefunction description that must be incomplete. “This means there must be hidden variables whose values, when known, collapse the wave function into a single possibility.”¹⁸⁹ The measurement problem then becomes merely a result of the incompleteness of the quantum description, not a question of through what mechanism an act of observation can trigger the presence of measurable attributes. The next interpretation designates the power of human consciousness as that elusive mechanism.

Consciousness and the Collapse of the Wavefunction¹⁹⁰

Proponents of an interpretation of quantum theory that identifies consciousness as the mechanism for the collapse of the wavefunction—creating or giving definition to dynamic attributes—and those who see consciousness as a quantum process itself have

¹⁸⁴ Davies and Gribbin (1992), p. 221.

¹⁸⁵ Ibid.

¹⁸⁶ Ibid., p. 222.

¹⁸⁷ Herbert (1985), p. 185.

¹⁸⁸ Casti (1989a), p. 458.

¹⁸⁹ Ibid.

¹⁹⁰ Herbert (1985), pp. 24-26 and pp. 189-193; Gribbin (1995), pp. 149-152; Baggott (1992), pp. 185-194; Wolf, F. A. (1989), pp. 213-218 and pp. 227-250; and Heisenberg, W. (1979) *Philosophical problems of quantum physics*. Woodbridge, CT: Ox Bow Press, pp. 92-94. For fuller explications of the consciousness-creates-reality point of view and the consciousness-is-a-quantum-process point of view, see: Penrose (1989); Herbert, N. (1993) *Elemental mind: Human consciousness and the new physics*. New York: Plume; Stapp, H. P. (1993) *Mind, matter, and quantum mechanics*. Berlin: Springer-Verlag; Kafatos, M. and R. Nadeau (1990) *The conscious universe: Part and whole in modern physical theory*. New York: Springer-Verlag; Zohar, D. (1990) *The quantum self: Human nature and consciousness defined by the new physics*. New York: Quill; and Zohar, D. and I. Marshall (1994) *The quantum society: Mind, physics, and a new social vision*. New York: William Morrow and Company, Inc.

moved science away from the Cartesian mind-body divide that characterizes the philosophical position of Newtonian mechanics. The first to suggest the possibility that human consciousness triggers the collapse was John von Neumann.¹⁹¹ He reasoned that measuring devices are themselves composed of quantum particles, and therefore could, in principle, exist in a superposition of states. Since we conscious observers do not experience this superposition—see, for instance, only one pointer position—von Neumann concludes that some quality of the conscious mind resolves the utterly ambiguous situation into a coherent experienced measurement.¹⁹²

This interpretation differs from the Austin interpretation discussed above. The choices involved in designing the experiment and assembling the equipment may affect which aspect of the quantum object appears and is recorded, as in either position or momentum. Consciousness, according to von Neumann and its other proponents, not only affects outcomes at that level, but also “selects which one of the many position [or momentum] possibilities actually becomes realized.”¹⁹³ In an encounter with the conscious mind, the quantum situation becomes determined both in kind—which dynamic attribute—and in amount—which value of that attribute.

Eugene Wigner carries von Neumann’s consciousness argument a step further: “the wavefunction collapses when it interacts with the first conscious mind it encounters.”¹⁹⁴ It has been suggested that this might resolve the problem with Schrödinger’s cat—if you allow that the cat is a conscious creature, “its fate is already decided (by its own consciousness) before a human observer lifts the lid of the box.”¹⁹⁵ The question may arise then, if a cat has a highly-evolved enough consciousness, what about lower life forms or inanimate objects?¹⁹⁶ Richard Feynman questions where to draw the line between mind and matter. Seeing that humans and cats and amoebas, not to mention trees and rocks, are all simply patterns of atoms, he imagines the possibility of “atoms with consciousness...matter with curiosity.”¹⁹⁷ He notes that, while atoms in the brain are replaced, the pattern remains; “the thing which I call my individuality is only a pattern or dance. The atoms come into my brain, dance a dance, then go out: always new atoms but always doing the same dance, remembering what the dance was yesterday.”¹⁹⁸

The question of what constitutes consciousness itself remains a mystery. Wolf (1989) describes consciousness as “both the awareness and the creation of experience...the being

¹⁹¹ Herbert (1985), p. 189.

¹⁹² Baggott (1992), p. 186.

¹⁹³ Herbert (1985), p. 192.

¹⁹⁴ Baggott (1992), p. 188, emphasis in original.

¹⁹⁵ Ibid.

¹⁹⁶ Herbert (1993), p. 170.

¹⁹⁷ Feynman, R. (1968-69) The value of science. *Project Physics Reader 1*, authorized interim version, p. 3.

¹⁹⁸ Ibid., p. 4.

and the knowing of experience.”¹⁹⁹ A consciousness-driven theory of reality inescapably involves will—the will “to note or not to note reality...reality noticed is reality created.”²⁰⁰ Noticing is the focusing of consciousness, bringing some elements into sharp detail and allowing other elements to remain indistinct. Interpretations of quantum theory that assign to consciousness the power to “create” what is real reflect the connection of mind and matter in a co-evolving relationship. The notion of will is, according to Stapp (1993), no illusion: “it correctly represents the functional efficacy of the conscious creative act both in the world of conscious experience and in the physical world represented by quantum theory.”²⁰¹

The quantum “revolution” not only has required that we re-examine our ontological assumptions in the broadest sense, but also that we re-examine our conceptions of self and mind. Heisenberg acknowledged that “the changes introduced by quantum theory have affected the position of theories of perception in such a way that those aspects of reality characterized by the words ‘consciousness’ and ‘spirit’ can be related in a new way to the scientific conception of our time.”²⁰²

Even the structure and function of the brain have been shown to have quantum-like qualities, and these qualities are connected to the theorized ability of the consciousness to realize actualities out of potentialities.²⁰³ “Conscious events can be naturally identified with certain special kinds of quantum events, namely quantum events that create large-scale integrated patterns of neuronal activity in human brains...Each such event in the brain influences the course of subsequent events in the brain, body, and environment through the mechanical propagation of the potentialities created by that event.”²⁰⁴ The physics and chemistry of the brain are such that events at the quantum level lead to responses at the level of the organism that lead to manipulation of the environment. In this way mind and matter interact holistically through processes mediated by consciousness.

Heisenberg’s Duplex World²⁰⁵

One of the original Copenhagen theorists, Werner Heisenberg never strayed too far from the orthodox position. First, it is clear that in some way the quantum wavefunction “encapsulates all the possible attributes a quantum object can display.”²⁰⁶ Second, in the

¹⁹⁹ Wolf, F. A. (1989), p. 229, emphasis in original.

²⁰⁰ Ibid.

²⁰¹ Stapp (1993), p. 115.

²⁰² Heisenberg (1979), p. 92.

²⁰³ See, especially, Zohar (1990) and Stapp (1993).

²⁰⁴ Stapp (1993), p. 213, emphasis in original.

²⁰⁵ Herbert (1985), pp. 26-27 and 193-195; Casti (1989a), pp. 450-453; and Stapp (1993), pp. 123-126 and pp. 190-191.

²⁰⁶ Casti (1989a), p. 450.

act of measuring the attributes of quantum objects, we experience those attributes as having real values—as Herbert (1985) describes it, “most physicists agree that the results of measurements are truly real.”²⁰⁷ For Heisenberg, these two areas of general agreement led to seeing two parallel levels of reality—one a world of potential and the other a world of actuality—“joined by the act of measurement.”²⁰⁸ Both of these worlds are real, but it is difficult to describe the world of potential in ordinary language—the unmeasured world actually is what quantum theory represents it to be: a superposition of mere possibilities...unrealized tendencies for action, awaiting...measurement that will grant one of these tendencies a more concrete style of being which we humans experience as actuality.”²⁰⁹

According to Stapp (1993), it is this picture of reality that is “most nearly in line with quantum theory as it is used in the practice.”²¹⁰ We can be excused, he says, if like Heisenberg, we think of “nature herself as represented by a quantum state, which, however, must undergo a sudden ‘quantum jump’ in connection with each selection of an actual result from among the ones previously possible.”²¹¹ For Stapp, Heisenberg’s duplex world forms the basis for connecting consciousness to the process of realizing phenomena; it is the location where nature’s “quantum jump” takes place.

Is this world of potential less real than the world of actuality? In the sense that its reality is shadowy and unfinished, one might describe it as less real. However, in the sense that this quantum state of nature contains, in a virtual state, many more possibilities than are actually realized, perhaps it is more real. The notion of such a duplex world permits a picture of reality that has our solid and coherent world of experience resting ultimately “on a strange quantum kind of being no more substantial than a promise.”²¹²

The Transactional Interpretation and Quantum Field Theory²¹³

The last of our various explanations for quantum reality arises out of more recent theoretical and experimental work—work that, in the name of simplifying our understanding of elementary particles, has led to the discovery of what Asimov (1991) has dubbed a “hadron zoo,” and Gribbin, a “particle zoo.”²¹⁴ The early understanding of the nucleus of the atom, for example, brought out the question of how multiple,

²⁰⁷ Herbert (1985), p. 193, emphasis in original.

²⁰⁸ Casti (1989a), p. 451, emphasis in original.

²⁰⁹ Herbert (1985), p. 195.

²¹⁰ Stapp (1993), p. 190.

²¹¹ Ibid.

²¹² Herbert (1985), p. 195.

²¹³ Casti (1989a), pp. 465-467; Zohar (1990), pp.104-106; and Kafatos and Nadeau (1990), pp. 55-59.

²¹⁴ Asimov (1991), p. 273; Gribbin, J. and M. Rees (1989) *Cosmic coincidences: Dark matter, mankind, and anthropic cosmology*. New York: Bantam Books, p. 103. A hadron is one of a family of subatomic particles that are made up of quarks and are subject to the strong force.

positively-charged protons could be stably configured in such proximity with each other without like electrical charges repelling each other. What emerged through the decades is a picture of complexly-related particles—some material and some that carry forces—in what is termed quantum field theory.

The story of quantum field theory begins in 1928 with Dirac's work to integrate quantum mechanics with the theory of special relativity. He arrived at "a theory that predicted the existence of positively-charged electrons...positrons or anti-particles of regular electrons."²¹⁵ This work was the foundation for Feynman's development of his theory of quantum electrodynamics which accounts for all electromagnetic interactions mediated by the photon.²¹⁶

Electromagnetism is one of the four forces of the universe. The other three are: the strong force (that binds the nucleus together); the weak force (that accounts for radioactive decay and the nuclear reactions in stars); and gravity.²¹⁷ In classical physics, particles are seen as being acted on by these forces; in quantum field theory, particles and forces "interact with each other through the exchange of other particles."²¹⁸ Without going into great detail, what we identify as protons and neutrons are composed of smaller particles, the quarks Murray Gell-Mann identified,²¹⁹ bound together in the appropriate arrangements of quark flavors (up and down) through the strong force mediated by particles without mass called gluons.²²⁰ The nucleus itself is bound together by the strong force mediated by another particle, the pion. The weak interaction that permits radioactive decay and the nuclear process in stars is mediated by z and w bosons. And, gravitational force, it is postulated, is mediated by a massless particle dubbed the graviton.²²¹ Zohar (1990) sees these mediating particles—the family of bosons—as "particles of relationship," as they are responsible for the transactions that create reality.²²²

Physicists, mathematicians, and cosmologists have sought to integrate the first three forces—electromagnetic, strong, and weak—with quantum theory, and, if they manage to likewise integrate gravitation, the goal of a unified field or final theory will have been accomplished.²²³ "The lack of a theory joining gravity to the other forces was, and

²¹⁵ Kafatos and Nadeau (1990), p. 55.

²¹⁶ Ibid.

²¹⁷ The strong nuclear force overcomes the repulsion of positively-charged protons to bind them in the nucleus. The weak nuclear force mediates radioactive decay on the small scale of unstable atoms and, on a large scale, the nuclear furnaces of stars.

²¹⁸ Ibid., p. 56.

²¹⁹ Lindley (1993); Asimov (1991), p. 279; and Gell-Mann (1994), pp. 180-192.

²²⁰ Quarks have other distinguishing attributes in addition to flavor with whimsical names like "color," "strangeness," and "charm." See, Gell-Mann (1994), pp180-192.

²²¹ Zohar (1990), pp. 104-106; Kafatos and Nadeau (1990), pp. 57-58; Gibbin and Rees (1989), p. 105.

²²² Zohar (1990), p. 105.

²²³ See, Weinberg (1993) for a complete tracing of this quest.

remains, the final obstacle to the continuing efforts of cosmologists and physicists to understand the birth of our universe, the event of the big bang.”²²⁴

The most salient feature of quantum field theory is that what is “real” is a set of fields that obey the rules of quantum mechanics and of the special theory of relativity. What we see as material or phenomenal reality “is constituted by the transformation and organization of fields and their associated quanta.”²²⁵ In quantum field theory there is an important “complementarity between particles which are localizable in space-time and fields which are not.”²²⁶ What seems to us to be “a continuous description of interactions of fields is interactions of quanta exchanging the carriers of the field [bosons].”²²⁷

It is this exchange aspect of quantum field theory that Feynman and Wheeler expanded on in their transactional interpretation. As each mediating particle (boson) is emitted, its associated wavefunction travels both backward and forward in time. Traces of ambiguity associated with the transactions are obliterated by wave interference—giving the appearance of a collapse without there being such an event.²²⁸ This “handshake” between advanced waves and retarded waves serves as “the vehicle for the transfer of energy, momentum, spin, and so forth.”²²⁹ The transactional interpretation reinforces one aspect of the more realist of the previous interpretations by eliminating the observer as a catalyst in the creation of reality. It “involves real entities that are unobservable [hidden]” but, on the other hand, is built upon “superluminal transfers of information,” and thus complies with Bell’s assertion of nonlocality as a fundamental aspect of any deep reality.²³⁰

Quantum theory in the practice of science has done a superb job in explaining the “what” of how the world works, but, as the above pages demonstrate, has a long way to go in coming to agreement about the “how” or “why” of reality.²³¹ Where Newtonian science led to an ontological position that was clear and precise, modern physics presents a menu of ontological possibilities. There appears to be no “one right way” to view how nature works, and, as a consequence, quantum theory can offer no one ontological direction to inform social theory. This openness can be unnerving for those in need of solid

²²⁴ Lindley (1993), p. 212. The lack of a unified field theory may be a clue that quantum mechanics is a subset of something bigger, just as Newtonian mechanics is a subset of quantum mechanics.

²²⁵ Kafatos and Nadeau (1990), p. 57.

²²⁶ Ibid.

²²⁷ Ibid., p. 58.

²²⁸ Casti (1989a), p. 465-466.

²²⁹ Ibid., p. 466.

²³⁰ Ibid.

²³¹ It is possible to argue that it is not within the realm of quantum theory to explain these things, just as it was not the function of Newtonian physics to do so. However, social science has used the assumptions and findings of classical physics to justify its own assumptions about both how and why social reality works. To counter that inappropriate use of science, our looking at social problems through a quantum lens may open up possibilities that the modern worldview has disallowed.

foundations, but it can also be viewed as a liberating contrast to the clockwork or machine metaphor provided by Newton and Descartes.

All of the various interpretations of quantum theory, despite their differences over how and why, confirm that there is a graininess or imprecision underneath phenomena in the world. That graininess does not too often intrude on the routine activities of people as it goes on beneath our conscious experience at surface of everyday life. However, even in the world Newton so accurately described, the world of phenomena, there are situations and conditions that defy the clockwork image he codified. These conditions and situations are characterized by turbulence, nonlinearity, and a tendency toward disorder. Their study by scientists and mathematicians have been greatly enhanced by increasing computer capacity and sophistication, and the results of these explorations can be found in chaos theory and in theories of complexity.

Chaos, Complexity, and Life

The modern project fostered by the advances of science in the seventeenth century was, first and foremost, a search for order. Science's quest for certainty, order, and predictability was a response of sorts to the chaotic conditions most people faced during the late middle ages. The decline of the Church as a focus of daily living, strife related to the Protestant Reformation, and the stirrings of nationalism and the warfare that accompanied these created a climate in which people sought the comfort of outside authority, objectivity, and proof over the uncertain processes of dialogue and debate.²³² Cartesian notions of certainty or order, and objective, rational processes can be seen as a soothing antidote to such conditions. Likewise, Einstein's insistence on a realist interpretation of quantum theory may also be seen as a quest for certainty—his separation of “objective knowledge from the domain of the uncertain and the subjective” as a response to his experience of “the rise of fascism and anti-Semitism and two world wars.”²³³

In cases where it appeared that the world was not entirely orderly, it was at first assumed that we didn't know enough, or that our tools were inadequate, not that some disorder is natural and unavoidable or possibly even beneficial. Natural processes like turbulence in rivers and unpredictability in weather, it was thought, could be understood and controlled with additional data or additional effort. Enlightenment science tried to develop mathematical descriptions of all processes, but the nonlinear processes associated with turbulence were so complex that they defeated the mathematical tools available at the time. It has only been with the advent of powerful computers late in our century that

²³² See, Toulmin (1990) for a strong argument supporting this view.

²³³ Prigogine, I. with I. Stengers (1996) *The end of certainty: Time, chaos, and the new laws of nature*. New York: The Free Press, p. 185.

solutions to nonlinear differential equations have yielded understanding to these macro-level phenomena.

The idea of order is closely associated with the ideas of unity and simplicity. We tend to think in terms of controlled ideal conditions, with few factors, and in terms of universal laws of nature. For example, closed systems of a few interacting bodies should be, according to classical physics, “perfectly orderly and predictable.”²³⁴ However, as Newton’s contemporary Henri Poincaré discovered, although in an idealized two-body planetary system such as the Earth and the Moon, the orbits determined by Newton’s equations are stable, when a third body—say the Sun—is added, those same equations become “unsolvable.”²³⁵ The many-body problem is essentially a problem of nonlinearity—involving feedback loops that build up to the possibility that small perturbations can cause stable orbits to disintegrate into chaos.²³⁶

For those of us brought up in the Western tradition of philosophy it is difficult to accept that disorder or chaos might be a fundamental condition of the world. As a consequence, we see order as the natural condition, and disorder as an aberration to be conquered and banished. The goal of our science has been to extend order, or, if necessary, to impose order on processes we see as disorderly. We also tend to see these two conditions as absolute alternatives, mutually exclusive—we either have order or we have chaos—there’s no middle way. What chaos theory in mathematics and the new sciences of complexity and ecology demonstrate is that a middle way is not only possible but may also be the principal factor in the evolution of life and in the possibility for sustainable growth and change.

Strange Attractors and Fractal Pictures of Disorder

Advances in computer technology in the 1960s and 1970s have permitted us to understand more fully the complexity represented by nonlinear differential equations. First, we have moved toward solving those equations through the computer’s ever-increasing computational power. Second, we have been able to illustrate the shape of systems described by those equations, and from these graphic representations, we have discovered that nature, although it seems to be orderly, abounds with examples of embedded chaos.

To understand the dynamics of a system, whether orderly or chaotic, involves tracking the way its components behave over time. This is most easily accomplished through

²³⁴ Briggs, J. and F. D. Peat (1989) *The turbulent mirror: An illustrated guide to chaos theory and the science of wholeness*. New York: Harper & Row, Publishers, p. 27.

²³⁵ “The three-body equation can’t be worked out exactly [even in idealized situations]; it requires a series of approximations to ‘close in’ on the answer.” Ibid.

²³⁶ Ibid., p. 28; cf. Capra, F. (1996) *The web of life: A new scientific understanding of living systems*. New York: Anchor Books, p. 121.

mathematics, with variables in equations representing the values of the components of the system. Some of these variables may be held constant, so that the changes and relationships of others can be more closely analyzed through the solution of differential equations. “A differential equation links the rate of change over time of one of the variables with the variable’s current size and the current size of the other variables.”²³⁷ The solutions for even the simplest, least complicated, orderly systems are difficult to achieve, requiring sets of differential equations. In addition, all dynamical systems are different: “the solution of the equations describing the motion of some dynamical system is unique if the initial positions and velocities of all components of the system are known.”²³⁸

Systems whose dynamics are linear yield solutions that show proportional change over time. Nonlinear systems, the predominant type in nature, yield solutions that show a sensitive dependence on initial conditions—small differences in the initial state of the system yield disproportionate and often unpredictable changes as the system moves through time.²³⁹ Despite the fact, as Stewart (1989) puts it, that “nature is relentlessly nonlinear,” attempted solutions to nonlinear differential equations have involved using linear approximations. As late as the middle of this century, mathematicians believed in a linear world and only taught students how to solve linear differential equations.²⁴⁰ “Classical theory deals with shallow waves, low-amplitude vibrations, and small temperature gradients,” and ignored the more common nonlinear systems.²⁴¹

Based on the development of analytic geometry by Descartes, solutions of equations can be graphed or charted, yielding illustrations of the trajectories of systems described by the equations.²⁴² In a mathematical construct known as phase space,²⁴³ intersected by Cartesian coordinates (the x -axis and the y -axis), solutions to differential equations can be mapped. A simple system, like a pendulum, with values for position along the vertical y -axis and values for momentum along the horizontal x -axis, plots an orbit around a point. When the arm of the pendulum reaches its maximum displacement in either direction, its momentum is zero. At less than maximum values for position, momentum is non-zero.²⁴⁴

²³⁷ Peterson, I. (1988) *The mathematical tourist: Snapshots of modern mathematics*. New York: W. H. Freeman and Company, p. 145.

²³⁸ Stewart, I. (1989) *Does God play dice? The mathematics of chaos*. Cambridge, MA: Basil Blackwell, p. 10, emphasis in original.

²³⁹ Peterson (1988), p. 145.

²⁴⁰ *Ibid.*, p. 83, emphasis in original.

²⁴¹ *Ibid.*, emphasis in original.

²⁴² Capra, F. (1996), pp. 114-115.

²⁴³ A system’s phase space is the imaginary map of in which its dynamic properties are plotted. The phase space of the pendulum is in two dimensions; adding other factors will increase its dimensionality. Mathematicians do not recognize any limits to the number of dimensions they can use to describe phase space, but we will be discussing only the three dimensions that we can easily visualize. See, Briggs and Peat (1989), pp. 31-41.

²⁴⁴ Briggs and Peat (1989), pp. 34-36.

This pattern of a simple orderly system under ideal conditions develops around what is known as a fixed point attractor.²⁴⁵ Every dynamical system has a region in its phase space that seems to exert “a ‘magnetic’ appeal for [that] system, seemingly pulling the system toward it.”²⁴⁶ Other kinds of systems contain other kinds of attractors. For example, when our pendulum does not enjoy ideal conditions, friction and air resistance will slow and eventually stop its motion. Since we prefer to have the correct time, in modern clocks, there is an electric motor or mechanical system that provides a periodic jump of energy to counteract these effects. When the motor is introduced into the equations, the plot in phase space no longer rotates around a point, but rather is attracted by a cyclical path, known as a limit cycle attractor. Population studies of predators and prey, with numbers of one group affecting numbers of the other in a periodic cycle, also demonstrate the pattern of a limit cycle, as do simple oscillators.²⁴⁷

Limit cycle systems may have more than two variables, and instead of showing a single periodicity, they will build a pattern in more than two dimensions. Limit cycle systems may also intersect. When they do, the shape of the attractor is a torus described by the periods of the two coupled systems—the “coupled motion...can be pictured as a line that winds around the torus, demonstrating that the surface of the torus itself is the attractor.”²⁴⁸ If the periods are in a simple ratio²⁴⁹, the combined system is periodic; if the two systems are not in a simple ratio,²⁵⁰ the line moving around the surface of the torus will never exactly repeat itself, but it retains its basic stability.²⁵¹

If the systems described by point attractors, limit cycles, and tori are stable and predictable, what kind of attractors and phase space maps can be drawn from the nonlinear turbulence and chaos that abounds in nature, and what are the attributes or characteristics of these dynamical systems? Chaotic systems are deterministic—they follow rules, yet are unpredictable because of their sensitivity to change in initial conditions. Although in common usage we associate the word “chaos” with disruption and disorder, in a technical sense, chaos only gives the appearance of randomness. Since we cannot get outside the system to see it whole, we only see what seems to be disorder. Chaotic systems develop in the boundary areas between dimensions—they are found to be neither lines nor planes nor solids—but some fractional dimension in between these

²⁴⁵ Ibid., p. 36.

²⁴⁶ Ibid.

²⁴⁷ Ibid., pp. 37-38.

²⁴⁸ Ibid., p. 40. A torus is a three-dimensional object that is basically a cylinder wrapped around a hole—a donut is a good example.

²⁴⁹ If, for example, the periods relate as 1 to 2, they can be described by rational numbers, such as 0.50.

²⁵⁰ If, however, the periods relate in such a way that their decimal expression contains an infinite number of terms, with numbers occurring in random order, they are irrational.

²⁵¹ Ibid., pp. 40-41.

well-defined shapes. These fractions give rise to fractal geometry and strange attractors.²⁵²

Strangely beautiful shapes, demonstrating self-similarity at successively smaller scales, fractals came into public awareness in the 1980s, but were the subject of study by mathematicians in the decades before the public first saw the color-enhanced, computer-generated portraits of chaos contained in Julia sets and the Mandelbrot set.²⁵³ These portraits are the diagrams produced when the systems cascade into chaos. The shapes contained and repeated in these constructs represent the possible solutions to equations containing complex numbers or transcendental functions. Even Newton's method to derive the cube root of -1, when iterated, produces a delicate portrait of chaos, where "every point on the spiraling boundary touches upon the three areas containing the equation's roots."²⁵⁴

Fractals and fractal geometry were developed by Benôit Mandelbrot in the 1970s to model shapes in nature that are irregular, yet self-similar, and to find out, if possible, what brings such shapes into being.²⁵⁵ Natural fractal shapes include a head of cauliflower, the branching of the bronchial system, coastlines, clouds, trees, and mountains. Self-similarity is the term used to describe the fractal's repetition of features at smaller and smaller scales. Computer-generated fractals contain smaller iterations of the whole pattern at each successively smaller scale. Features in natural objects may not exactly duplicate or enfold the whole, but come close to doing this, much as a leaf is roughly the same shape as the tree of which it is a part.

The development of laser technology sheds light on this quality. Holograms are photographs taken by laser light—"through a half-silvered mirror. Half the laser beam is directed onto a photographic plate. The other half is bounced off an object and then onto the plate...[the two beams interfere with each other, and] the interference pattern is recorded on the plate," enfolding the image of the object in the wave.²⁵⁶ When laser light is directed through the plate later, the image unfolds in three dimensions. Pieces of the

²⁵² See, among others, Briggs and Peat (1989); Peterson (1988); Stewart (1989); Capra (1996); Peterson, I (1990) *Islands of truth; A mathematical mystery cruise*. New York: W. H. Freeman and Company; Cohen, J. and I. Stewart (1994) *The collapse of chaos: Discovering simplicity in a complex world*. New York: Penguin Books; Coveney, P. and R. Highfield (1995) *Frontiers of complexity: The search for order in a chaotic world*. New York: Fawcett Colombine; Gleick, J. (1987) *Chaos: Making a new science*. New York: Penguin Books; Peak, D. and M. Frame (1994) *Chaos under control: The art and science of complexity*. New York: W. H. Freeman and Company; and Schroeder, M. (1991) *Fractals, chaos, power laws: Minutes from an infinite paradise*. New York: W. H. Freeman and Company.

²⁵³ The Mandelbrot set made its dramatic first public appearance on the cover of *Scientific American* in August, 1985. Peak and Frame (1994), p. 243.

²⁵⁴ Briggs and Peat (1989), p. 103.

²⁵⁵ Mandelbrot, B. (1991) Fractals—a geometry of nature. (pp. 122-135) in N. Hall, ed., *Exploring chaos: A guide to the new science of disorder*. New York: W. W. Norton & Company, p. 123.

²⁵⁶ Briggs and Peat (1989), p. 111.

plate, when excited by the laser, will display an image of the whole object.²⁵⁷ As holograms enfold a pattern of the whole in each part, so do fractals, both natural and computer-generated.

In fractals, “the ordinary notion of dimension may vary with scale.”²⁵⁸ We think of dimension in terms of similarity and mass. Regular objects will vary in dimension from the point (dimension 0), to the line (dimension 1), the plane (dimension 2), and the cube (dimension 3), and so forth. Fractals have dimensions that fall between these whole numbers. A curve that is “a linearly self-similar fractal...twists and turns so much that it visits nearly every part of some region of the plane, becoming almost two-dimensional.”²⁵⁹ Mass in fractals increases according to a power of dimension “that is not a whole number.”²⁶⁰

This question of dimensionality is important because it relates to the packing efficiency of a form.²⁶¹ Information is the key to the growth of living systems. The fractal quality of a living thing permits greater amounts of information in smaller spaces, which contributes to the ability of a simple, four-character code like DNA to instruct the unfolding of an unimaginable variety of different living things. Start with a set of minimal information and some simple rules, including a rule that feeds back into the operation, and fractal dimensionality takes over.²⁶² The result in a complex organism is a balance between fractal elements and order—and computer simulations of fractal systems evoke a vision of balance and qualitative change.²⁶³

Fractals should be seen as tools we can use to model and understand a number of natural processes. Fractal dimensionality permits large surface areas to be contained in small volumes. For example, the circulatory system of the body is constructed so that the small volume of blood is within easy reach of all body cells, both in terms of arteries and veins. The fractal branching structure permits “the circulatory system [to be] infinitely close to each body part and keep the blood volume low.”²⁶⁴ Fractal descriptions are useful tools for problems connected with “surfaces in contact with one another,” such as traction in automobile tires, electrical contacts, and contact between joined metals.²⁶⁵ Fractal dimensionality is the appropriate yardstick for irregular shapes, and the degree of irregularity of an object can be related to both its packing efficiency and its strength.²⁶⁶

²⁵⁷ Ibid., p. 112

²⁵⁸ Mandelbrot (1991), p. 126.

²⁵⁹ Ibid.

²⁶⁰ Ibid., p. 127.

²⁶¹ Peat and Frame (1994), pp. 102-105.

²⁶² See, Peterson (1990), pp. 112-150.

²⁶³ Briggs and Peat (1989), pp. 107-110.

²⁶⁴ Ibid., p. 107.

²⁶⁵ Gleick (1987), p. 106.

²⁶⁶ Ibid., pp. 100-102.

The descent into chaos can be either gradual or abrupt. All chaotic systems show evidence of critical points where dividing or bifurcation takes place—where the system represented by the equation has the choice of one branch or the other—and it is impossible to predict which choice will be made.²⁶⁷ Bifurcation is most visibly demonstrated when there is period doubling involved—a line, branches into two curves, each of which branches, and so forth.²⁶⁸

The basins of attraction associated with the fantastic shapes of turbulence and chaos were named “strange attractors” by mathematician David Ruelle.²⁶⁹ In the physical world, turbulence consists of “oscillations...so complicated as to apparently defy understanding. Although the time evolution [of the system] obeys strict deterministic laws, the system seems to behave according to its own free will.”²⁷⁰ One of the earliest strange attractors to be plotted relates to weather. The Lorenz attractor, named for meteorologist Edward Lorenz who first derived it in 1963, is built from “a simplified set of differential equations describing air flows in the atmosphere.”²⁷¹ The shape of the Lorenz attractor reminds one of a butterfly with wings extended, perhaps giving rise to the example often used to explain the sensitive dependence on initial conditions of weather systems—that of a butterfly flapping its wings in Beijing affecting the weather in New York days later.

Dissipative Structures and Self-Organization

The study of turbulence and other outward natural manifestations of chaos have led to an understanding of dissipative structures and self-organization. Ilya Prigogine first brought to our attention the dissipative structure characteristic of the way heat travels through liquids and of high-energy complex systems in molecular chemistry, and was one of many practitioners of the new sciences to apply their findings to human systems.²⁷² One of the simplest illustrations of the spontaneous development of order out of chaos is the Bénard instability. When a fluid is heated from below, so that the lower surface is hotter than the upper surface, the heat travels through the liquid smoothly by conduction. As the

²⁶⁷ For a full description in lay terms of this, see Peterson (1988), pp. 143-173. For a complete, technical exploration of chaos and its mathematical models, see Schroeder (1991).

²⁶⁸ Briggs and Peat (1989), pp. 53-65; Gleick (1987), pp. 69-77; Schroeder (1991), pp. 279-282; and Peterson (1988), pp. 149-155.

²⁶⁹ *Ibid.*, p. 50.

²⁷⁰ Ruelle, D. (1980) Strange attractors. *Mathematics Intelligencer*, 2, pp. 126-137, p. 126.

²⁷¹ Peterson (1988), p. 146.

²⁷² It is interesting to note how many scientists in these “new” chaos-related fields—like Ilya Prigogine, F. David Peat, David Bohm, Fritjof Capra, Richard Feynman, and Werner Heisenberg, to name but a few—have made the connection between the nonlinear, dynamic and quantum qualities they observe in the practice of their science and observed behavior and properties in the interactions of individuals and human systems. This parallel extends to the quantum properties of human consciousness, as described in Capra's (1977) *The Tao of Physics*. New York: Bantam Books; Capra (1996); Kafatos and Nadeau (1990); Stapp (1993); Zohar (1990); and Zohar and Marshall (1994).

temperature difference grows, the state of the liquid moves far from equilibrium. Gravity works more strongly on the denser, cooler layer at the top, and the liquid erupts into turbulence. Then, when the heat cannot disperse without convection currents, the system “shifts out of its chaotic state, and the previously disordered whorls transform into a lattice of hexagonal currents, the Bénard cells.”²⁷³ This self-organized state can be reduced to chaos again by turning up the heat, but clearly, in the chaotic state lies the possibility for organization to emerge.

Before Prigogine, one assumption in the practice of chemistry had been that the laws of thermodynamics rule out oscillatory chemical reactions—that they would run only until they reach equilibrium, not waver back and forth. Prigogine demonstrated that if the dynamic chemical system is maintained in a state far from equilibrium, it could produce oscillations and, with the right chemical, will produce pulsating patterns in color, another example of order spontaneously emerging from disorder.²⁷⁴ This idea of self-organization is a thread that is woven through all of Prigogine’s Nobel Prize winning work on thermodynamics.²⁷⁵

What Prigogine discovered was that these complex chemical systems, because of their high-energy dynamic states, are capable of changing and growing without reaching a steady state, much less classical thermodynamic equilibrium—to operate effectively, in other words, in a state near chaos. The key to their behavior lies in the fact that they convert “[some] ‘noble’ form of energy (for instance mechanical, electrical, or chemical energy)...into heat. These systems actually exhibit an interesting behavior only if they are constantly fed some noble energy.”²⁷⁶ Such a system is “capable of maintaining [its] identity only by remaining continually open to the flux and flow of [its] environment,” which is the source of noble energy forms.²⁷⁷

Because of the openness of the ‘boundary’ between the system and its environment not only can the system more readily import energy for transformation or work but also, and perhaps more importantly, it can lower, or dissipate, entropy—the end-product of its

²⁷³ Briggs and Peat (1989), p. 137.

²⁷⁴ Casti, J. L. *Complexification: Explaining a paradoxical world through the science of surprise*. New York: HarperPerennial, pp. 264-265.

²⁷⁵ See, for example, Prigogine with Stengers (1996); Prigogine and Stengers (1984); Prigogine, I. (1981) Time, irreversibility, and randomness (pp. 73-82) in Jantsch, E., ed., *The evolutionary vision: Toward a unifying paradigm of physical, biological, and sociocultural evolution*, Boulder, CO: Westview Press, Inc.; Prigogine, I. (1980) *From being to becoming*. San Francisco, CA: Freeman; and Prigogine, I. (1976) Order through fluctuation: Self-organization and social system. (pp. 93-133) in Jantsch, E. and C. H. Waddington, eds., *Evolution and consciousness: Human systems in transition* Reading, MA: Addison-Wesley Publishing Co.

²⁷⁶ Ruelle (1980), p. 136.

²⁷⁷ Briggs and Peat (1989), p. 139.

energy transformations.²⁷⁸ Because entropy generation relates to lost energy, its presence is not a “part of a pattern of predictable relationships that creates order.”²⁷⁹ In closed systems, entropy is maximized by a thorough mixing of the system to attain equilibrium. “Equilibrium is achieved when forward and reverse reactions occur at the same rate so that the composition of the system doesn’t change with time, [occurring in practice] when activation barriers are low.”²⁸⁰ At equilibrium, no further mixing, net chemical reactions, or development of structure is possible. In the view of some, equilibrium is analogous to death, or at least stagnation, in a biological system.

As a high-energy system approaches classical equilibrium, its patterns may become more rigid and self-referent; entropy then builds up, choking off energy transformation. These patterns must be ‘broken’ to enable further development—for transformation to a higher level of organization to occur—and it is the effect of the positive feedback characteristic of self-reference which breaks the symmetry that indicates the presence of a nonlinear mechanism. A system characterized by such nonlinear processes is a dissipative or process structure. Thus, Prigogine (1976) notes, “dissipative structures thus form a bridge between function and structure.”²⁸¹

Capra (1996) identifies three criteria for living systems: pattern of organization, structure, and process.²⁸² The pattern is defined as “the configuration of relationships that determines the system’s essential characteristics,” which he identifies with autopoiesis. The structure is defined as “the physical embodiment of the system’s pattern of organization,” which he identifies with dissipative structures. And the process of living systems is defined as “the activity involved in the continual embodiment of the pattern of organization,” which he identifies as cognition.²⁸³ Autopoiesis is the “network pattern in which the function of each component is to participate in the production or transformation of other components in the network.”²⁸⁴ From the simplest cell to ecosystems, autopoiesis is a network involved in making itself—the patterns of self-organization of parts and wholes in co-evolution.

While each part of a living system may be organizationally closed and self-referential, it is at the same time structurally open. Much as Prigogine’s dissipative chemical

²⁷⁸ Ibid., p. 136; and Kiel, L. D. (1989) Nonequilibrium theory and its implications for public administration. *Public Administration Review*, 49, No. 6, pp. 544-551; pp. 545-546.

²⁷⁹ Baker, P. L. (1993) Chaos, order, and sociological theory. *Sociological Inquiry*, 63, No. 2, pp. 123-149, p. 138.

²⁸⁰ Hoflund, G. B., personal correspondence with the author, March 16, 1998.

²⁸¹ Prigogine, I. (1976) Order through fluctuation: Self-organization and social system. (pp. 93-133) in E. Jantsch and C. H. Waddington, eds., *Evolution and consciousness: Human systems in transition*. Reading, MA: Addison-Wesley Publishing Co., p. 95, emphasis in original.

²⁸² Capra (1996), p. 161.

²⁸³ Ibid., and pp. 160-176.

²⁸⁴ Ibid., p. 162.

structures, the living network remains open to its environment to draw in nutrients or energy and to discard entropy or waste.²⁸⁵ The identification of the dissipative structure as the structure of life goes beyond boundary definition, however. Structure is the manifestation of patterned relationships—a dissipative structure then manifests and reproduces self-organizing characteristics, through feedback and self-regulation, as well as through symmetry-breaking and change.

In identifying cognition as the process of life, Capra asks us to redefine the term “cognition.” Cognition is “the process of knowing...mind is not a thing [separate from the body in Cartesian dualism] but a process...[and] mental process is immanent in matter at all levels of life.”²⁸⁶ Therefore, cognition goes beyond thinking and includes such ways of knowing as perception, intuition, manipulation, action, and emotion.²⁸⁷

Classical science assumes relationships that are linear—causes lead, through however many intermediate steps, to their effects; changes in one variable lead to proportional changes in another; if initial conditions are known, outcomes can be accurately predicted. The new sciences, however, deal with relationships that are nonlinear and that stubbornly resist attempts of classical science to explain them. Nonlinear systems do not satisfy the conditions of positive, cause-and-effect relationships. As Young (1991) says, “while small changes make small differences in linear systems, it is an attribute of nonlinear systems that small differences can produce very large outcomes...The outcomes of any such set of nonlinear social systems will consist of some portion of outcomes that are expected and some which are quite unpredictable.”²⁸⁸

According to Forrester (1987), “nonlinearities cause what economists refer to as 'structural changes' in a system.”²⁸⁹ These structural changes occur when “control of a system moves from one set of feedback loops to another set, often with dramatic changes in behavior.”²⁹⁰ This is particularly true when the system shifts from negative feedback loops—those that stabilize a system at equilibrium—to positive feedback loops that

²⁸⁵ In an ecosystem, one component's waste may provide necessary nutrients to other components.

²⁸⁶ Ibid., p. 172.

²⁸⁷ Ibid., p. 175.

²⁸⁸ Young, T. R. (1991) Chaos theory and symbolic interaction theory: Poetics for the postmodern sociologist. *Symbolic Interaction*, 14, No. 3, pp. 321-334, p. 322.

²⁸⁹ Forrester, J. W. (1987a) Nonlinearity in high-order models of social systems, *European Journal of Operational Research*, 30, pp. 104-109, p. 105.

²⁹⁰ Ibid. Feedback loops are familiar entities. Negative feedback acts as a regulator on a system acting to return it to some 'normal' range at equilibrium. When the human body overheats through exercise, for example, perspiration is triggered to cool the system back to its normal range. Another familiar example is a home-heating system thermostat, which turns on and off the heat source based on room temperature settings. Positive feedback is the reiteration and consequent amplification found in sound systems. Sometimes the sound is amplified to such an extent, or the source is too close to the amplifier, and we can hear, much to our regret, the sound waves overlap.

accelerate change. Nonlinearity and the positive feedback associated with it drive high energy systems to discontinuous change and self-organization.

“Self-organizing is the capacity of open and living systems, such as we live in and we ourselves are, to generate their own new forms from inner guidelines rather than the imposition of form from outside.”²⁹¹ The concepts of self-organization and symmetry breaking, although not identified by these terms, are articulated as early as the systems theory work of Lewin (1951):

At first there must be the “unfreezing” of the prevailing state, which requires action to “break open the shell of complacency and self-righteousness.” This is followed by second stage “moving to new levels.” But then there must be a third stage “re-freezing” at this new level to prevent a regression to the former or original state.²⁹²

What we see here is the process of discontinuous change, nonlinear and not incremental, whereby a complex system, living or nonliving, is transformed. The system, upon reaching a stage where structure begins to become rigid, but still far from equilibrium, reaches a critical bifurcation point where patterns are broken, self-organizes at a higher energy level, then reestablishes boundaries. The quality of self-organization makes the emerging system both uniquely different from, and yet, particular to, the system from which it arose. It contains, therefore, both a connection with its past in the form of evolutionary traces, and also novel and unique new structures embodying the pattern of organization that gives it its essential character.

Life, Complexity and the Edge of Chaos²⁹³

Where chaos theory and fractals give us metaphors and models for the messy and complicated experiences we have of living and nonliving dynamical systems, complexity theory tries to home in on the “why” and “how” questions arising from several seemingly unrelated specializations—making or finding connections between processes as far apart as economics and evolution and quantum mechanics. The central clearing house of complexity research is the Santa Fe Institute, established in the early 1980s, and the

²⁹¹ Loye, D. and R. Eislser (1987) Chaos and transformation: Implications of nonequilibrium theory for social science and society. *Behavioral Science*, 32, pp. 53-65; p. 56.

²⁹² Lewin, K. (1951) *Field theory in social science*. New York: Harper and Row, p. 60.

²⁹³ Several good sources for the history of complexity theory are: Waldrop, M. M. (1992) *Complexity: The emerging science at the edge of order and chaos*. New York: Simon & Schuster; Lewin, R. (1992) *Complexity: Life at the edge of chaos*. New York: Collier Books; Casti, J. L. (1994); Coveney and Highfield (1995); and Cohen and Stewart (1994). For the very serious student, the proceedings volumes in the Santa Fe Institute Studies in the Sciences of Complexity, such as Volume VIII: Zurek, W. H., ed. (1989) *Complexity, entropy, and the physics of information*. Reading, MA: Addison-Wesley Publishing Company, offer more detailed and specific studies in this field.

central theorists of complexity are Murray Gell-Mann, Stuart Kauffman, Chris Langton, Doyne Farmer, Brian Arthur, John Holland, and Norman Packard.

These investigators come from a variety of fields; and, it is their ability to see connections between the problems in those fields that provides their common ground. Studies of complexity, although certainly related to those of chaos theory, have as their goal enhanced understanding of how systems adapt, grow, and change in a process called emergence. The key discovery of complexity theory is that both complexity and more highly organized structures are products of the boundary, or edge, between order and chaos. It is at the edge of chaos, says Chris Langton, that “information gets its foot in the door of the physical world, where it gets the upper hand over energy”—information in the form of building blocks and rules.²⁹⁴

Much as fractals are built from applying a few simple rules to mathematical operations, “complex, lifelike behavior is the result of simple rules unfolding from the bottom up.”²⁹⁵ Whether the model is a sand pile in a state of self-organized criticality or the creatures in the computer “Game of Life,” the key factors are a set of rules that evoke a pattern of organization and a dynamic balance between chaos and order that produces complex adaptive behavior.²⁹⁶ Complexity is “a class of behaviors in which the components of the system never quite lock into place, yet never quite dissolve into turbulence, either. These are the systems that are both stable enough to store information, and yet evanescent enough to transmit it. These are systems that can be organized to perform complex computations, to react to the world, [and/or] to be spontaneous, adaptive, and alive.”²⁹⁷

Evolution is now seen as a balance between competition and cooperation whose end goal is this kind of complexity—natural selection favors complex, adaptive forms. Rather than being driven alone by chance mutation and competition, the secret of evolution is “life’s inherent tendency to create novelty, in the spontaneous emergence of increasing complexity and order.”²⁹⁸ This process crosses disciplinary boundaries. As Doyne Farmer describes it:

Organisms cooperate and compete in a dance of coevolution, thereby becoming an exquisitely tuned ecosystem. Atoms search for a minimum energy state by forming chemical bonds with each other, thereby becoming the emergent structures known as molecules. Human beings try to satisfy their material needs by buying, selling, and trading with each other,

²⁹⁴ Langton is quoted in Lewin, R. (1992), p. 51.

²⁹⁵ Waldrop (1992), p. 329.

²⁹⁶ The Game of Life is a computer simulation of evolution. See, Casti (1994), pp. 223-229; and Capra (1996), pp. 194-203. Studies of the evolving structure of sand dunes and their sudden cascades into chaos were simulated on computer by Per Bak of the Brookhaven National Laboratory. See, Coveney and Highfield (1994), pp. 185-189.

²⁹⁷ Chris Langton, quoted in Waldrop (1992), p. 293.

²⁹⁸ Capra (1996), p. 228, emphasis added.

thereby creating an emergent structure known as a market. Humans likewise interact with each other to satisfy less quantifiable goals, thereby forming families, religions, and cultures. Somehow, by constantly seeking mutual accommodation and self-consistency, groups of agents manage to transcend themselves and become something more.²⁹⁹

The notion of coevolution explains the emergence of a range of social, economic, and political relationships: “alliances, rivalries, customer-supplier relationships, and on and on. It is the dynamics that underlie the affairs of nations in a world that has no central authority.”³⁰⁰ In complex systems it is the connection that counts—in a network, it is the relationship between nodes, and not the nodes themselves, that is of critical importance. Structure emerges from the embedded pattern of organization; process has more to contribute to outcomes than does structure. Complexity generates or crystallizes pattern—order—upon which processes like natural selection can act. Natural selection may drive such systems to more complex states, increasing connection, increasing computational power, and increasing adaptability.³⁰¹

Kauffman visualizes the edge of chaos as the area between “an ordered regime with frozen components” and “a chaotic regime with no frozen components”—as “boundary region...where frozen components just begin to ‘melt’.”³⁰² An analogy could be drawn to the changing states of matter. Phase transitions—from gas to liquid; liquid to solid, and so forth—are like these boundary conditions, in that they, too, demonstrate complex, turbulent behavior. Networks in this boundary area have often accumulated a number of variations, providing the flexibility to adapt both gradually through subtle perturbations and rapidly in response to structural change or mutation.³⁰³

Complexity theory forms a bridge between the highly technical mathematics of chaos theory and the highly messy and qualitative studies of life and social organization. It is easy to see that the same principles of self-organization, packing efficiency, feedback, and simple rules apply to both levels of study—the abstract and theoretical, and the concrete and experiential.³⁰⁴ The ontological implications of quantum physics, and the newer research in biology, chemistry, mathematics, and ecology open up the possibility for a new and liberating worldview, and contribute to changing the metaphors and models that

²⁹⁹ Quoted in Waldrop (1992), pp. 288-289.

³⁰⁰ Ibid., p. 259.

³⁰¹ Lewin, R. (1992), p. 149. Lewin also quotes Norman Packard as saying, “Biological complexity has to do with the ability to process information...organisms [are] complex dynamical systems, and what drives their evolution is increased computational ability.” (1992), p. 137.

³⁰² Capra (1996), pp. 203-204.

³⁰³ Kauffman, S. A. (1991) Antichaos and adaptation. *Scientific American* (August 1991), pp. 78-84, p. 82.

³⁰⁴ The organization of the human brain is a perfect example of ever-increasing complexity in a biological system. It has evolved to organize and store information, direct autonomous process, and its folds display a high degree of fractal dimensionality.

we may use in a wide variety of applications. A summary of the characteristics of this worldview, especially those that can add to our understanding of administrative structures and reform, will form the basis for the concluding section below.

Defining Characteristics of the Quantum Worldview

While it may be unlikely that human organization can be modeled quantitatively drawing from the new sciences,³⁰⁵ some argue convincingly that even at the quantitative level, chaos theory can be applied to further our understanding of managing complex organizations and of such management processes as budgeting and planning.³⁰⁶

Metaphors drawn from the natural sciences have been useful in the development of most present day social theories, however, application of the linear models of classical physics to social science problems have left gaps in our ability to understand and explain complex human behavior. Models, or at least conditions, drawn from the new sciences offer us the hope that we can understand and shape communities and relationships and help grow new institutional patterns and functions.

On a general level, several trends or shifts in emphasis in both science and social theory have emerged in the last century. This ecological perspective is grounded in a sense of connection with the whole, rather than an atomistic sense of individualism, and can be summarized through five observable shifts. First, there is a shift from the part to the whole—"the properties of the parts must be understood as dynamics of the whole."³⁰⁷ Second, our view of organization shifts from structure to process—"structure is seen as a manifestation of an underlying process, and the entire web of relationships is understood to be fundamentally dynamic."³⁰⁸

Third, science has shifted away from assuming that objectivity is possible—"descriptions are no longer viewed as...independent of the human observer."³⁰⁹ The process of observation must be included in any account of phenomena. Fourth, we can no longer visualize knowledge as being built on the foundations of past inquiry. Rather, knowing can be seen as an interconnected network of self-consistent observations, facts, and relationships.³¹⁰ Finally, the idea of absolute truth must give way to approximate

³⁰⁵ See, for example, Johnson, J. L. and B. K. Burton (1994) Chaos and complexity theory for management. *Journal of Management Inquiry*, 3, No. 4, pp. 320-328.

³⁰⁶ Kiel, L. D. (1994) *Managing chaos and complexity in government: A new paradigm for managing change, innovation, and organizational renewal*. San Francisco, CA: Jossey-Bass; Kiel, L. D. and E. Elliott (1992) Budgets as dynamic systems: Change, variation, time, and budgetary heuristics. *Journal of Public Administration Research and Theory*, 2, No. 2, pp. 139-156; and Priesmeyer, H. R. and K. Baik (1989) Discovering the patterns of chaos. *Planning Review* (November/December 1989), pp. 14-21 and 47-48.

³⁰⁷ Kafatos and Nadeau (1990), p. 183.

³⁰⁸ Ibid.

³⁰⁹ Ibid.

³¹⁰ Ibid.

descriptions of interconnected patterns and objects—“the true description of any object is a web of relationships associated with concepts and models.”³¹¹ The whole of the complex web may not be represented in “this necessarily approximate description.”³¹²

From these general trends and shifts, we can move to the more particular, specific characteristics tied to the discoveries of the new sciences we have been discussing. The modern worldview drawn from Newton’s science was actively promoted by Enlightenment philosophy and, therefore, came into the common language and culture of Western society and affected the way that society and its institutions were formed. What I have labeled “the quantum worldview” is an ontological stance that encompasses the characteristics below, and, if this worldview comes to be more commonly held, could open up the possibility for a new relationship between citizen and government in our democratic republic.

Reality Understood Through Both/And, Not Either/Or

The search for some unified foundational truth that powered Enlightenment science and philosophy has lost meaning since the development of quantum theory that “puts our concept of an independent underlying Platonic reality in serious jeopardy.”³¹³ Had anyone paid attention to Poincaré and the many-body problem, the myths of foundational unity and linearity would have been exposed much earlier than this century.³¹⁴ We are no longer forced to choose between mutually exclusive alternatives; rather we can see that reality encompasses both the potential and the actual.

The concept of superposition, the wave/particle duality, shows that what is real has a fuzzy, uncertain, inclusive, and diverse character. In what Zohar and Marshall (1994) term “quantum contextualism,” each quantum entity remains in “creative dialogue” with its environment, and only when it has read that environment (the measurement situation) does it reveal, or actualize, one of its many potential attributes and values.³¹⁵ Until that point, it retains its “both/and” quality.

Another interesting example from nature that demonstrates both/and quantum qualities is the slime mold.³¹⁶ In one phase of its life cycle, the slime mold exists as a colony of individual cells, loosely attached to the vegetation upon which it feeds. When the food source is exhausted, chemical signals circulate through the colony and it forms a slug-like, multi-cellular organism that moves to a new location. Upon finding a new food

³¹¹ Ibid.

³¹² Ibid.

³¹³ Coveney and Highfield (1995), p. 80.

³¹⁴ Briggs and Peat (1989), p. 27.

³¹⁵ Zohar and Marshall (1994), p. 43.

³¹⁶ This summary is drawn from: Peat, F. D. (1987) *Synchronicity: The bridge between matter and mind*. Toronto, Canada: Bantam Books, pp. 66-67.

source, the organism disperses spores that develop into single cells which divide into a new colony. The slime mold is both a cell and a multi-cellular organism, the pattern for both aspects is enfolded in its genetic makeup, with each ready to unfold under appropriate environmental circumstances.

The pattern for living systems expresses such duality, and is influenced by both necessity and chance, “their complementarity is at the core of self-organization.”³¹⁷ Both order and chaos, both structure and process, both potential and actual, go into the evolution of the reality we experience. A new social reality informed by the new sciences will have as a defining feature this “both/and” complementarity.

Reality is Observer-Created: No Privileged Perspective

Quantum theory clearly demonstrates that the knower cannot stand outside the known. The observer occupies no privileged objective position from which to experiment and control an object of study. Wheatley and Kellner-Rogers (1996) tell us that “our disconnection—our alleged objectivity—is an illusion.”³¹⁸ The observer is an integral part of the system she observes, and her presence seems to be the catalyst that produces clarity from an unclear situation. Just as several quantum interpretations allege, the observer, either through the arrangement of the apparatus, the recording of the outcome, or through the mysterious process of consciousness, crystallizes potential into actuality.

Through the attitudes we hold and the relationships we engage in, we evoke reality in the social world, as well.³¹⁹ Any adequate definition of the self includes the effect of interdependence and relationship on the unique person each of us is always in the process of becoming. Much as the quantum experimenter evokes the result of the experiment through measurement, “the attitudes that we adopt in any situation partially determine how that situation will unfold.”³²⁰ In every situation we actualize some results and foreclose other possibilities.

When dealing with nonlinear, near-chaotic situations, observation includes both patience and action. In policy situations it is more useful to observe the flow of the situation than to attempt to steer policy against it. You can influence outcomes if you wait and observe the policy arena, “realizing that you are a part of it, realizing that the flow is ever-changing and always leading to new complexities, then every so often you can stick your oar into the river and punt yourself from one eddy to another.”³²¹ Using the energy of the

³¹⁷ Jantsch, E. (1981) Introduction. (pp. 1-14) in E. Jantsch, ed., *The evolutionary vision: Toward a unifying paradigm of physical, biological, and sociocultural evolution*. Boulder, CO: Westview Press, Inc., p. 5.

³¹⁸ Wheatley, M. J. and M. Kellner-Rogers (1996) *A simpler way*. San Francisco, CA: Berrett-Koehler Publishers, p. 97.

³¹⁹ Zohar and Marshall (1994), p. 111.

³²⁰ *Ibid.*, p. 131.

³²¹ Waldrop (1992), pp. 330-331.

chaotic elements and the stability of the established patterns, the observer, cannot control the situation, but can nudge it in a creative direction.

Reality is Nonlinear

The Newtonian assumption that linear cause and effect relationships are the norm has been refuted on many levels in the new sciences. We find that “nonlinearity is the rule rather than the exception. The world must be described mathematically by equations that exhibit critical points and novel orders of behavior and cannot always be analyzed or decomposed into simpler forms.”³²² All self-organizing systems, all living and social systems, are characterized by the “nonlinear interconnectedness of the system’s components...[its] internal feedback loops...[and are] described mathematically by nonlinear equations.”³²³ All “biological systems, from communities and populations to physiological processes, are governed by nonlinear mechanisms.”³²⁴ From the beating of a heart to the convolutions of a brain to jagged coastlines and symmetrical leaves, the beautiful and irregular patterns of nature are evidence of the nonlinear processes that give rise to them.

Forrester (1987a) recommends moving from linear to nonlinear models for explaining social facts because they more closely parallel what happens in the experienced world. Nonlinear models are less elegant, precise, and generalizable, but more relevant.³²⁵ He concludes that “no linear model can be at all adequate” to describe the complexity and interdependence of social systems.³²⁶

Young (1991) connects nonlinearity to the intangible factors in social arrangements. Such social psychological processes as “hope, trust, faith, and belief” are both nonlinear in character and “essential to the construction of social reality.”³²⁷ Since social research has taken its “themes, assumptions, and missions from normal science” in the past, building nonlinear models of the affects that help bind social reality together would not be impossible, and would allow richer and more accurate insight into how social organization arises than we have been able to achieve in the past.³²⁸

Order Through Self-Organization

³²² Peat (1987), p. 72.

³²³ Capra (1996), p. 85.

³²⁴ May, R. (1991) The chaotic rhythms of life. (pp. 82-95) in N. Hall, ed., *Exploring chaos: A guide to the new science of disorder*. New York: W. W. Norton & Company, p. 95.

³²⁵ Forrester (1987a), p. 108.

³²⁶ *Ibid.*, p. 105.

³²⁷ Young (1991), p. 322.

³²⁸ *Ibid.*

While the old science encouraged us to think that we could control and use our environment, that we could build organizational structure according to a plan, and that we could regulate our social activities by imposing rules from outside, the new science provides a model for the development of order from within. Self-organizing systems that occur in the natural world demonstrate that given an inherent pattern of organization, a few building blocks, and a few simple rules, social systems that are open to the energy of their environment can create their own flexible and adaptive order. The concept of self-organization includes both self-reference—a means of reproducing system characteristics, organizing “without reference to any external authority”³²⁹—and self-transcendence—“the creative reaching out of a system beyond its own physical and mental boundaries...trusting other systems as well as one’s own capability of coping with the unexpected.”³³⁰ There is a strength and resiliency in self-organizing systems—an inherent hardiness related to these aspects—that is not found in systems that are managed and controlled.

Many of our theories about social systems—families, organizations, communities, nation-states—have their basis in philosophical interpretations of classical physics, whose “intellectual enterprise emphasized order underlying change and a linear logic geared ultimately to controlling and harnessing nature.”³³¹ Our inheritance today is that “our perception of social and political reality, our whole perception of ‘modernity,’ is a mechanistic perception.”³³²

In the systems model, the most widely accepted metaphor for human organization, a social construct is perceived as a self-referent system, most often as one which is organic or “alive,” separated from an environment by a well-defined boundary. It is assumed that, within the boundary, the system pushes toward a steady state or a state of equilibrium—not unlike the thermodynamic equilibrium of classical physics. In fact, it is assumed that conditions far from equilibrium are harmful to the continued existence of the social system. There is also a tacit understanding that the environment in which the system operates is somewhat hostile, or at least alien, to the system.³³³ While the social sciences have continued to seek to ground their theory building in this positive and oppositional

³²⁹ Jantsch, E. (1981) Unifying principles of evolution. (pp. 83-115) in E. Jantsch, ed., *The evolutionary vision: Toward a unifying paradigm of physical, biological, and sociocultural evolution*. Boulder, CO: Westview Press, Inc., p. 89.

³³⁰ *Ibid.*, p. 91.

³³¹ Baker (1993), p. 124.

³³² Zohar and Marshall (1994), p. 23.

³³³ J. D. Thompson, in *Organizations in action* (New York: McGraw-Hill, Inc., 1967) describes the open system of the organization and the 'buffering' processes to protect the technical core from the presumed disturbing influences of the external environment (pp. 19-24). Other examples of the assumptions of systems theory, particularly those relating to organic systems like the human body, emphasize both the notions of system/environment distinctiveness and the 'buffering' (stabilizing) effects of negative feedback mechanisms to maintain equilibrium or homeostasis.

view of the world, the natural sciences have had to move beyond Newtonian mechanics and Darwinian evolution to handle the complexity and paradox that prevails in the world.

Self-organizing systems reveal themselves as “structures of relationships, patterns of behaviors, habits of belief, [and] methods for accomplishing work.”³³⁴ Beneath these surface material forms, the systems are reproduced by characteristic dynamic processes. No matter how enthusiastically we enter into restructuring social organizations, unless we are a part of those dynamic processes, we will not succeed—it is the process itself that “produce[s] its patterns of behavior, its structures of relationships...or it responds to our interventions in ways we didn’t expect.”³³⁵

The structure of complex “living systems always seems to emerge from the bottom up, from a population of much simpler systems.”³³⁶ The imposition of rules (structure) from outside denies a system experience in handling novelty. Therefore, such “top-down systems are forever running into combinations of events they don't know how to handle. They tend to be touchy and fragile, and they all too often grind to a halt in a dither of indecision.”³³⁷

Consider what the implications might be in application of this analogy to a view of the administrative state in conjunction with the overhead, or top-down, democracy of interest-group liberalism.³³⁸ And consider our current state of policy gridlock arising from the inability of the executive and legislative branches to agree on policy directions—a division at the top which leads public administration to waffle between the extremes of ineffectiveness and professional autocracy which has so eroded the public trust. If our administrative institutions continue to follow such a linear, top-down model, it is no wonder that the distance between citizen and government, implied in the politics/administration dichotomy, has become devastatingly explicit and alienating in today’s public space.

Knowing Through Involvement, Interconnection, and Making

Reducing and simplifying complex systems for study has been a basic component of the practice of science throughout the modern project. The results of that practice historically have been used to generalize about the world, and ultimately have been codified into “laws of nature.” Knowledge was seen as universal truth—once learned, forever valid.

³³⁴ Wheatley and Kellner-Rogers (1996), p. 81.

³³⁵ Ibid.

³³⁶ Waldrop (1992), p. 278.

³³⁷ Ibid., p. 279.

³³⁸ See, for example: Durant, R. F. (1995) Public policy, overhead democracy, and the professional state revisited. *Administration & Society*, 27, 2, pp.165-202; and Redford, E. S. (1969) *Democracy in the administrative state*. New York: Oxford University Press.

The new sciences have required that we take a decided shift in the way we think about learning and knowing.

The privileged position of the observer and finality of truth are concepts that have had to change as a result of the findings of quantum theory. Today we acknowledge that knowing arises from participating in the processes we study. And, we have come to see that the activity of knowing is closely associated with holism or systems thinking. We have come to recognize, however slowly, that the objects and processes we used to isolate for study are inherently interconnected with a whole system of other objects and processes. “Systems thinking...involves a shift...to a framework in which epistemology—‘the method of questioning’—becomes an integral part of scientific theories.”³³⁹ Finding the right questions to ask and deciding how to ask them may be the most important steps in finding useful answers.

Systems thinking and systemic learning are now prominent components of organization and management theory.³⁴⁰ Senge (1990) also recognizes the holistic integrity of living systems and connects this to organizations, and suggests that systems thinking is a much better approach to the complexity they exhibit than our old assumptions that there is “one right way” to do things.³⁴¹ Morgan (1986) describes the organization as a self-organizing system with the characteristics of autopoiesis—self-reference, autonomy, yet openness and a circular web of interactions with the environment—qualities that lead to members’ learning through participating in organizational transactions³⁴² Wheatley (1992) suggests that “participation...is a way out from the uncertainties and ghostly qualities of this nonobjective world we live in. We need a broad distribution of information, viewpoints, and interpretations if we are to make sense of the world.”³⁴³ The participation of a wide variety of voices in decisions leads to minimizing the obsessive need to control on the part of organizational management.

The activity of knowing is an ongoing process of acquiring enough information on which to base tentative next steps. It is experiential, and often is associated with the daily interactions of life, such as work. Ordinary knowledge, derived from involvement in doing and making things, “arises from the context of the work itself.”³⁴⁴ Knowing, in this

³³⁹ Capra (1996), p. 40.

³⁴⁰ See, for example., Morgan, G. (1986) *Images of organization*. Newbury Park, CA: Sage, especially Chapters 4 and 8; Wheatley, M. J. (1992) *Leadership and the new science: Learning about organization from an orderly universe*. San Francisco, CA: Berrett-Koehler Publishers, Inc.; and Senge, P. M. (1990) *The fifth discipline: The art and practice of the learning organization*. New York: Doubleday Currency.

³⁴¹ Senge (1990), p. 66., and p. 281.

³⁴² Morgan (1986), pp. 236-237.

³⁴³ Wheatley (1992), p. 64.

³⁴⁴ Evans, K. G. and G. L. Wamsley (in press) *Beyond the Yellow Brick Road: A journey, a vision, and a new role for public management*. In H. G. Frederickson, ed., *Public management reform and innovation: Research, theory and application*. Tuscaloosa, AL: University of Alabama Press (forthcoming).

context, is particularistic and drenched with systemic meaning. Because it falls outside the artificial and socially-constructed rules of the scientific method, ordinary knowledge, the knowledge of practitioners, has been marginalized.³⁴⁵ However, like the “ordinary talk” described by Giddens (1987), where “meaning and reference are closely combined...because it is carried on and organized within practical contexts of action,”³⁴⁶ knowing is “the product of interaction with the totality of its occasioning situations.”³⁴⁷

Gemmill and Smith (1985) assert that understanding organizations as dissipative structures “can be useful to organization members immersed in a transformational process.”³⁴⁸ The process of transformation is unpredictable, but understanding the nature of the system’s change process—nonequilibrium, symmetry-breaking, and reformulation—offers participants a context in which to make sense of it. This contextual knowing, involving as it does both the ongoing narrative of the organization and familiarity with the process of change in a self-organizing system, “may increase the probability of transformation.”³⁴⁹

Ecosystem as Metaphor: Cooperation and Partnership

When we visualize the world of self-organizing systems, we find a world where systems communicate and cooperate because they are interdependent—systems within systems, communities within communities. When any part is removed, the entire ecosystem suffers. Studying one plant gives very little information about the forest; looking at branches and leaves, without considering the roots and soil, tells us little about the system that is the tree.

Not long ago, such systems were broken apart to be studied, and a great deal of qualitative information was lost in the process; linear modeling could not cope with the complexity such systems represent. Now science has provided the conceptual tools, such as the metaphor of the ecosystem, to permit the modeling of complex social systems. Researchers can now “study problems that until recently had been largely ignored or simplified beyond recognition because they involve fuzzy definitions, complex and unpredictable relationships, and random variations.”³⁵⁰

³⁴⁵ See, for example, Hummel, R. P. (1991) Stories managers tell: Why they are as valid as science. *Public Administration Review*, 51, No. 1, pp. 31-41; and Schmidt, M. R. (1993) Grout: Alternative kinds of knowledge and why they are ignored. *Public Administration Review*, 53, No. 6, pp. 525-530.

³⁴⁶ Giddens, A. (1987) Structuralism, poststructuralism, and the production of culture. (pp. 195-223) in. A. Giddens and J. H. Turner, eds. *Social theory today*. Stanford, CA: Stanford University Press, p. 219.

³⁴⁷ Evans and Wamsley (in press).

³⁴⁸ Gemmill, G. and C. Smith (1985) A dissipative structure model of organization transformation. *Human Relations*, 38, No. 8, pp. 751-766, p. 763.

³⁴⁹ Ibid.

³⁵⁰ Dobuzinskis, L. (1992) Modernist and postmodernist metaphors of the policy process: Control and stability vs. chaos and reflexive understanding. *Policy Sciences*, 25, No. 4, pp. 355-381, p. 362.

Their common feature, that they are living systems, connects “ecological communities with human communities.”³⁵¹ The ability to see human organizations as ecologies is built on systems thinking—moving the unit of analysis from parts to the whole; studying relationships, not objects; and recognizing patterns as more important than contents.³⁵²

Thinking of social systems as ecologies also involves the notion of sustainability. The scholars of the Santa Fe Institute defined global sustainability in terms of their various disciplines, from physics to biology to economics, as requiring six fundamental transitions:

A demographic transition to a roughly stable population; a technological transition to minimal environmental impact; an economic transition to a world in which serious attempts are made to charge the real costs of goods and services—including environmental costs—so that there are incentives for the world economy to live off nature’s ‘income’ rather than depleting its ‘capital;’ a social transition to a broader sharing of that income...; an institutional transition [from national to supranational] alliances that facilitate a global attack on global problems...; and an informational transition to a world in which scientific research, education, and global monitoring allow large numbers of people to understand the nature of the challenges they face.³⁵³

These transitions, they feel, are necessary in terms of ensuring “humanity’s long-term viability,” and need to be accomplished within “a society that is adaptable, robust, and resilient to lesser disasters, that can learn from mistakes, that isn’t static, but allows for growth in the quality of human life instead of just the quantity of it.”³⁵⁴ This society would, for example, endeavor to learn about the connections between knowledge systems so that decisions it reaches about nuclear power, or health care, or communication would not generate unforeseen consequences in other fields creating “an endless spiral of crises and solutions,” as so often has been the pattern in the past.³⁵⁵

One fundamental characteristic of an ecological model of society is its reliance on relationships, partnerships, and cooperation to achieve its ends. To achieve such a society requires “a global systems-wide change in value structure from ‘competition’ to ‘cooperation,’ from ‘confrontation’ to ‘partnership,’ changing our relation to nature from ‘conquest’ to ‘harmony,’ and basing all decisions not merely on ‘short-term

³⁵¹ Capra (1996), p. 297.

³⁵² Ibid., p. 298.

³⁵³ Waldrop (1992), p. 350, emphasis in original.

³⁵⁴ Ibid., p. 350 and 351.

³⁵⁵ Peat (1987), p. 114.

considerations' but on 'a sense of identification with future generations'."³⁵⁶ Life itself abounds with partnerships—with “the tendency to associate, establish links, live inside one another, and cooperate.”³⁵⁷ Human communities, like ecological communities, will need “stability and change, order and freedom, traditions and innovation.”³⁵⁸ They develop the cooperation and the common goals they have through communication—both speaking and listening—in an effort to understand the dynamic patterns that bind them together in a system. They will need to understand the system properties of self-organization that drives the formation and maintenance of their families, organizations, and communities, and they will need to take responsibility for the world they co-produce.

Coevolution and Responsibility

Because we are all involved in creating reality, we bear significant responsibility for the outcomes of our creative activity. We not only make choices that affect our own future choices and the choices of others, but we also make physical objects and assign meanings to them.³⁵⁹ We make the world we inhabit, on many levels, and we cannot, nor should we, evade responsibility. The complexity of the world—its edge of chaos fuzziness—presents ideal conditions for growth and transformation, and “we’re participants in the story [of that growth and transformation] as it unfolds. We aren’t victims and we aren’t outsiders.”³⁶⁰ We are co-authors.

Zohar (1990) perhaps says it best:

the quantum world view stresses dynamic relationship as the basis of all that is. It tells us that our world comes about through a mutually creative dialogue between mind and body (inner and outer, subject and object), between the individual and his personal and material context, and between human culture and the natural world. It gives us a view of the human self that is free and responsible, responsive to others and to its environment, essentially related and naturally committed, and at every moment creative.³⁶¹

An awareness of this coevolutionary capacity we have and “the responsibility it confers gives a special weight to our human agency, a special meaning to all our actions, and a real, physical importance to the constructs of our human actions.”³⁶² In a completely determined world, Newton’s world, what do our choices or actions matter?

Enlightenment philosophy saw humankind as the center of the created world. Zohar and

³⁵⁶ Mesarovic, M. and E. Pestel (1974) *Mankind at the turning point: The second report to the Club of Rome*. New York: Dutton, pp.144-147, 157, summarized in Loye and Eisler (1987), p. 61.

³⁵⁷ Capra (1996), p. 301.

³⁵⁸ *Ibid.*, p. 303, emphasis in original.

³⁵⁹ See, Zohar (1990), especially Chapters 13 and 14.

³⁶⁰ Waldrop (1992), p. 321.

³⁶¹ Zohar (1990), p. 237.

³⁶² Zohar and Marshall (1994), p. 241.

Marshall (1994) disagree—“not the center, as in the old Western worldview, but...at the center, ontologically part and parcel of everything around us.”³⁶³

If we understand the patterns of the systems that we are and of which we are a part, we participate in the “creative restructuring of...relations with the world...[leading to] the invention of new evolutionary mechanisms and dynamics. In sociocultural evolution, there emerges even an explicit responsibility of the individual for the macrosystems of his life—society, culture, the planet earth, and ultimately even the whole universe...it is the self-organizing dynamics of man’s inner world which becomes the main factor in shaping the outer world.”³⁶⁴

Growth, Not Progress

The eighteenth century concept of progress, based on Newton’s laws of motion and, later, Darwin’s laws of evolution, discouraged metaphysical speculation in favor of a positive view of science and life. The central idea of progress was its goal orientation—humankind moving in a positive direction leading to a better life. The laws of nature, and their derivatives, social laws, formed a blueprint for moving humanity along a determined path to a better future.

In the notion of determinism, the dynamics of a system are perfectly reversible—past and future are equally open to our gaze. As we have seen, in the new sciences, it has been demonstrated that this symmetry between past and future does not exist. In his argument for indeterminism, Popper (1982) agrees that “the past has been completely determined by what has happened,” but that the future is predictable, or determined by past and present influences, only to a certain extent.³⁶⁵ Beyond that degree, the future remains open to our influence. The ideal of “progress”—scientific, technological, and social—as grounded in a closed universe—has been shown to be faulty, yet it continues to inspire our economic theory, social theory, and administrative theory.

The concept of growth and transformation found in the new sciences would certainly be a more accurate basis for imagining and anticipating our future in these social realms. The growth of self-organizing systems is internally regulated. The goals of such systems are not imposed from outside, but are part of their patterns of organization. The diversity of such systems fuels novelty and transformational change, yet the pattern retains traces of the system’s history, including in transformation a sense of renewal. Renewal, in organizational terms, “demands the re-realization of something old in the new in a

³⁶³ Ibid., p. 240, emphasis in original.

³⁶⁴ Jantsch (1981) *Unifying principles*, p. 93, emphasis in original.

³⁶⁵ Popper, K. R. (1982) *The open universe: An argument for indeterminism*, 2nd ed. Totowa, NJ: Rowman and Littlefield, p. 55.

systemic way.”³⁶⁶ History, thus, remains part of the mix of influences on the future, held as a potential for re-emergence in new iterations of self-organization.

Self-organizing growth is a metaphor for freedom—the freedom to realize potential and the freedom to act with effect in the world. Understanding self-organization can help us prepare for growth—from the personal level to the level of complex social structures like urban systems. Models based on the new sciences are helping planners and analysts understand and anticipate potential patterns of growth in the ecosystems of urban areas, with each system unfolding “a unique and irreversible history [with] structures that emerge build[ing] on preceding complexity and interactions.”³⁶⁷

Self-organization leads to irreversible change; its processes can’t be traced backward and forward with equal facility as idealized, deterministic processes can. New order, once formed out of the elements of the old order of the system, cannot be degraded back to a previous level of structure. Rather they provide a new platform for future growth. Such systems need energy from outside, however, to maintain their states of nonequilibrium. This energy comes in many forms, from the photon transferring energy directly to an electron leading to its movement within or out of an atom, to simple organic nutrients fueling cell production, to interactions in human systems. Kiel (1994) suggests that democracy is such a complexity generator—that citizen input into the operations of public organizations breaks patterns of behavior, potentially leading to transformational change.³⁶⁸ Sustainable growth and transformation can be a powerful motto as progress has been in the past, and would, if we rally around it, lead to a different understanding of society and its institutions.

Conclusions

Many in the social sciences question the applicability of these new ways of looking at reality to social organizations and other macro-level phenomena. The modern worldview has become second nature to us in thinking about social relationships—we rarely hesitate before we act to consider what might be possible if only we can recognize and overcome our unconscious ontological assumptions and premises. Although most who have thought about quantum theory accept at one level of awareness what it has to say about reality, they rarely move beyond that level of awareness to think about the potential for authentic change inherent in accepting as fact that what occurs at the subatomic level might be possible at the macro level also.

³⁶⁶ Hurst, D. K. and B. J. Zimmerman (1994) From life cycle to ecocycle: A new perspective on the growth, maturity, destruction, and renewal of complex systems. *Journal of Management Inquiry*, 3, No. 4, pp. 339-354, p. 352, emphasis added.

³⁶⁷ Engelen, G. (1988) The theory of self-organization and modelling complex urban systems. *European Journal of Operational Research*, 37, pp. 42-57, p. 55.

³⁶⁸ Kiel (1994), p. 161.

There is, as Wheatley (1992) notes, “a danger in playing with science and abstracting its metaphors because, after a certain amount of stretch, the metaphors lose their relationship to the tight scientific theories that gave rise to them.” However, she adds, “others would argue that all of science is metaphor—a hopeful description of how to think of a reality we can never fully know.”³⁶⁹ We have always needed stories to explain our place in the universe, and thus, we created and told each other myths, and epics, and legends. Science is another means of telling stories, one backed up with the legitimacy that the institution of science imparts, to “help us understand something about who we are as human beings, and how we relate to the universe.”³⁷⁰ Once the stories science told placed us in a clockwork world, carried along an ordered, predetermined path. Now science tells us stories about chaos and complexity and quantum indeterminism, and requires that we accept responsibility for our input in a world that is incomplete and in a state of becoming.

However separated we non-physicists may feel from physics, its imagery of reality—the natural world—permeates our lives. According to Zohar and Marshall (1994), “physics is a universal language. The knowledge that it gives us, and the images and metaphors associated with this knowledge, are the common currency of every people on earth.”³⁷¹ All scientific statements “from quantitative descriptions of empirical data to the most rigorous mathematical formalisms are ‘metaphors’,” and as such, they are applied to provide clarity for situations outside the world of strictly scientific phenomena.³⁷² As our understanding of the physical world has expanded and changed in the past century, then, so must our understanding of complex social systems.

The naïve view of science that informed the progressive reforms and has led to our current technocracy has left, as a legacy, an insufficient and constraining ontological perspective. If we want to enlarge the democratic possibilities of America, we need to leave the classical premises and assumptions of the progressive period behind. The artificiality of our social constructions, based as they are on a static and linear worldview, is discordant with our democratic aspirations. The discomfort we feel about the technocratic development of America has been apparent, if ineffectively presented, in the Populist revolt of the late nineteenth century and the youth protests of the twentieth century. A more useful ontological perspective, one that liberates and reinforces our democratic aspirations, is found in the new sciences.

If social systems, including administrative structures, can be visualized, and then, actualized as process structures, their self-organizing, bottom-up capabilities would

³⁶⁹ Wheatley (1992), p. 13, emphasis added; cf. Prigogine and Stengers (1984), p. 22.

³⁷⁰ Waldrop (1992), p. 318.

³⁷¹ Zohar and Marshall (1994), p. 36.

³⁷² Artigiana, R. (1987) Revolution and evolution: Applying Prigogine’s dissipative structures model. *Journal of Social and Biological Structures*, 10, pp. 249-264, p. 250.

permit the furtherance of democratic principles within them. Understanding institutions as the constitutive environment for practices, an environment which is not bounded away from the practices to which it is connected, helps us create a public space where citizens can once again play an active role in the pursuit of public happiness as embodied in our founding.³⁷³

The discussion of nonlinear systems and quantum physics above also demonstrates that there are elements of reality which can best be described as potentialities rather than certainties. This is the world of quantum physics—where at the micro level, matter and energy are truly interchangeable—where “at the center of matter, there is...nothing, no thing, pure energy.”³⁷⁴ At this most fundamental level, then, all that we see and touch, what we ourselves are is “a pregnant void—stable patterns of probability striving to connect with other patterns of probability.”³⁷⁵ There is room in such a world for the actions of human agents.

Newton’s clockwork universe is not replaced by quantum theory, in what Kuhn (1970) might suggest is a revolutionary change of paradigm. Rather, classical physics may have been, as Werner Heisenberg noted, relegated to being only a partial explanation of the phenomena we observe in our world, not the whole story. Heisenberg visualized both bodies of thought as included within some overarching physics, each suitable for solving problems within its own set of assumptions and situations.³⁷⁶

Discussions about quantum theory were not widely circulated in the non-science community until the 1980s. Since that time many books and articles have been published that have made possible for most people a degree of understanding about what quantum theory is and what it might mean about the world. Quantum theory has been made accessible to the non-physicist, as has chaos theory in mathematics, by many prominent scientists. It is possible, as well, for the layperson to gain a deeper understanding of these complex fields of study from more technical texts.³⁷⁷ It is not necessary to personally understand the computations, only to trust the scientist who describes them.

³⁷³ Arendt felt that the happiness alluded to in the Declaration of Independence was “public happiness” not personal happiness. She argued, “that the Americans knew that public freedom consisted in having a share in public business, and that the activities connected with this business by no means constituted a burden but gave those who discharged them in public a feeling of happiness they could acquire nowhere else.” Arendt, H. (1977b) *On revolution*. New York: Penguin Books, p. 119.

³⁷⁴ Kofman, F. and P. M. Senge (1993) Communities of commitment: The heart of learning organizations. *Organizational Dynamics*, 72, 2, pp. 5-23, p. 14, emphasis in original.

³⁷⁵ *Ibid.*

³⁷⁶ Heisenberg (1958).

³⁷⁷ The most accessible materials for these new sciences constitute a significant number of the references cited at the end of this dissertation.

What these publications describe is an ontological context in which it is possible to conceive of organizing patterns for administrative structures and relationships that provide a locus for a public discourse that is both rational or reasonable,³⁷⁸ and also celebrates and nurtures the human spirit. Giddens (1984) emphasizes the mutually creative and constraining relationship between social structures and the actors who act within them.³⁷⁹

This kind of theorizing has appeared in the work of William Sullivan, Brian Cook, and Evans and Wamsley (in press), who argue that administrative entities form the institutional infrastructure of society and are, or should be seen as, constitutive of citizen practices.³⁸⁰ These works resonate with the thinking of Dewey and Follett and are made possible by an ontology that is liberated by quantum thinking. It is the work of the coming chapter to weave these conceptual elements into a loosely-constructed model of the public space, describing what kinds of social change may accompany or predict practices of governance and citizenship conducive to a healing of our society.

³⁷⁸ Habermas, J. (1984) *The theory of communicative action: Reason and the rationalization of society*, Vol. 1, trans. T. McCarthy. Boston: Beacon Press; and (1987) *The theory of communicative action: Lifeworld and system: A critique of functionalist reason*, Vol. 2, trans. T. McCarthy. Boston: Beacon Press.

³⁷⁹ Giddens, A. (1984) *The constitution of society: Outline of the theory of structuration*. Berkeley, CA: University of California Press.

³⁸⁰ Cook, B. J. (1992) The representative function of bureaucracy: Public administration in constitutive perspective. *Administration & Society*, 23 (4), pp. 403-429; Sullivan, W. M. (1995); and Evans and Wamsley (in press).

Chapter 7

Public Administration in a Liberated Public Space Dewey, Follett, and the New Science

Although its periodic reform movements have varied in rhetoric if not in substance through the years, American public administration is very much the product of the ontological view legitimated by the science of Newton and Galileo. The social, political, and organizational histories of the United States are permeated by the influence of this worldview. While most first world states exhibit “modern” characteristics, I would argue that it is in the American experience that the hallmarks of modernity have been crystallized and focused. America was born modern and has, throughout its development, embraced the notions of destiny and progress. A belief that order and certainty are attainable is one of America’s fundamental, if tacit, credos.

Just as classical physics promoted an advance in our understanding of how the world works, social structure and administrative practices modeled on its premises have also yielded positive outcomes when evaluated by the norms of success implicit in the models. However, classical physics is a limited case—in settings where its use is appropriate, its success is brilliant; where it fails, it fails completely. Administrative practice modeled on classical physics, with its command-and-control structures, its hierarchy, its emphasis on efficiency and expertise, works in much the same way. It built efficient and accountable government. It created a nation that encompassed a continent and that was, for a time, first among nations in the world. However, although it has spoken in terms of democratic processes, its operations and its emphases have divided citizens from the responsibility and privilege of self-government. Although it is clear that we have come to a point in history where a reassessment of assumptions would be appropriate, we cling tenaciously to the development of reform strategies that replay old ideas dressed in new rhetoric. We need to question how administrative practice might be adjusted to evoke, rather than suppress, citizen input, but we have yet to search for bases for such an adjustment. Science, as it has evolved in the past century, offers us ontological freedom and legitimization for a range of valid options for social organization among which we might find such a basis.

It is also true that, if not in the evolution of our field, in the evolution of American thought, there have been persons whose visions of social organization, democratic practices, political theory, and public space seem to have arisen from such ontological freedom. Two of these, Mary Parker Follett and John Dewey, might be claimed by public administration as exemplars for alternative visions of the public space and democratic governance. With the wealth of their thought available, and with an ontological lens provided by the new sciences, we might ascertain what kinds of public organizations and

administrative structures we could construct or evoke, and what kinds of activities public administrators might employ in furtherance of democratic administration.

This chapter will explore the lessons provided by Follett and Dewey within the context supplied by the new sciences, especially those lessons that touch on the issues of what the public space might look like, what citizen roles might be evoked or empowered, what democratic practices might be woven into administration of the public's business, and how social relationships in America might be healed. The ontological characteristics of the new sciences that will inform this exploration are: reality understood as both/and (inclusiveness); reality as created by participants; reality as nonlinear with multiple, interconnected causes for events; order as emerging from self-organization; knowing as an activity of involvement, interconnection, and making; tolerance, cooperation, and partnership; coevolution and a new understanding of personal responsibility; and, self-organizing growth, not calculated progress, as a metaphor for development. The chapter will conclude by describing activities available to public administrators and the academic field of public administration that could initiate a process of self-organizing that leads to truly new institutions and practices of democratic administration.

Creating a Context for Democratic Administration: Learning to Live Without Modernist Illusions or Boundaries

The new sciences provide us with a set of premises and assumptions about ourselves, about others, and about the world in which we live that is completely different from those we currently hold. Any ontological position derived from those premises and assumptions would change the rules, the roles, and the relationships through which we live our lives. However difficult it is to step back from the modern ontology of instrumental rationality, and the difficulty cannot be denied, we must be willing to suspend disbelief and take that step if we truly want to construct democratic administration, rather than repeat the mistakes of our past in a misguided quest for an illusory certainty.

What the new sciences have contributed to the quest for democratic administration is not a new "best way," but rather the freedom to explore alternate ways of living together and governing ourselves, each of which is supported by science's recent speculations and discoveries about how the world works. I will explore some of the areas where the new sciences' ontological liberation may literally change everything. These do not represent all of the areas where change is possible—they are merely a sample of the potential for change that is available to us if we can set aside our customary way of seeing the world.

The Public and the Private

Acceptance of the liberated ontological stance of the new sciences facilitates a much-needed reconstitution of the public and private spheres of life and provides new insight

into building and maintaining community. Arendt observed that the boundary between public and private is being eroded by the intrusion of mass-society, individualistic concerns into the public sphere, displacing the authentic, agonistic discourse for which the public arena is created.¹ In his critique, Habermas decries the crowding out of genuine communicative acts by the predominance of the rational, technical discourse of modernity, leading to a commodification of the lifeworld.²

Today we find ourselves all too often being captured by the many-to-one communication mode of the radio or television—and the time we spend as passive audiences cannot be spent in conversation or deliberation. As audiences, we are severed from “reciprocal production of social knowledge and engagement in decisionmaking.”³ Lacking reciprocity in so many of our communications, not only are our democratic political institutions endangered, but the foundations of our way of life as well.⁴

The telephone answering machine is no longer enough to keep us in touch and connected—we are considered social misfits if we leave home without a cell phone or a pager. We have created an even more perfect “panopticon”—one no longer restricted to visual surveillance. Carrying a pager makes us available twenty-four hours a day, seven days a week, under electronic surveillance—and, we carry the surveillance instrument with us voluntarily, and even pay for the privilege. What is private anymore? What is public?

Both the public and private spaces, as we experience them today and as Arendt and Habermas critiqued them before, and the atomistic liberal individuals who were presumed to reside in them are constructs of the modern project built on the premises of classical science. The modern public sphere is a construction held together by power relations, with power being “exercised through a balance of coercion and seduction.”⁵ The individual is given primacy over the group, and order is maintained through reason, law, and contract—protecting individual rights and the status quo—and through immediate gratification and plentiful consumer products—appealing to the selfish and impulsive side of human nature. In this view, the self is an individual self, much as Hobbes decreed, engaged in a war of all against all, and only forced by the realization of inevitable destruction to band together with other individuals in an uneasy peace.

¹ Arendt, H. (1976b) *On revolution*. New York: Penguin Books.

² Habermas, J. (1984) *The theory of communicative action: Reason and the rationalization of society*, Vol. 1, trans. T. McCarthy. Boston: Beacon Press; (1987) *The theory of communicative action: Lifeworld and system: A critique of functionalist reason*, Vol. 2, trans. T. McCarthy. Boston: Beacon Press.

³ Angus, I. (1994) Democracy and the constitution of audiences: A comparative media theory perspective. (pp. 233-252) in J. Cruz and J. Lewis, eds., *Viewing, reading, listening: Audiences and cultural reception*. Boulder, CO: Westview Press, p. 233.

⁴ *Ibid.*, p. 234.

⁵ Zohar, D., and I. Marshall (1994) *The quantum society: Mind, physics, and a new social vision*. New York: William Morrow and Company, Inc., p. 96.

Collectivist theories of society, from Rousseau's general will through today's communitarianism, deny both reason and impulse as adequate for the formation of an ordered society. These theories appeal to "higher" values or principles as a regulatory instrument. "Collectivist models of society...stress the oneness of a 'higher reality' that transcends, or subsumes, all individual differences...[a reality that] exists in its own right, apart from the motivations and preferences of its members, and calls upon us to serve it with ultimate obedience."⁶ In this view, the self is a collective construct, one whose individual desires, talents, ambitions, and dreams are subordinated to a pure collective vision.

Neither of these visions of community nor visions of public and private reflects the premises of the new sciences, where individual and community—and private and public—coexist, coevolve, and bring each other into being. "Through our involvement in the creatively emergent community, the private and public aspects of ourselves define each other."⁷ As an atomic entity cannot be described without reference to both its wave and its particle aspects, personhood or self cannot be fully described without reference to both individual deterministic attributes and the community relationships that evoke the potentials that before were indeterminate and unstructured.

This calls to mind the central premise of Giddens's theory of structuration. Social systems are populated with human actors and the structures in which and through which they act. Social structures, the rules and roles and relations of these systems, are "both medium and outcome of the practices they recursively organize...Structure is not to be equated with constraint but is always both constraining and enabling."⁸ Structures and actors shape each other through daily encounters and ordinary occurrences. There is no way to understand the historically-situated self outside the "temporality of human practices," a mutual interpolation of the reversible time of daily lived experience, the irreversible time of the individual's life span, and the reversible time of social structures that are the context for and outcome of those practices.⁹ In other words, the transience of our daily activities, the awareness of time's direction in our lives, and the impermanence of social structure are woven into what we can experience as the self. The combination of these factors help to locate the self in history.

The Self and the Other: Active Listening and the Importance of Diversity

⁶ Ibid., p. 100.

⁷ Ibid., pp. 108-109.

⁸ Giddens, A. (1984) *The constitution of society: Outline of the theory of structuration*. Berkeley, CA: University of California Press, p. 25.

⁹ Ibid, p. 36, emphasis added.

The modern project is riddled with dualisms, but perhaps the most insidious is the Self/Other dichotomy—the tendency we have to define ourselves—not as Giddens suggests above, but in terms of a depersonalized Other. Often we see this Other as an outsider, as inferior—less intelligent, less rational, less able, less honorable, less attractive, less important, just less than we consider ourselves to be in every aspect. The basic polarity of Self versus Other allows flaws in the Self, whether acknowledged or not, to be projected onto the Other so that by comparison with the imperfection of the Other, the Self can seem more nearly perfect.¹⁰

Underneath the many sources of the modern Self, explicated so clearly by Taylor (1989), this basic dismissal of the Other results in a fragmentation and polarization of society so severe as to be described as schizoid.¹¹ Not only do individuals separate themselves from each other in such a polarized society, but they suffer from a fragmentation of consciousness as well.¹² The psychological dimensions of consciousness affected by the schizoid conditions of modern society are: behavior, emotions, thoughts, sensations, and imagery.¹³ Manifestations of the schizoid condition in the individual whose consciousness is compartmentalized include: inconsistent behavior, the separation of emotions from awareness, “rational” cognitive processes are chosen to defend against the processing of information through emotions, sensory information is either absent or situationally determined, and imagery is overshadowed by verbal or language representations.¹⁴ The symbolic, rational and language-based representation of the Self represses some areas of consciousness rather than attempt an integration of the cognitive and the intuitive.

We are all selves living in a world populated with others. The new sciences describe that world as interconnected, in which case, the individual actions of one person affect outcomes for all others. We have to break down barriers to cooperation with others—to integrate a fragmented society as well as to integrate the processes of individual consciousness. This requires that we recognize others as part of ourselves—that, rather than isolated individuals, we are “relational wholes, some of whose qualities only come into existence when our being overlaps with that of others.”¹⁵ Arendt attributes the creation of the human self to being seen and acknowledged by others through acting and

¹⁰ The reader is referred to David Harris’s (1996) description of self and other in the Vietnam War in Chapter 5 above. The basic mistakes made by the United States in prosecuting that war were grounded in an understanding of self and other so flawed that there could have been no other outcome than that which occurred.

¹¹ Taylor, C. (1989) *Sources of the self: The making of the modern identity*. Cambridge, MA: Harvard University Press.

¹² DeBerry, S. T. (1993) *Quantum psychology: Steps to a postmodern ecology of being*. Westport, CT: Praeger, especially Chapter 3.

¹³ *Ibid.*, p. 52.

¹⁴ *Ibid.*, p. 53.

¹⁵ Zohar and Marshall (1994), p. 211.

speaking in public—that it is the recognition of our public actions by others that makes us visible and real.¹⁶ The mutual recognition of each for the other “is impossible unless we conceive of others as capable of recognizing us”—unless we regard and respect those others as peers.¹⁷ This does not mean that we ignore differences or regard them as irrelevant—“it requires taking them seriously, but also taking seriously our capacity to act together.”¹⁸ We cannot attribute meaning to events in isolation, but only in the company of others. This shared attribution of meaning and significance is the epistemological standard of the new sciences.

To arrive at what is significant for us as a collectivity, we must not only think through the possible consequences of our actions individually, but also must communicate our thoughts with others using language. Language mediates a shared symbolic system that allows us to deliberate, if we attend to, or actively listen to, each other.¹⁹ We need not merely to attend to the other, but to be receptive to the symbolic content of the speech of others.²⁰ Bohm (1985) defines attention as the “stretch[ing of] the mind toward something...to come into contact with that something.”²¹ Although we more often think of the speaker commanding attention, and his or her speech act as a purposeful, conscious one, this view of attention or active listening places priority on the listener consciously and purposefully seeking the symbolic content of speech. “The receptive quality of listening is indeed unique by virtue of always being a movement toward another’s activity, an active involvement in a joint project. Speaking and listening are active responses to each other and they connect us in a way that no other sensory interaction does.”²²

The distinctive form of attention in active listening can be described as “welcoming,” what postmodernists might identify as a hospitable orientation or openness toward the other.²³ This definition takes into account two aspects of attention that might otherwise be neglected—caring or consideration for the object of attention (generally associated with friendship or common interest) and a sense of “focused awareness, of being mindful or

¹⁶ Arendt, H. (1958) *The human condition*. Chicago, IL: The University of Chicago Press.

¹⁷ Bickford, S. (1996) *The dissonance of democracy: Listening, conflict, and citizenship*. Ithaca, NY: Cornell University Press, p. 131.

¹⁸ Ibid.

¹⁹ The most significant aspect of a child’s socialization is the acquisition of language. This constitutes the child’s entry into the collective development of meaning. See, Bruner, J. (1990) *Acts of meaning*. Cambridge, MA: Harvard University Press, especially Chapter 3.

²⁰ Ediger, A. (1996) The act of listening is not “active listening.” *Studies in Symbolic Interaction*, 20, pp. 139-163, p. 140.

²¹ Bohm, D. (1985) *Unfolding meaning: A weekend of dialogue*. London, UK: Routledge, p. 118.

²² Bickford, S. (1996), p. 144, emphasis in original.

²³ Ediger, A. (1996), p. 151; cf. Farmer, D. J. (1995) *The language of public administration: Bureaucracy, modernity, and postmodernity*. Tuscaloosa, AL: The University of Alabama Press, especially Chapter 13 on alterity.

observant, of something or someone.”²⁴ While the first is more appropriately associated with the personal or private communicative transaction, the second can be applied in broader, more politically-oriented communication. In political deliberations, speakers must give this kind of attention to their audiences in order to persuasively argue for their point of view. Listeners, as active participants, must also stay focused so that they can “understand and judge others’ contributions, reshape their own opinions, and determine their own responses. This kind of listening is central to collective figuring out, to the communicative exercise of practical reason.”²⁵

The process that is authentic communication requires that parties to it engage each other’s ideas in the space that lies between them—a space that is fraught with uncertainty and risk, but is also where their greatest creative potential lies. As Bickford (1996) puts it, they engage in the task of building a path between them even as they travel that path. Such a “pathbuilding requires from us a joint effort of persistence and of courage.”²⁶ The most significant risk incurred through active listening is that what we hear may require that we reevaluate positions we have previously taken and with which our constructions of the Self are heavily identified. It takes courage and persistence to so minimize ego that we can change as a result of our participation in authentic dialogue.²⁷

Public communication and deliberation have importance because, in our uncertain world, we envision different futures and seek the ability to take action to bring these visions to fruitful realization. Because of our differences, because we disagree, we must discuss and deliberate, not necessarily with the idea of reaching consensus, but with the recognition that our different perspectives enhance our collective creative capacity. We engage in deliberation with the intention of arriving at, not final agreement, but sufficient agreement to enable us to take next steps. Our diversity, just like nature’s diversity, is required so that our social organization can capture and use all of our creative capacities as it evolves through the deliberative process. However, we have all too often replaced true deliberation with a passive attention to the media. If we abandon our civic responsibility to deliberate, we help create a climate where many of the obligations of citizenship are easily abdicated and the capacity for self-government is eroded.

Visualization and Making It Real

The new sciences tell us that human consciousness plays a role in the creation of the world—or, at least, a role in completing an unfolding creation process. An integrated consciousness filters information through both cognitive, verbal filters and through visual, imagery filters. The modern worldview has stressed the cognitive over the

²⁴ Bickford, S. (1996), p. 41.

²⁵ Ibid., p. 51.

²⁶ Ibid., p. 148.

²⁷ Ibid., p. 149.

intuitive, language over imagery. However, using imagery through visualization of a desired future state has proven an effective tool for reaching that state in a wide range of arenas, both personal and organizational. Athletes use mental imagery to reinforce physical training to perfect performance. Weight-loss programs, smoking-cessation programs, and various other therapy programs incorporate positive visualization as a strategy to reach goals.

The dictionary definition of visualization is “the act or process of interpreting in visual terms or of putting into visible form.”²⁸ Fanning (1994) defines visualization as “the conscious, volitional creation of mental sense impressions for the purpose of changing yourself.”²⁹ Visualizations are intended and willed, not merely dreams or fantasies. Visualization brings inchoate images from the unconscious into dialogue with the conscious mind where they can be shaped and modified.³⁰

By contrast, McKim (1972) defines visualization as “directed fantasy,” and argues that it is rooted in foresight, a quality we all share. It is foresight that gives rise to both anticipation and worry. As he puts it,

To foresee is to have a mental picture of something to be, to imaginatively envision the future. I am not describing a rare, occult power. Virtually everyone exercises foresight: worry and anxiety could not exist without it. Foresight is extremely powerful when used to envision future goals. And it is also an invaluable faculty when used to envision alternate future consequences of present plans.³¹

Whenever we have an important decision to make, we engage in a process of visualization and internal deliberation, fueled by “doubt, hesitancy, the need of making up one’s mind, of arriving at a decisive choice.”³² John Dewey described visualization as a process through which “reflection [is] directed to practical matters” in the course of making moral decisions.³³ This process is:

an imaginative rehearsal of various courses of conduct. We give way, in our mind, to some impulse; we try, in our mind, some plan. Following its career through various steps, we find ourselves in imagination in the

²⁸ Merriam-Webster’s Collegiate Dictionary, 10th ed. Springfield, MA: Merriam-Webster, Incorporated, p. 1321.

²⁹ Fanning, P. (1994) *Visualization for change*, 2nd ed. Oakland, CA: New Harbinger Publications, Inc., p. 8.

³⁰ Ibid., pp. 9-10.

³¹ McKim, R. H. (1972) *Experiences in visual thinking*. Monterey, CA: Brooks/Cole Publishing Co., p. 109, emphasis in original.

³² Dewey, J. *The Later Works of John Dewey, 1925-1953 (LW)*. Jo Ann Boydston, Ed. 17 vols. Carbondale, IL: Southern Illinois University Press, Vol. 7, p. 274. Hereafter, citations of Dewey’s work from the Carbondale collection will be designated as *EW* for *Early Works*, *MW* for *Middle Works*, or *LW* for *Later Works*, followed by volume number and page numbers. Dewey’s work taken from other sources will be cited in the normal manner.

³³ Dewey, J. *LW* 7, p. 273.

presence of the consequences that would follow: and as we then like and approve, or dislike and disapprove, these consequences, we find the original impulse or plan good or bad. Deliberation is dramatic and active, not mathematical and impersonal; and hence it has the intuitive, the direct factor in it. The advantage of a mental trial, prior to overt trial (for the act after all is itself also a trial, a proving of the idea that lies back of it), is that it is retrievable, whereas overt consequences remain. They cannot be recalled. Moreover, many trials may mentally be made in a short time. The imagining of various plans carried out furnishes an opportunity for many impulses...to get under way. Many and varied direct sensings, appreciations, take place. When many tendencies are brought into play, there is clearly much greater probability that the capacity of self which is really needed and appropriate will be brought into action, and thus a truly reasonable happiness result.³⁴

Visualization, in this sense of trying out future possibilities in order to choose from among their consequences, is reminiscent of the particle-wave duality of atomic entities. The wave aspect of an electron, for example, can be thought of as being smeared out to encompass, in a virtual state, all of its possible attribute values. Before measurement, those values simultaneously exist in a virtual state. When we imagine ourselves living out the consequences of various possible actions, we experience those consequences as if they were real—they bring out physical reactions and leave traces.³⁵

Visualization requires a context in order that it may lead to concrete change. It serves to clarify, focus, and energize other activities and elements so that the potential inherent in the person or group can be realized. For visualization to be effective, it must take as a starting place the accepted, basic core values, purposes, and abilities already incorporated into the organization or the person. While vision is the articulated scenario of a desired possible future, the past cannot be ignored—we learn from past experiences, and such “hindsight is useful for sharpening [our] foresight.”³⁶ Many personal and organizational values, abilities, and purposes may provide a basis for future accomplishments, but a basis of some sort is required. “No amount of faithful application of visualization techniques can turn a couch potato into a marathon champion. However, visualization can help an athlete in training to work through the pain and exhaustion associated with distance running, refining a potential champion into an actual champion.”³⁷

³⁴ Ibid., p. 275, emphasis in original.

³⁵ Zohar, D. (1990) *The quantum self: Human nature and consciousness defined by the new physics*. New York: Quill/William Morrow, pp. 29-33.

³⁶ Schwartz, P. (1991) *The art of the long view*. New York: Doubleday Currency, p. 168.

³⁷ Evans, K. G. (1997b) Imagining anticipatory government: A speculative essay on quantum theory and visualization. *Administrative Theory & Praxis*, 19 (3), pp. 355-367, p. 356.

Vision, according to Bellasco (1991), “paints a picture of where you want your organization to go and what you want it to be”—and this applies to visualization for persons or societies, as well.³⁸ Vision has been described as “a mental journey from the known to the unknown, creating the future from a montage of current facts, hopes, dreams, dangers and opportunities.”³⁹ As in every journey, you have to start from where you are. Before visualization can be employed in the creative process, there has to be authentic, dialogical reflection about both the present state of the system and about ends. The instrumental rationality that dominates our thought and conversation and our emphasis on the individual confines ends to the private sphere and only discusses means in the public, making visualization problematic. We can only visualize common ends if we are willing to engage in the honest deliberation of equals about what those ends should be.

Quantum Responsibility: Escaping From the Friedrich-Finer Dilemma

The rational discourse about responsibility in which we often engage is engendered by our reliance on experts to make critical decisions on our behalf. The tendency to specialize and professionalize all aspects of life is a hallmark of the modern credo. We expect experts to have better technical answers for what we see as problems, due to their professional training, and rely on them to produce satisfying outcomes. Consequently, in our role of citizens, we have abdicated much of our responsibility for outcomes on the public side of life. However, although we believe that only experts can discover the “one best way,” we don’t completely trust those experts. Our rational discourse, therefore, equates responsibility with objective control.⁴⁰

In the famous Friedrich-Finer “debate” of 1940, the need for some sort of objective control was not in question.⁴¹ The issue, rather, was who would exercise control over administrative practice—elected officials or professional associations? This appearance of disagreement masks the adherence, at a fundamental level, of both “sides” to the same rational principles. McSwite (1997) argues that the rational discourse is characterized by such “appearances”—appearances whose purpose it is to deny the “implicit, undisclosed,

³⁸ Bellasco, J. A. (1991) *Teaching the elephant to dance: The manager’s guide to empowering change*. New York: Plume, p. 99.

³⁹ McClendon, B. W. and R. Quay (1983) *Mastering change: Winning strategies for effective city planning*. Washington, DC: American Planning Association, cited in Cox, R. W., III, S. J. Buck, and B. N. Morgan (1994) *Public administration in theory and practice*. Englewood Cliffs, NJ: Prentice Hall, p. 181.

⁴⁰ Harmon, M. M. (1995), *Responsibility as paradox: A critique of the rational discourse on government*. Thousand Oaks, CA: Sage, p. 51.

⁴¹ Friedrich argued for wider administrative discretion with accountability based on professional standards. Finer countered that administrative actors must be subservient to the will of the people as expressed through the oversight of elected officials. See, Harmon, M. M. (1995), pp. 47-51, for a synopsis of the “debate.”

and undiscussed,” and too often unrecognized epistemological commitments of its participants.⁴² The terms “responsibility” and “accountability,” as they appear in the rationalist discourse, are colored with the tacit assumptions and commitments of the modern worldview.

If, on the other hand, we accept the role the new sciences assign us in the creation of reality through the application of our conscious will—if we, through our relationships with others, co-author the evolving text of life—then responsibility takes on new, deeply personal meaning. Our present rational discourse insists on “dividing categorically issues of public conduct from those of private life, of collective obligation from personal development.”⁴³ As a consequence, our current ideas about responsibility are confounded by paradox—if one is held personally responsible for the outcomes of her actions on behalf of the public, she must have sufficient autonomy and discretionary power to make moral decisions leading to those actions. However, if she exercises that power absent sufficient constituency input and some obligation to account for her actions, how can she be controlled? Without discretion and autonomy, taking personal responsibility is impossible. Mechanisms sufficiently powerful to control individuals’ actions, creating a scheme of pseudo-public responsibility, also effectively stifle creative action on the part of those individuals.

The modern discourse of public administration “reflects a pattern of consciousness that configures people as egotistic, individual, and engaged in a mutual struggle with one another.”⁴⁴ As a consequence, to be taken seriously in the discourse, one has to be “scientific” and “realistic,” and to see all social processes as based upon competition.⁴⁵ All other views are condemned as relativistic, as “soft.” Science, as a legitimating institution, has given its approval to the one right way, a way that can only be navigated by experts.

The new sciences, on the other hand, can be seen to support a view of persons as more altruistic, other-oriented, and engaged in collaborative processes. An alternate discourse for public administration—one more in keeping with this worldview—would be “oriented toward relationship, a mutual surrender to each other.”⁴⁶ But, how can we define responsibility within that discourse? And, if we can, can we deal with one fundamental and confounding question of our field: how does administration—with its modern roots and its concern for efficiency and expeditiousness—fit within any scheme for democratic governance?⁴⁷

⁴² McSwite, O. C. (1997) *Legitimacy in public administration: A discourse analysis*. Thousand Oaks, CA: Sage, p. 2.

⁴³ Harmon, M. M. (1995), p. 5.

⁴⁴ McSwite, O. C. (1997), pp. 14-15.

⁴⁵ *Ibid.*, p. 9.

⁴⁶ *Ibid.*, p. 15.

⁴⁷ *Ibid.*, p. 11.

The first order of business would be to reevaluate the role of expertise in governing. Experts, with their specialized knowledge and skills, would continue to be of value in a self-organizing democracy, but they would no longer have the responsibility for making the decisions that affect the lives of citizens. It would not be reasonable to expect that all of us can sort through the vast amount of information available to inform our public decision making. Those with expertise could act as information organizers and filters—as analysts offering alternatives based on their expertise. The deliberation leading to such decisions should take into account the perspectives of all—respecting the fact that each person affected by the decision has some knowledge to contribute to the process, and that, taken together “their perspectives [yield] an understanding ‘as good or better’ than that arrived at by ‘those who have special knowledge’.”⁴⁸

Within this new context, responsibility would once again be tied to human agency, unfettered by instrumental and impersonal controls, and governing would, at heart, be a moral endeavor. In place of impersonal universal rules for conduct, such an endeavor might be based upon certain elements of human character, as Wilson proposes, “universal dispositions,” or the tendency for people to feel sympathy, to treat each other fairly, to exercise self-control, and to attend to duty.⁴⁹ Although it is the darker side of human nature we more often see emphasized in news stories, he argues, most people, some more than others, exhibit these tendencies, and surely more would if socialized to do so. If we can rid ourselves of the ideal of the atomistic self, and recognize that “persons are at once socially constituted and self-determining,” we can nurture the moral capacity of citizens.⁵⁰ We presently invest our resources, both privately and publicly, in the development of expertise. We should be equally willing to invest our resources in the development of the capacities of citizens to effectively deliberate, recognizing that “a morally competent self [is] a product of affirmative social participation and of responsible emotion, belief, and conduct.”⁵¹

The starting point for a new definition of responsibility then is a move toward a more participatory mode of politics. The basis of all politics is conflict—if we did not disagree about important issues, there would be no need for political deliberation at all.⁵² This mode of politics is strong democracy, which Barber (1984) describes as:

resolv[ing] conflict in the absence of an independent ground through a participatory process of ongoing, proximate self-legislation and the

⁴⁸ Bickford, S. (1996), pp. 33-34. Bickford paraphrases and quotes the Aristotelian argument found in the *Politics*, section 1282a.

⁴⁹ Wilson, J. Q. (1993) *The moral sense*. New York: The Free Press, p. 225.

⁵⁰ Selznick, P. (1992) *The moral commonwealth: Social theory and the promise of community*. Berkeley, CA: University of California Press, p. 219.

⁵¹ Ibid.

⁵² Bickford, S. (1996); Gutmann, A. and D. Thompson (1996) *Democracy and disagreement*. Cambridge, MA: The Belknap Press of Harvard University Press.

creation of a political community capable of transforming dependent private individuals into free citizens and partial and private interests into public goods.⁵³

The social mode of being that is citizenship arises out of a circular, mutually-creating process with two aspects—participation and community.⁵⁴ “Strong democracy is the politics of amateurs, where every man is compelled to encounter every other man without the intermediary of expertise,” which, in turn, reduces the impersonal construct of the Other facilitated by the buffer of expertise into a real person whom we can come to know.⁵⁵ “Citizenship is not a mask to be assumed or shed at will.”⁵⁶ It is not a role we play when not engaged in pursuit of our private interests.

The school for citizenship that Barber describes is a product of doing and making and coming to know through practice. If the community begins to fulfill a role of nurturing the capacities of all to participate, and encourages all to participate in political decisions, then true freedom and agency, and consequently, responsibility result. Each step in the process leads to another and, the process reinforces itself as it goes along:

Community grows out of participation and at the same time makes participation possible; civic activity educates individuals [about] how to think publicly as citizens even as citizenship informs civic activity with the required sense of publicness and justice. Politics becomes its own university, citizenship its own training ground, and participation its own tutor. Freedom is what comes out of this process, not what goes into it.⁵⁷

Democratic governance is more than simple technical management, it is a collaborative, moral endeavor. The reality in which we live and aspire is not fixed and determinate—it is incomplete, and the way in which it is made to seem complete arises from the conscious efforts we make. Governance is a craft more than a science—

a craft...organized around four tasks:...developing identities of citizens and groups in the political environment...developing capabilities for appropriate political action among citizens, groups, and institutions...developing accounts of political events [ones that attribute meaning and lead to next steps, and]...developing an adaptive political system, one that copes with [or thrives on] changing demands and changing environments.⁵⁸

⁵³ Barber, B. (1984) *Strong democracy: Participatory politics for a new age*. Berkeley, CA: University of California Press, p. 151, emphasis in original.

⁵⁴ *Ibid.*, p. 155.

⁵⁵ *Ibid.*, p. 152, and p. 153.

⁵⁶ *Ibid.*, p. 153.

⁵⁷ *Ibid.*, p. 152.

⁵⁸ March, J. G. and J. P. Olsen (1995) *Democratic governance*. New York: The Free Press, pp. 45-46, emphasis in original.

In an environment of strong democracy, all of those developmental processes are encompassed in the practices of citizenship and governance. The public administrator's role would undergo a transition—from expert to enabler. The citizen's role would undergo a transition—from observer to participant. Responsibility would undergo a transition from the rationalist paradox it currently is to a covenant wherein we agree to share the risks of our common enterprise. We would enter this covenant as strangers and emerge as a community. We might then be able to realize an understanding of freedom and responsibility as reciprocal enabling principles—the first as the creation of self as moral agent and the relationships this status makes possible so that obligations are “freely made, but may be revised and transcended;” and the second as the “self-reflexive monitoring of action enabled by relationships with others.”⁵⁹

Lessons From John Dewey and Mary Parker Follett

In the past decade there has been a revival of sorts—a renewal of interest in the works of John Dewey and Mary Parker Follett by various academic disciplines and for varying purposes. Both had faded from the academic consciousness, either set aside to make room for other, more “scientific” scholars or, worse, intentionally lost because their ideas and the lessons they offered were considered suspect by dominant academic and social elites in America. While both were prominent in their lifetimes—Dewey as a professor of philosophy and education, a lecturer, and a prolific contributor to popular journals like the *New Republic*, and Follett as a “lecturer and writer and consultant to business and government leaders on both sides of the Atlantic”—the principal concepts of both seem to have been quietly shuffled aside to make room for “new” behaviorist management philosophies and “new” positivist political and social philosophies that swept the country in the 1930s and 1940s.⁶⁰

The renewed interest in their work by the academy (of Follett's by management and public administration and of Dewey's by philosophy and public administration) is not surprising considering the degree to which both of these scholars resonate with the new sciences. As more non-scientists have become familiar with quantum theory, chaos theory, complexity theory, and “green” ecological theory, as these ideas have filtered into the awareness of the wider academy, Dewey's and Follett's ideas no longer seem quite so out of place as they did when first offered.

It is as if the new sciences have given us the key to grandmother's attic where treasures from our past await our discovery. These treasures are personal and human, profound and

⁵⁹ Harmon, M. M. (1995), p. 119.

⁶⁰ Drucker, P. F. (1995) Introduction: Mary Parker Follett: Prophet of Management. (pp. 1-9) in P. Graham, ed., *Mary Parker Follett—Prophet of management: A celebration of writings from the 1920s*. Boston, MA: Harvard Business School Press, p. 1.

valuable. We vaguely remember grandmother telling us about what she has stored up there for us, but we were encouraged to set aside those memories in favor of the here-and-now, progressive concepts of the modern project of public administration. As we have gradually come to see modernity failing to live up to its promise, at least as far as it concerns our human spirit, the new sciences have appeared on the scene freeing us to reexamine grandmother's treasures. After a brief biographical sketch of Dewey and of Follett, we will unlock the attic and dust off the trunks and boxes, and look at some of the lessons for public administration contained therein.

John Dewey was born on October 20, 1859, in Burlington, Vermont. He was descended on both sides of the family tree from sturdy New England farming stock; his mother's family was the more distinguished and materially successful of the two. His father had left farming to become a commercial grocer in the city, but was not unduly devoted to his business nor particularly ambitious. When the call went out for volunteers to fight for the Union in 1861, Archibald Dewey sold his grocery business and enlisted, serving as a quartermaster in the First Vermont Cavalry.⁶¹ The year of Dewey's birth was also the year when Charles Darwin's *Origin of the Species*, John Stuart Mill's *On Liberty*, and Karl Marx's *Critique of Political Economy* were published, all of which would later figure in his development as a philosopher.⁶² More important to his early development, however, may have been his mother's strong religious beliefs and protectiveness, and his early childhood familial visits to Civil War battlefields.⁶³

Dewey entered the University of Vermont in 1875, at fifteen years of age, where he received a typical university education—"a basic knowledge of two or three literatures and some mathematics."⁶⁴ The purpose of American university education at that time was "to fortify the religious and moral convictions of Protestant adolescents," and Vermont's curriculum was designed to meet that purpose.⁶⁵ Dewey's early idealism was kindled by the university's chair of philosophy, James Marsh, who brought the work of Immanuel Kant to the attention of America, and his successor, H. A. P. Torrey, who continued in that tradition.⁶⁶ Dewey graduated from the University of Vermont in 1879, ranked second in his class and uncertain what his future held in store.⁶⁷

Dewey's first job, a seemingly horrendous choice for a shy and soft spoken 20-year old, was as a schoolteacher in rough and rowdy Oil City, Pennsylvania. It was here that he

⁶¹ Westbrook, R. B. (1991) *John Dewey and American democracy*. Ithaca, NY: Cornell University Press, pp. 1-2; cf. Ryan, A. (1995) *John Dewey and the high tide of American liberalism*. New York: W. W. Norton & Company, pp. 41-42.

⁶² Westbrook, R. B. (1991), p. 2.

⁶³ *Ibid.*, p. 3; cf. Ryan, A. (1995), p. 42.

⁶⁴ Ryan, A. (1995), p. 48.

⁶⁵ Westbrook, R. B. (1991), p. 6.

⁶⁶ *Ibid.*, pp. 6-7; cf. Ryan, A. (1995), pp. 49-53.

⁶⁷ Ryan, A. (1995), p. 56; cf. Westbrook, R. B. (1991), p. 8.

wrote his first academic paper, “The Metaphysical Assumptions of Materialism,” which was published in the *Journal of Speculative Philosophy* in 1882.⁶⁸ Dewey went on from there to do his graduate work at Johns Hopkins under the principal tutelage of G. S. Morris, who introduced him to the work of T. H. Green and that of Hegel.⁶⁹ Charles Sanders Peirce was also a part of the department’s faculty while Dewey attended Johns Hopkins.⁷⁰ Dewey defended his Ph. D. dissertation, “Kant’s Psychology” and was awarded his degree in 1884, then, followed Morris, who had been replaced as department head, to a position as instructor at the University of Michigan.⁷¹

Dewey left Michigan in 1894 to join his former colleague, James H. Tufts, at the newly founded University of Chicago. At Chicago, he founded the University School, a laboratory school which his wife Alice headed, where much of his now-famous educational philosophy was put into practice. While in Chicago, he became involved with Jane Addams’s Hull House, and he and colleague, George Herbert Mead, gave lectures at the settlement. He remained at the University of Chicago until 1904 when, as a result of friction between Dewey and the University’s Department of Education, he resigned and moved to Columbia University in New York City, with which he was affiliated for the balance of his academic career.⁷²

Dewey’s death in 1952, in his ninety-third year, marked the end of an era in American education, American philosophy, and American liberalism. During the 70-year span of his professional life, he wrote prolifically—the body of his work, in the form of books, essays, speeches, and reviews, fills 37 volumes of edited text.⁷³ Yet, within 25 years of his death, his unique “instrumentalism” had disappeared from university philosophy curricula and his educational philosophy had become a target for those who seek a scapegoat for the decline in American education.⁷⁴ Even before his death, Dewey’s radical vision of democracy was attacked and supplanted by democratic realists of the 1940s and 1950s, and his reconstruction of philosophy as social criticism had fallen victim to the popularity of both logical positivism and analytical philosophy.⁷⁵ John Dewey, once America’s most respected public philosopher, was relegated to grandmother’s dusty attic.

⁶⁸ Ryan, A. (1995), pp. 56-57; cf. Westbrook, R. B. (1991), p. 8.

⁶⁹ Westbrook, R. B. (1991), pp. 13-20.

⁷⁰ Ibid., p. 13; cf. Ryan, A. (1995), p. 63.

⁷¹ Ryan, A. (1995), p. 77; cf. Westbrook, R. B. (1991), p. 20-21. Dewey’s dissertation, unfortunately, has not survived.

⁷² Ryan, A. (1995), pp. 118-153 and Westbrook, R. B. (1991) pp. 59-113 describe the Chicago years and Dewey’s work on education.

⁷³ Edited by Jo Ann Boydston, published by Southern Illinois University Press (Carbondale, IL) as *The early works of John Dewey, 1882-1898*; *The middle works of John Dewey, 1899-1924*; and *The later works of John Dewey, 1925-1953*.

⁷⁴ Ryan, A. (1995); cf. Westbrook, R. B. (1991), p. 542ff.

⁷⁵ Westbrook, R. B. (1991), p. 537-538.

Mary Parker Follett was born on September 3, 1868, in Quincy, Massachusetts. Her mother was an invalid, leaving Mary with considerable responsibility for her mother's care and for the care of her younger brother. She had a close relationship with her father who was a machinist in a factory. She was educated at the Thayer Academy, graduating in 1884, at the age of fifteen. In 1888, she enrolled at what would become Radcliffe College, where she studied English, history, and political economy for two years, before traveling to Europe and continuing her studies at Cambridge. While at Cambridge she developed material for her first book, *The Speaker of the House of Representatives*. She had to cut her studies short to take care of her mother. Eventually she finished her A.B. degree at Radcliffe.⁷⁶

Supported by an inheritance, she went into social work, concentrating on the development of evening educational programs and vocational guidance programs.⁷⁷ In 1918, she published her second book, *The New State*, which developed as a critique of then current political theory and institutions from the perspective of group dynamics. This latter topic would be the focus of the remainder of her career, and formed a basis for her management consulting practice. Her third book, *Creative Experience*, was published in 1924. The balance of her most relevant written work is found in Elliot Fox's and Lyndall Urwick's edited collection of her papers and lectures titled, *Dynamic Administration*, and published after her death in 1933.⁷⁸

Although one of her papers was included in Gulick and Urwick's (1937) *Papers on the Science of Administration*, the study papers for the Brownlow Committee, she was considered more of a luminary in the business management community than a part of public administration. Her work in the areas of supervision, conflict resolution, and coordination and control were on the cutting edge of management at that time, and remain fresh, honest, and pertinent today.

Why was she so summarily dismissed to grandmother's attic? Drucker (1995) doesn't think this happened just because she was a woman—there were a lot of “female stars” in a variety of fields during her productive years.⁷⁹ He postulates that her work was ignored not because of who she was, but because her ideas were so much the opposite of what dominant elites in the 1930s and 1940s wanted to hear. Her notion that conflict could be made to work for understanding difference better, for example, fell on the deaf ears of men for whom “the proper use of conflict was to conquer...[who] did not believe in

⁷⁶ Fry, B. R. (1989) *Mastering public administration: From Max Weber to Dwight Waldo*. Chatham, NJ: Chatham House Publishers, Inc., pp. 99-100.

⁷⁷ It is interesting to note that Follett, as was often the case with single daughters, had a duty to care for her mother that interrupted her education. It took her 10 years to earn her bachelor's degree. It is also interesting that she, like many other educated middle class women of her time, used an inheritance to support her as she practiced her vocation in social work.

⁷⁸ Fry, B. R. (1989), p. 100.

⁷⁹ Drucker, P. L. (1995), pp. 2-4.

conflict resolution, [because] they believed in unconditional surrender.”⁸⁰ There was also a vague suspicion that she was a closet socialist—not a palatable teacher for a society that shunned socialism like the plague. Perhaps it was the fact that she saw things so differently, especially with regard to individuals and their relationships with each other and with community. To follow her lead, and Dewey’s, may have posed too much of a challenge for a society that generally thought America’s governmental and economic systems were on the sure road to progress and destiny.

When we open the trunks in the attic and dust off their contents, we can find many useful lessons for today’s public administrator. Those outlined below represent only a sample of the treasures available—many others, equally useful, are not covered. One significant task for public administration research would be the complete reexamination of Dewey and Follett to see which others of their lessons can be reclaimed.⁸¹

The Democracy Lesson

To build a notion of what democratic administration might look like—one based on the work of Dewey and Follett—we first need to see democracy through their eyes and recognize the resonance of their working definitions with the principles of self-organizing found in the new sciences. In the modernist concept of democracy, we generally think solely in political terms and reduce it to its features: a broad suffrage, a rough political equality connecting one person to one vote, majority rule, and a liberal constitutional system protecting individual rights. If we are analyzing American democracy, we would add to that list such concepts as representation, interest group liberalism, and an economic base of capitalism mixed with features of a welfare state. These elements all appear on one level of analysis in John Dewey’s understanding of democracy, but they could by no means be said to embody the meaning of democracy as he used the word.

Dewey’s view of democracy encompassed a much broader and deeper concept than that of political structure, institutions, and form. The difference begins at the very foundation of democratic theory—the definition of the individual and his or her relationship with society and the state. Political structures, according to Dewey, including those we associate with public management, do not exist solely for the purpose of economic efficiency in their operations, but more importantly “to help develop the ability of the

⁸⁰ Ibid., p. 4.

⁸¹ This would be an arduous task. Dewey’s writing style is typical of the Victorian era, and a love for his ideas is required to sustain the effort to plow through the thousands of pages. However, once the task is begun, it becomes easier. The continuity of Dewey’s thought becomes apparent only if one reads across the several disciplines (education, political theory, logic, ethics, and philosophy) he covers. Follett’s writing is less of a challenge in terms of style, but her conceptualizations become much clearer if the reader has already accepted some of the ideas of the new sciences.

members of a community to live lives that are imbued with a rich aesthetic sense of significance and worth.”⁸²

Liberal political theory is based on a notion of the individual in a state of nature and endowed with natural rights prior to the beginning of civil society. Social groups and governance arise when individuals agree to giving up their perfect “natural” freedom for some degree of security, since rights-bearing, isolated individuals cannot live peacefully together absent a contract defining a relationship among them and protecting their individual rights. Such an understanding of the individual leads naturally to an economic system driven by a marketplace of goods and services and a political system where the common good is defined and public policy is driven by a marketplace of interests and influences.

Dewey critiqued this notion of individualism and posed a new understanding of the term in a series of articles in the *New Republic* in 1929-1930, later published as *Individualism, Old and New*.⁸³ The old American individual is “lost,” according to Dewey, both economically and politically, and our continued dependence on the assumptions and illusions associated with that lost individual has allowed true individuality to be eroded.⁸⁴ Participation in the corporate American economic life leaves people dissatisfied, unfulfilled, and insecure. Dewey saw Americans as confined to economic roles that do not challenge their intelligence or involve them creatively, workers lose touch with their creative capabilities, while capitalists act as “parasites” in their “deflection of social consequences to private gain.”⁸⁵ Having not only lost control of the means of production, in a Marxist sense, workers have also lost any sense of creative involvement in their work, and although they spend most of their waking hours in the corporate body, they are not connected in a meaningful way with each other through that association.

Political activity also leaves the American individual lost. Political issues, as inscribed in party platforms and presented in campaigns, Dewey argued, are characterized by their “irrelevant artificiality.”⁸⁶ American life has gradually been divorced from meaningful political discourse, civic participation, and involvement in a varied associational life in the community. These communal, public activities have been crowded out by a plethora of private activities associated with the old concept of the individual. As a result of these disconnects, people no longer have contact with the social place that gives their

⁸² Alexander, T. M. (1995), John Dewey and the roots of democratic imagination. (pp. 131-154) in L. Langsdorf and A. R. Smith, eds. *Recovering pragmatism's voice: The classical tradition, Rorty, and the philosophy of communication*. Albany, NY: State University of New York Press, p.153. Cf. Dewey, J. *LW 2; LW 13*.

⁸³ Dewey, J. *LW 5*, pp. 41-123.

⁸⁴ Campbell, J. (1995) *Understanding John Dewey: Nature and Cooperative Intelligence*. Chicago, IL: Open Court, p. 160.

⁸⁵ Dewey, J. *LW 11*, p. 158; *LW 5*, p. 67.

⁸⁶ Dewey, J. *LW 2*, p. 312.

individuality meaning. The restlessness and apparent rootlessness of the American individual are not causes but rather symptoms of a loss of meaningful contact with others.

Dewey took the position that society predates and gives rise to the individual, rather than that individuals, through their contracts with each other, give rise to social groups. The rights of the individual are a social product. They are not the negative protections from encroachment by others or by the state as we are accustomed to thinking, but are rather positive rights—the equal freedom of each to develop his or her inherent capacities to the utmost degree. “Only in social groups does a person have a chance to develop individuality.”⁸⁷

That individuality is not premised upon the Lockean notion that the individual is antecedently endowed with perfect freedom and perfect equality with which qualities we enter the world on an equal footing. Freedom is not something inherent that “can be made manifest by the simple removal of restrictions. It is a capacity that may be developed through time and in conjunction with the aid of others.”⁸⁸ It is not autonomy we should seek, but rather the richness of opportunity for development found in association with others.

The liberal notion of antecedent equality presupposes that equality is sameness and can be quantified and measured against some standard. The standard often used in Dewey’s day and today is success in the competitive world of the market. Dewey denied the notion that “somehow behind the appearances of difference, everyone is alike...[or] that somehow we are all competitors lined up at the beginning of a single race.”⁸⁹ Equality in Dewey’s view is a goal for which we strive; difference does not reflect such evaluative measurements as “better” or “worse,” but merely marks us each as unique. “Democratic equality...requires that we seek out, identify, and appreciate the distinctive contributions of each person,” and should be judged by “the way all of its citizens are able to develop their capacities and thus grow in effective freedom.”⁹⁰

Dewey argued that the notion of conflict on a broad scale among individuals and between society and individuals is a reflection and false generalization of particular conflicts that do arise, such as: class conflicts, wars, and the tensions resulting from change.⁹¹ Such conflicts are exacerbated by the old concept of individualism. The task for American society, after the last remnants of that concept are eradicated, is to develop the social space where we can recognize the individual “as being in process, as developing in the

⁸⁷ Dewey, J. *MW* 15, p. 176.

⁸⁸ Boisvert, R. D. (1998) *John Dewey: Rethinking our time*. Albany, NY: State University of New York Press, p. 62; cf. Campbell, J. (1995), section 5.4.

⁸⁹ *Ibid.*, p. 70.

⁹⁰ *Ibid.*, p. 70; and pp. 71-72.

⁹¹ Dewey, J. *LW* 7.

course of social interaction and by means of society's facilities."⁹² For Dewey, then, democracy was first a social, and only subsequently a political, phenomenon.

For Mary Parker Follett, the phenomenon of democracy is more basic yet. She sees democracy as a natural outcome of the human condition—the unity arising from the human instinct for wholeness that we experience through “infinitely expanding reciprocal relations.”⁹³ She describes democracy as the “single life”—“not my life and others, not the individual and the state, but my life bound up with others, the individual which is the state, the state which is the individual.”⁹⁴ The voice of this democratic unity is not expressed through public opinion polls or the clash of opposing political wills, but rather the “collective will” is expressed through “a unifying of activities.”⁹⁵ Wisdom and reason “emerge from our daily activities”—from the experiences of the daily lives of all persons. Democratic self-government, therefore, becomes a creative process of integration—“an attempt to create unity.”⁹⁶

Follett described the world as dynamic and inclusive. Static forms, such as institutions, and mechanical, deterministic processes do not bring social control. Any democratic control that can be achieved is not a product of legislation or influence. Rather, it arises from “people learning how to evolve collective ideas.”⁹⁷

Follett argued that thought (theory) could not be separated from nor held as superior to activity (practice), a position with which Dewey wholeheartedly agreed.⁹⁸ In Dewey's view, “theory and practice are...only different phases of a stretch of intelligent inquiry, theory being the ‘ideal act’ and practice the ‘executed insight’”—each is part of a continuum, not half of a dichotomy.⁹⁹ Follett contended that democracy dissolved all of the dualisms of the modern product. The state is not a product of institutions and theories, but of human activities. The state comes into being through “the activities of its citizens; and as the activity of the citizens changes the state, the state exerts a different stimulus on the citizens so that their activity is different.”¹⁰⁰ Democracy “is an assertion that the people who do the doing are also thereby doing the thinking, that a divorce of these two is impossible.”¹⁰¹

⁹² Campbell, J. (1995), p. 164.

⁹³ Follett, M. P. (1965) *The new state: Group organization the solution of popular government*. (hereafter identified as *NS*) Gloucester, MA: Peter Smith, p. 157.

⁹⁴ Follett, M. P. *NS*, p. 156, emphasis in original.

⁹⁵ Follett, M. P. (1930) *Creative experience*. (hereafter identified as *CE*) New York: Longmans, Green and Co., p. 208.

⁹⁶ *Ibid.*, p. 216; p. 209.

⁹⁷ Follett, M. P. *NS*, p. 159.

⁹⁸ Follett, M. P. *CE*, p. 203; Hickman, L. A. (1990), *John Dewey's pragmatic technology*. Bloomington, IN: Indiana University Press, especially Chapter 2; cf. Dewey, J. *LW 12*.

⁹⁹ Hickman, L.A. (1990), p. 111.

¹⁰⁰ Follett, M. P. *CE*, p. 219.

¹⁰¹ *Ibid.*, p. 203.

Follett's understanding of individuality—of self and other, of person and community—and her commitment to group process form the basis for democratic decision making. The key to our individuality is difference, and we only see difference when we enter into the process of relating. "Individuality is the capacity for union...I am an individual not as far as I am apart from, but as far as I am a part of other men."¹⁰² Follett argued that decisions about the common good need "to be based not on my needs or yours, nor on a compromise between them or an addition of them, but on the recognition of the community between us."¹⁰³ The relationship, standing in the space between us, is the locus for our responses to each other and for our common decision making.

We have to attend to democracy, not take it for granted, since it is the means through which we have access to the needs and wants of each other.¹⁰⁴ Democracy is "a great spiritual force evolving itself from men, utilizing each, completing his incompleteness by weaving together all in...community life."¹⁰⁵ It is democracy's task to "free the creative spirit of man," and it is the integrative process that uses our diversity—our difference—to bring us together.¹⁰⁶ Follett describes this social process in this way:

We need our imperfections as well as our perfections. So we offer what we have—our unwisdom, our imperfections—on the altar of social process, and it is only by this social process that the wonderful transmutation can take place which makes of them the very stuff of which the Perfect Society is to be made. Imperfection meets imperfection, or imperfection meets perfection; it is the process which purifies, not the 'influence' of the perfect on the imperfect.¹⁰⁷

The "Perfect Society" of cooperation and coevolution she envisioned, of course, has not been achieved. The liberal, rational view of the individual and of society has prevailed, and we have a fragmented and divided public and only a procedural, political democracy. We see difference as a barrier, not as an opportunity, and community as restricting, not as enabling the emergence and enrichment of human capacity. The democracy lesson taught by Dewey and Follett was ignored in the past, but we would benefit from trying to teach it again.

The Communication Lesson

Dewey saw communication as transaction, and based on the nature and extent of consequences of each transaction, as a contributing factor to the delineation between what

¹⁰² Follett, M. P. *NS*, p. 62, emphasis added.

¹⁰³ *Ibid.*, p. 79.

¹⁰⁴ *Ibid.*, p. 160.

¹⁰⁵ *Ibid.*, p. 161.

¹⁰⁶ *Ibid.*, p. 159.

¹⁰⁷ *Ibid.*, p. 158.

is public and what is private. Where consequences are limited in effect to the two parties to the communicative transaction, it is private; when indirect consequences follow, the transaction “acquires a public capacity,”¹⁰⁸ or falls into the public sphere. Because humans anticipate consequences to their actions, including their communication acts, they attempt to secure favorable consequences and avoid those that damage either themselves or a broader segment of society. “When indirect consequences are recognized and there is effort to regulate them, something having the traits of a state comes into existence.”¹⁰⁹ One aspect of the meaning assigned to communicative transactions is this prospective analysis of consequences and attempts to regulate them. Thus, not only is society created and maintained by communication, but so also are political institutions created in anticipation of the broader consequences of communication.

Dewey’s understanding of democracy—that it is first a social and only secondarily a political phenomenon—explains the stress he placed on education and communication as tools for community-building. While most agree that the school is one of the principal institutions for the socialization of children, the kind of communication Dewey saw as essential to democracy goes beyond the transmission of facts from one generation to the next. It is the “glue that binds the social group together in spite of the differing interests [and capacities] of the members.”¹¹⁰ Dewey thought that society exists not only “by transmission, by communication, but it may fairly be said to exist in transmission, in communication...Men live in a community by virtue of the things which they have in common; and communication is the way in which they come to possess things in common.”¹¹¹ The give-and-take of dialogue helps us to attribute common meaning to things and events, and, ultimately, through the mediation of that common meaning and its agreed-to significance, to be able to live in community.

Communication, language, and discourse form the “natural bridge that joins the gap between existence and essence.”¹¹² When moved from the real world of experience across that bridge, natural events “are subject to reconsideration and revision; they are re-adapted to meet the requirements of conversation, whether it be public discourse or that preliminary discourse termed thinking.”¹¹³ For Dewey, language was the “tool of tools” as it is only through its mediation that collective inquiry and knowing are possible.¹¹⁴ And, the heart of language is communication—“the establishment of cooperation in an

¹⁰⁸ Dewey, J. (1939) The modes of societal life. (pp. 365-404) in J. Ratner, ed., *Intelligence in the modern world: John Dewey’s philosophy*. New York: Random House, p. 368.

¹⁰⁹ *Ibid.*, p. 367.

¹¹⁰ Evans, K. G. (1997a) Reclaiming John Dewey: Democracy, inquiry, pragmatism, and public management. Presented at the Fourth National Public Management Research Conference, The University of Georgia, Athens, GA, October 30-November 1, 1997.

¹¹¹ Dewey, J. *MW* 9, p. 7, emphasis in original.

¹¹² Dewey, J. (1958) *Experience and nature [LW I]*. New York: Dover Publications, Inc., p. 167.

¹¹³ *Ibid.*, p. 166.

¹¹⁴ *Ibid.*, p. 186; cf. Hickman, L. A. (1990), especially Chapter 2.

activity in which there are partners, and in which the activity of each is modified and regulated by partnership.”¹¹⁵ Meaning is defined both by the inclusive or public intent it demonstrates and by “the acquisition of significance by things in their status in making possible and fulfilling shared cooperation.”¹¹⁶

The technologies of the early 20th century cried out for some kind of collective control, and, in Dewey’s view, liberal assumptions about the individual in combination with the replacement of other associations with corporate life obstructed efforts to achieve that control.¹¹⁷ Greater and greater areas formerly under some kind of collective control have been lost to experts whose narrowly defined specialties and privileged knowledges have given them an overwhelming influence in the arena of public discourse. The privileging of the voice of the expert, the development and use of technical languages, and the erosion of communication across publics have widened the gap between government and citizens.¹¹⁸ The ordinary citizen’s voice has been drowned out, and her participation in decisions and policies affecting the common good has been reduced to meaningless ritual. Communication and the cooperative activities it mediates—both in terms of substance and in terms of media—affect the quality and life of the community. “No person remains unchanged and has the same future efficiencies, who shares in situations made possible by communication.”¹¹⁹

Follett’s essential agreement with Dewey about the role of communication is implicit in her distinctions between the group and the crowd, the mob, and the herd, and her understanding of the nature of supervision.¹²⁰ When we are engaged in group process, our communication is tempered with “self-control, restraint, and discipline,” it “stimulates thought,” and leads to “harmony.”¹²¹ When part of a crowd, we let ourselves go, want immediate action, not thought, and achieve a “unison” that is “largely superficial.”¹²² Although both a crowd and a mob are constituted by a mass of people “acting under the same suggestion,” it is the mob whose activities we decry.¹²³ In a mob, authentic communication is limited or replaced by hysteria, and outcomes are often unfortunate, as in lynch mobs, or panicked crowds in a burning theater. The herd is just people satisfying their “gregarious instinct,” congregating in accordance with some superficial similarity.

¹¹⁵ Dewey, J. (1958), p. 179.

¹¹⁶ Ibid., p. 180.

¹¹⁷ Dewey, J. *LW 5*, pp. 72-73; cf. Stever, J. A. (1993) Technology, organization, freedom: The organizational theory of John Dewey. *Administration & Society*, 24 (4), pp. 419-443.

¹¹⁸ Dewey, J. (1954) *The public and its problems*. [LW 2] Denver, CO: Alan Swallow, p. 152.

¹¹⁹ Dewey, J. (1958), p. 204.

¹²⁰ Follett, M. P. *NS*, pp. 85-92; and The giving of orders. (hereafter “Orders”) (pp. 21-41) in E. M. Fox and L. Urwick, eds. (1982) *Dynamic administration: The collected papers of Mary Parker Follett*. 2nd ed. (hereafter *DA*) New York: Hippocrene Books, Inc.

¹²¹ Follett, M. P. *NS*, p. 86.

¹²² Ibid.

¹²³ Ibid., p. 87.

Of these types of association, the one mediated by communication as Dewey described it, is the group.

The key to the kind of synergy Follett ascribes to the group process is communication. The group is “a cohesive and coherent entity whose processes can lead to changes in individual ideas and actions that produce mutual compatibility and harmony among its members,” leading to their ability to “create something that individuals working separately could not have created.”¹²⁴ The tool that facilitates the group process is language and the communication among partners that permits agreement on meaning.

In her paper, “The Giving of Orders,” Follett asks the reader to visualize one communicative act—the act of the supervisor issuing orders in an organization—and to “see what it would mean to take a responsible attitude toward our experience in regard to that one thing.”¹²⁵ Her purpose in this paper is to suggest, through the example of supervisory communication, that persons should reflect upon “what principles [they] are acting on or what principles [they] intend to act on” when carrying out organizational roles.¹²⁶ The experimental attitude toward experience she advocates has three steps—adopting a conscious awareness of the principles behind action, accepting responsibility in deciding how to act, and experimenting and making note of, and possibly pooling, results.¹²⁷

Specifics of language involved in management-labor communication need to be addressed, as well, because of the loaded, symbolic content of some terms like “orders,” “grievance,” and working “under” some other person’s authority.¹²⁸ She recommends depersonalizing the giving of orders by recognizing that proper instructions come from the situation in which they are issued—that supervisors and workers work with each other in arriving at the proper actions to take in the particular situation in which they find themselves.¹²⁹ Thus, orders are transformed into communication that gets the job done and reinforces a sense of integration in the workplace.

In Dewey’s view, communication offers a realistic hope of society becoming more unified and democratic. But that hope hinges on a number of conditions. First, the symbolic content of language had not then and still has not kept pace with social growth. Dewey challenges us to “revise the outdated symbolism which promotes a value system more consistent with the past than with the present.”¹³⁰ The second challenge is to

¹²⁴ Fry, B. R. (1989), p. 101.

¹²⁵ Follett, M. P. “Orders,” p. 21.

¹²⁶ Ibid.

¹²⁷ Ibid., p. 22.

¹²⁸ Ibid., pp. 32-33.

¹²⁹ Ibid., p. 33.

¹³⁰ Boisvert, R. D. (1998), p. 85.

overhaul the ways in which “people reflect and deliberate,” through what he called the application of critical or social intelligence to processes of “political inquiry.”¹³¹

The third challenge is a reform of popular culture. The symbolic content of popular culture—the stress on material goods, youth, beauty, self-interest writ large and small—and the immediacy of today’s media combine to bombard us all with images and their inherent messages. The message of the modern project is contained in symbols of success, prosperity, heroism and patriotism (as John Wayne was to several generations of Americans), and autonomy—all associated with the “old” individual.

Even the news today is packaged—its presentation is as important in terms of the message transmitted as is its content. Political messages are crafted in convenient sound bites and presented in photo opportunities that fit the format of television news. What passes for “news” today “involves mostly irruptions of striking events which seem to occur without context, history, or even consequences, since they are rarely followed out.”¹³² According to Dewey, it is impossible to determine the meaning of news because these events and messages are not placed into some relation with the old.¹³³

For Dewey and Follett both, the basis for democratic practice is:

faith in the capacities of human nature; faith in human intelligence and in the power of pooled and cooperative experience. It is not belief that these things are complete but that if given a show they will grow and be able to generate progressively the knowledge and wisdom needed to guide collective action.¹³⁴

The task that falls to those who want to reach for the promise of democratic practice is to keep the faith described above. We can work to align our symbols with the vision of self and society encompassed by the new sciences. We can encourage the practice of social intelligence and pragmatic experimentation. And, we can resist the images and messages of popular culture and try to control the media that transmit them.

The Expertise Lesson

The question of the antagonistic relationship between bureaucratic administration and democratic spirit we have asked assumes, as Follett said, “that we are obliged to choose between the rule of that modern beneficent despot, the expert, and a muddled, befogged ‘people’.”¹³⁵ She warned that such a choice—“to divide society on the one side into the

¹³¹ Ibid., pp. 86-87.

¹³² Ibid., p. 91.

¹³³ Dewey, J. *LW* 2, p. 347.

¹³⁴ Dewey, J. (1939), p. 402.

¹³⁵ Follett, M. P. *CE*, p. 3.

expert and the governors basing their government on his reports, and on the other the people consenting [to this rule]”—would be courting disaster.¹³⁶ Our quickness to rely on the former for decisions may come from “the desire to waive responsibility...the endless evasion of life instead of an honest facing of it.”¹³⁷ However, it becomes our responsibility, through our democratic associations, to “train ourselves, to learn how to use the work of experts, to find our will, to educate our will, to integrate our wills.”¹³⁸

Follett argues that we need experts, not to decide for us, but to “do away with muddle.”¹³⁹ On the same note, Dewey was concerned with the glut of unorganized information provided by the advance of communication technology—in his day, the circulation of newspapers and magazines, the telegraph, the telephone. He saw experts as contributing to cooperative inquiry not through “framing and executing policies, but in discovering and making known the facts, upon which the former depend.”¹⁴⁰ Experts have the training and have developed the skills to do the research and present alternatives—to, as Wildavsky (1979) puts it, “speak truth to power,” but they may not “properly determine or dictate” policy.¹⁴¹ For making the difficult, value-laden choices among alternatives, there is no expertise, as such—decisions that will effect lives and livelihoods belong to the democratic and cooperative process of social inquiry involving all who might be effected.

Follett would say we all have our parts to play. Citizens don’t need to be technical experts—what democracy means [is] “that the experience of all is necessary”—not that every participant in inquiry and decision making needs to be an expert.¹⁴² We should not accept what the expert has to say blindly. Follett uses the relationship between the farmer and the academic of the agricultural college as an example:

The intelligent farmer does not take the formulae of the colleges as revealed truth, but as a basis from which to begin his own observations. He knows that the expert is not one who has access to the secrets of the All-wise, but one who has a particular kind of experience which must be added to his own particular kind of experience, that both have their parts to play.¹⁴³

¹³⁶ Ibid., p. 5.

¹³⁷ Ibid., p. 4.

¹³⁸ Ibid., p. 5.

¹³⁹ Ibid., p. 6, emphasis in original.

¹⁴⁰ Dewey, J. *LW* 2, p. 235.

¹⁴¹ Wildavsky, A. (1979) *Speaking truth to power: The art and craft of policy analysis*. Boston, MA: Little, Brown & Company; Campbell, J. (1995) *Understanding John Dewey: Nature and cooperative intelligence*. Chicago, IL: Open Court, p. 205; cf. Dewey, J. *MW* 10, pp. 406-407.

¹⁴² Follett, M. P. *CE*, p. 19.

¹⁴³ Ibid.

Our present reliance upon experts is an attempt to have our decisions informed by facts. Both Dewey and Follett recognized that what we call facts are not some immutable aspects of universal truth. Dewey would have us substitute the concept “warranted assertability” for that of “truth.” He agreed with his fellow pragmatist William James that truth does not inhere in objects or events, but rather consists of the meaning we ascribe to them. As James put it, “the truth of an idea is not a stagnant property inherent in it. Truth happens to an idea. It becomes true, is made true by events.”¹⁴⁴

Follett points out that what we label a “fact” is often merely the information that most closely reflects our particular framing of the problem—that the facts the experts present to us, or that we perceive, have been subjected to some minimal interpretation. Much as James does with the concept “truth,” Follett debunks the *a priori* authority of “facts”—“facts become such for us when we attend to them. Our attending to them is bound up in the situation.”¹⁴⁵ She also denies the strict separation of fact and opinion—“the gathering [of facts] is always in itself an interpreting. Interpreting is part of the vision, not something done with the vision.”¹⁴⁶ Administrative officials and business executives, leaders who depend on the advice of experts, “should [not] abdicate thinking on any subject because of the expert.”¹⁴⁷

In fact, none of us should abdicate thinking on policy issues. The experience of each—“experts and administrative officials and people”—is required, if we are to keep up with the evolving policy situation.¹⁴⁸ What Follett called the social process and what Dewey called inquiry both require an integration of experience. Experts play an important, although not predominant, role in both. Follett sums it up in this way:

The expert must find his place within the social process; he can never be made a substitute for it. Technical experience must be made a part of all the available experience. When we see expert and administrative official, legislator and judge, and the people, all integral parts of the social process, all learning how to make facts, how to view facts, how to develop criteria by which to judge facts, then only have we a vision of a genuine democracy.¹⁴⁹

The Situation Lesson

¹⁴⁴ James, W. (1907) Pragmatism’s conception of the truth. (pp. 227-244) in H. S. Thayer, ed. (1982) *Pragmatism: The classic writings*. Indianapolis, IN: Hackett Publishing Company, p. 229, emphasis in original.

¹⁴⁵ Follett, M. P. *CE*, p. 11.

¹⁴⁶ *Ibid.*, p. 27; cf. Follett, M. P. (1982) Leader and expert. (pp. 212-234) in Fox and Urwick, eds. *DA*, p. 220.

¹⁴⁷ Follett, M. P. (1982) Leader and expert. (pp. 212-234) in Fox and Urwick, eds. *DA*, p. 221.

¹⁴⁸ Follett, M. P. *CE*, p. 27.

¹⁴⁹ *Ibid.*, p. 29, emphasis in original.

One of the basic concepts of modernity to fall to the new sciences is that we live in a determinate, linear world. If there is no ultimate, universal Truth for humans to discover, then the world is contingent, unfinished, and open to human intervention. Lacking universal guidelines, it is incumbent on us to pay attention to the particular. The conditions of the situation suggest directions for our collaborative problem solving and decision making.

Mary Parker Follett based much of her management theory on what she called “the law of the situation.” To her, the situation is a dynamic, evolving combination of responses—the circular response—where the actions of each participant affect the subsequent developments among them and with the environment.¹⁵⁰ The situation consists in multiple interdependent variables, each affecting the other and the whole as they develop and change. Understanding the reciprocal nature of the factors in the situation is made clearer if we adjust our descriptions away from nouns, like “thought, purpose [and] will,” and use verbs instead, like “thinking, purposing, willing.”¹⁵¹ Public administrators might do well to follow this example and begin to think less in terms of “administration” and “government,” and more in terms of “administering” and “governing.” The active sense of an ongoing process rather than a finished act is the essence of the situation.

Follett taught us to attend to the particular in our attempts to work with those whose work we come to supervise. Her advise to supervisors is threefold: first that supervisory instruction should arise from the particulars of the situation, not the positions, roles, or personalities of the actors; second, that all should recognize that each situation is unfolding and subject to change resulting from our actions; and finally, that instructions, and all communication, involves circular, not linear, behavior.¹⁵²

Dewey’s definition of inquiry as “the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the original situation into a unified whole” expands on Follett’s understanding of the situation.¹⁵³ The situation is not an object or event, or a set of objects or events, in isolation, but rather, such objects or events “in connection with a contextual whole.”¹⁵⁴ A situation can be viewed as an “episode [or field] of disequilibrium, instability, imbalance, disintegration, disturbance, dysfunction, [or] breakdown...in the ongoing activities of some given organism/environment system.”¹⁵⁵

¹⁵⁰ Ibid., Chapter 3.

¹⁵¹ Ibid., p. 57.

¹⁵² Follett, M. P. *Orders*, p. 37.

¹⁵³ Dewey, J. *LW 12*, p. 108; cf. *LW 4*, p. 183; *LW 12*, p. 121; and Alexander, T. M. (1995), p. 139.

¹⁵⁴ Dewey, J. *LW 12*, p. 72.

¹⁵⁵ Burke, T. (1994) *Dewey’s new logic: A reply to Russell*. Chicago, IL: University of Chicago Press, p. 22; cf. Lavine, T. Z. (1995) *America and the contestations of modernity: Bentley, Dewey, Rorty*. (pp. 37-47) in H. J. Saatkamp, Jr., ed., *Rorty and pragmatism: The philosopher responds to his critics*. Nashville, TN: Vanderbilt University Press, pp. 42-43.

The situation is confused, obscure, or conflicted, and engenders real doubt which leads us to set in motion an inquiry whose purpose is to ease that doubt.¹⁵⁶ Inquiry is not a means or method to find the Truth, it is the means or method to reduce doubt and to restore balance to a problematic situation, to let us get on with the task at hand. It is the means to the active reduction of uncertainty to such an extent that tentative next steps can be taken. Because of the existential nature of the transformation directed by inquiry, the point of transformation is temporary and knowledge is partial and particular.¹⁵⁷

Dewey was often criticized for failing to outline specific programs of action for dealing with what he saw as problems in education, philosophy, and political process. From the critics' point of view, Dewey's suggestions were "planless," that is, insufficiently detailed and linear for the disciplines involved to be able to follow. Dewey was an expert who didn't behave like any expert in their experience—he didn't tell us what to do, but rather suggested an attitude or a stance that would allow us to derive the action steps from the situation.

His view of the program is that it is "situational...[it] must satisfy social needs that are not being met, and social possibilities that are not being realized."¹⁵⁸ He recognized, as we should, that "no single formula signifies the same thing, in its consequences, or in practical meaning under different social conditions."¹⁵⁹ Programs must also be flexible and experimental, and offer steps that are partial and tentative.¹⁶⁰ Policy, according to Dewey, is an experiment whose outcomes form the basis for subsequent revision; it does not derive from "a planned society," so much as from a continuously planning society."¹⁶¹ Thus, democracy is a cooperative experiment whose stages are evolving situations.

As public servants, teachers, and citizens, we are constantly dealing with evolving situations. Both Dewey and Follett recognized the need for our collaboration, in all of those roles. We are called upon to resist the temptation to simply ignore the dynamics of these situations—to hope that someone else, someone better qualified, will decide how to resolve them. We will not settle, for once and for all, any problematic situation. In a contingent world, there is no "for once and for all," there is only the opening for action that is hesitant, tentative, and partial. But the possibility exists for us, by combining our talents and insights, to be effective agents of change and powerful actors in the play we are helping to create.

¹⁵⁶ Dewey, J. *LW 12*, pp. 109-110.

¹⁵⁷ Dewey, J. *LW 12*, p. 121; cf. Gouinlock, T. (1995) What is the legacy of instrumentalism? Rorty's interpretation of Dewey. (pp. 72-90) in H. J. Saatkamp, Jr., ed., *Rorty and pragmatism*, p. 78.

¹⁵⁸ Campbell, J. (1995), p. 207.

¹⁵⁹ Dewey, J. *LW 7*, p. 336.

¹⁶⁰ Dewey, J. *LW 9*, p. 67.

¹⁶¹ Dewey, J. *LW 13*, p. 321, emphasis in original; cf. *LW 8*, p. 70.

The Agency Lesson

Both Follett and Dewey argued that the world is contingent—that experience must be the basis for knowing—and that experience is never merely passive. Dewey saw experience as “primarily a process of undergoing; a process of standing something; of suffering and passion, of affection, in the literal sense of these words.”¹⁶² But, he saw people as more than mere “receptors” of experience—they are “agents...trying experiments...concerned with undergoing in a way which may influence what is still to happen.”¹⁶³

The creative intelligence of humans developed in knowing and experiencing in this active way improves their ability to achieve some level of control over the contingencies of life. Pragmatic thinking is thinking toward future consequences rather than back toward the premises of the past, and choosing among potential consequences when acting in the present. Where both empiricist and idealist philosophies had concentrated on a retrospective understanding of experience, Dewey “lauds anticipation and projection as distinctive features of human doings and undergoings...[and] highlights the future, the forward-looking character of human experience.”¹⁶⁴

The world we experience is real, but not fixed. It is “a world in need of transformation in order to render it more coherent and more secure. Knowing an experienced world is instrumental to rearranging it and giving it a form that is more useful to our purposes. But knowing in this sense is not something done apart from the world: it takes place experimentally inside experienced situations.”¹⁶⁵ Inquiry does not give rise to general or universal answers or solutions—it is “specific to a particular situation...a continuing process...never completely settled.”¹⁶⁶ And, the knowing that arises from inquiry cannot be separated from the “practice that gives rise to it in each particular situation.”¹⁶⁷

Critical intelligence applied to social problems in collective inquiry allows human actors to bring about change. The application of judgment, especially “appreciative judgment,” yields policy outcomes that reflect both facts and values.¹⁶⁸ Vickers’s theory of appreciative judgment parallels Dewey’s contention that value judgments cannot be separated from facts in collective decision making. Pragmatism, “precisely because it is concerned with the consequences of critical and reflective activity...cannot assume a

¹⁶² Dewey, J. (1917) The need for a recovery of philosophy. (pp. 58-97) in J. J. McDermott, ed. (1981) *The philosophy of John Dewey*. Chicago, IL: University of Chicago Press, p. 63.

¹⁶³ Ibid.

¹⁶⁴ West, C. (1989) *The American evasion of philosophy: A genealogy of pragmatism*. Madison, WI: The University of Wisconsin Press, p. 90.

¹⁶⁵ Hickman, L. A. (1990), p. 37, emphasis added.

¹⁶⁶ Ibid., p. 38.

¹⁶⁷ Ibid.

¹⁶⁸ Vickers, G. (1995) *The art of judgment: A study of policy making*. Thousand Oaks, CA: Sage, p. 86ff.

neutral philosophical stance.”¹⁶⁹ It dissolves all such dualisms—fact/value, policy/administration, self/other, public/private—seeing instead a continuum of experiences.

All inquiry involves evaluation—social inquiry even more than scientific inquiry. As Campbell explains, “social problems are fundamentally more complex...[they] are more deeply rooted in history...[and] social inquiry ‘lags behind’ or develops more slowly than other branches of inquiry.”¹⁷⁰ For Dewey, “all scientific inquiries, regardless of their field of focus, are natural, situational, grounded in problems, integrations of theory and practice, and evaluative...[t]he integration of particular, non-expert, experience, fostered by the establishment of interaction and discussion, enables the community to better use the unique insights of its individuals who are attempting to fill the role of ‘moral prophet’.”¹⁷¹

As agents we are responsible to each other along several dimensions. We are responsible for our evaluations—to neither be too quick to judge nor unwilling to evaluate the consequences of our actions. We are responsible for taking an active part in the process of inquiry and not withholding the lessons of our experience. We are responsible for developing the capacities of each other so that all can contribute. We are responsible not only to each other in the present, but to future generations, for the decisions we make collectively. The comfort found in this covenant derives from the realization that none of us is alone or isolated, and that we can learn from our mistakes and correct them since nothing we write together cannot be amended.

The Science and Philosophy Lesson

One might conclude from their insights about the toll the modern project takes on our humanity that Follett and Dewey would be critics of science as it was understood in their time. This, however, was far from true. What they both opposed, explicitly or implicitly, was not science—both evidenced a great respect for science—but rather the reconfiguration of science as a quest for certainty in an uncertain world. It was not science’s methods nor its probing, experimental attitude toward the world, but philosophy’s misapplication of science’s ontological foundationalism and mechanical metaphors to social phenomena.

Follett’s *The New State* was, by her own assessment, a volume presenting a new social psychology, grounded principally in William James’s pragmatic understanding of the

¹⁶⁹ Macke, F. J. (1995) Pragmatism reconsidered: John Dewey and Michel Foucault and the consequences of inquiry. (pp. 155-176) in L. Langsdorf and A. R. Smith, eds., *Recovering pragmatism’s voice: The classical tradition, Rorty, and the philosophy of communication*. Albany, NY: The State University of New York Press, p.157.

¹⁷⁰ Campbell, J. (1995), pp. 195-196.

¹⁷¹ *Ibid.*, p. 199; cf. Dewey, J. *LW* 7, p. 343.

complexity of experiences that make up the individual.¹⁷² She based much of her later theorizing about experience, relationship, and the circular response on her appreciation of German gestalt psychology, or the “doctrine of wholes, as is clear in her *Creative Experience*.¹⁷³ In the interval between these two books, she moved a step away from her earlier, more idealist philosophical stance, toward one more in tune with pragmatism. She argued that the study of institutions is insufficient to gain understanding of political and social life—that, in order to get a handle on human behavior, objective studies consisting of “empirical studies of human relations and social situations based on both participant observation and experimentation” are needed.¹⁷⁴ Social science was thin with regard to methods, relying as it did in large part on argument rather than science.¹⁷⁵

For Dewey, the process of emancipation from his idealist roots was a long one. His *Reconstruction in Philosophy*, is one of his earliest efforts at the task of reframing philosophy as a tool for ordinary life.¹⁷⁶ In order to accomplish this, it was necessary to overcome an ontological perspective of determinism, an epistemological perspective of absolute, invariant, and universal truth, and the rising preoccupation of philosophy with logical positivism. His attack on these problems is a consistent theme in his work—all of his work, regardless of principal topic of each essay or text. The obsession of philosophy with certainty—the belief that certainty is achievable—has led to other misunderstandings of human and social nature. The dismissal of experience as a valid source of knowing and the treatment of knowledge as static and final have provided impossible and impractical epistemological standards. These have led philosophy into a sterile intellectual desert where it can no longer be useful in sensemaking in the plane of ordinary life.

Dewey’s ontological position was that the universe is open or incomplete. Ours is a contingent world, and doubt leads us to attempt to reduce uncertainty. Science, when an inadequate philosophy is stripped away, thrives on doubt.¹⁷⁷ The scientific inquirer is characterized by a:

willingness to hold belief in suspense, ability to doubt until evidence is obtained; willingness to go where evidence points instead of putting first a personally preferred conclusion; ability to hold ideas in solution and use them as hypotheses to be tested instead of dogmas to be asserted; and (possibly the most distinctive of all) enjoyment of new fields for inquiry and of new problems.¹⁷⁸

¹⁷² Follett, M. P. *NS*, p. 20.

¹⁷³ Follett, M. P. *CE*, p. 91.

¹⁷⁴ Fry, B. R. (1989), p. 100; cf. Follett, M. P. *CE*, pp. *xi-xii*.

¹⁷⁵ Follett, M. P. *CE*, p. x.

¹⁷⁶ Dewey, J. *MW 12*.

¹⁷⁷ Dewey, J. *LW 4*, p. 182.

¹⁷⁸ Dewey, J. *LW 13*, p. 166.

It was this attitude that Dewey wanted to see operating in the collaborative inquiry of democratic practice. He felt that this “scientific attitude and method are at bottom but the method of free and effective intelligence.”¹⁷⁹ Unfortunately, the uses to which science and the scientific method were put were often antithetical to such democratic practices.¹⁸⁰ Dewey learned, through his experiences connected with World War I, that the “technical resources of the...scientific method” could be captured first by industry, where it is channeled into private profit, and then by the nation-state and its machinery of war.¹⁸¹ He wanted those resources channeled into education and participation in democratic decision making.

Both, then, oppose the relationship between science, technology, and government that is technocracy. Both reject the notion of the superiority of thought to experience. Both advocate the application of intelligence and method to social problems, so long as this was done communally and inclusively. Both encourage us to break the habit of thinking of science as inaccessible to us as ordinary persons, and as intractably connected with and zealously guarded by expert specialists and government. Our problems arise not because we have such an evolving and fruitful technology, but from what we have done with it.¹⁸² In separating “scientific” facts from “emotional or intuitive” values, we have allowed science and technology to be put into the service of unexamined ends, where we need to apply critical intelligence to, and deliberate together about, both ends and means. This dichotomy will only be dissolved when “valuation-phenomena are seen to have their immediate source in biological modes of behavior and to owe their concrete content to the influence of cultural conditions.”¹⁸³

The Relationship Lesson

Follett and Dewey both recognized as fact that the human being is a social creation—that it is in relationship with others that our individuality is refined and nurtured—that it is not “originally given but is created under the influences of associated life.”¹⁸⁴ They both also saw that we act within and as a part of a dynamic social environment. For Follett, in addition to the developing individual (a whole in the making) and the group (another whole in the making), we need to study the evolving environment (yet another whole in

¹⁷⁹ Ibid., p. 279.

¹⁸⁰ Campbell, J. (1995), p. 105.

¹⁸¹ Ibid, p. 106ff. Dewey supported America’s entry into World War I, much to the disgust of most of his friends and colleagues, on a misguided belief that freedom and democracy could be fostered through destruction and death. He learned from this experience. As America teetered on the brink of war again in 1941, Dewey steadfastly argued against involvement in another European war, but the question became moot after Pearl Harbor. See, Westbrook, R. B. (1991), especially Chapter 7, and Ryan, A. (1995).

¹⁸² Campbell, J. (1995), p. 107; cf. Dewey, J. *LW 5*, p. 87; *LW 6*, p. 58.

¹⁸³ Dewey, J. *LW 13*, p. 249.

¹⁸⁴ Dewey, J. *MW 12*, p. 193.

the making). It is the “interknitting” of these evolving wholes that “creates the total situation—also [in the] making.”¹⁸⁵

Whether we intend it or not, Dewey says, “every act brings the agent who performs it into association with others.”¹⁸⁶ Because of our inherent connection with and dependence upon others, we cannot engage in our own activities “without taking the activities of others into account.”¹⁸⁷ We participate with each other in building society, as it builds each of us, through common practices and shared traditions, mediated by such cultural artifacts as language.¹⁸⁸ In fact, culture has such an impact on our developing minds that we have been able to accept as “natural” such institutions as slavery, capitalism, and war.¹⁸⁹

Follett addressed the nature of relationship in her development of the concept of circular response, or as she defines it, “the relation between whole and parts.”¹⁹⁰ We need to study, she said, the evolving whole—the “whole and parts in their active and continuous relation to each other.”¹⁹¹ The situation is never a still photograph, it is “a total activity in which the activity of the individual and the activity of the environment interweave.”¹⁹² The human actor is not merely the sum of the many functions she performs—for example: woman plus wife plus mother plus teacher plus church member, etc.—she is rather the “interplay of many functions [that] must go into [her] citizenship.”¹⁹³ The integrated individual “move[s]...within a larger life than [he is] directly cognizant of...He expresses, brings into manifestation, powers which are the powers of the universe, and thereby those forces which he is himself helping to create, those which exist in and by and through him, are ever more ready to respond, and so Life expands and deepens; fulfils [sic] and at the same moment makes possible larger fulfilment [sic].”¹⁹⁴

Another aspect of relationship that Follett addresses is that most difficult one of how the exercise of power fits in with democratic process. Political scientists, she said, “transfer

¹⁸⁵ Follett, M. P. *CE*, p. 102.

¹⁸⁶ Dewey, J. *MW 5*, p. 404.

¹⁸⁷ Dewey, J. *MW 9*, p. 16.

¹⁸⁸ Dewey, J. *LW 12*, pp. 48-65.

¹⁸⁹ Dewey, J. *MW 14*, pp. 76-87.

¹⁹⁰ Follett, M. P. *CE*, p. 99; cf. *CE*, Chapter 6. Her work reflects that of Dewey on the reflex arc in psychology. Here, in place of the concept of a linear stimulus-response system, he argues that “sensory stimulus, central connections, and motor responses shall be viewed, not as separate and complete entities in themselves, but as divisions of labor, functioning factors, within the single concrete whole, now designated as the reflex arc.” See, Dewey, J. (1896) *The reflex arc concept in psychology*. (pp. 136-148) in J. J. McDermott, ed. (1981) *The philosophy of John Dewey*. Chicago, IL: University of Chicago Press. P. 137.

¹⁹¹ Follett, M. P. *CE*, p. 102.

¹⁹² *Ibid.*, p. 106.

¹⁹³ *Ibid.*, p. 112.

¹⁹⁴ *Ibid.*, p. 116.

power, divide power, confer power, but do not analyze power.”¹⁹⁵ Most democratic theorists assume that power is bad; at least, the exercise of power is hard to integrate with other, gentler aspects of democracy. Follett asks questions that require our reflection if democratic practice can have effect in the world:

Is power force, influence, leadership, manipulation, managing, is it self-control, self-discipline, is it capacity, is it self-expression? Are these different species under the same genus or are there generic differences among them? What is the relation of the idea of power to the biological notion of survival? What is the relation of the idea of power to the political and legal notion of sovereignty?...Is success power? Is ‘will to power’ the hasty snatching of end results without paying the price of real influence? Is power a sign of intellectual bankruptcy, is it a short-view solution? Is power one unintegrated difference usurping the claim of all the differences?¹⁹⁶

The origin of power is the “self-generating, self-sufficing, all-including activity...of experience.”¹⁹⁷ The power to be an effective actor in the world is the product of the circular response, and it is created consciously as we come to “have power over ourselves together.”¹⁹⁸ In such a climate, the power developed is “power with,” not “power over.”¹⁹⁹ All genuine power is “power with,” and this is the kind of power that grows out of the democratic group process.²⁰⁰

Because having power is necessary for life, our democratic process cannot abandon the concept, but “we need a new orientation toward it.”²⁰¹ No longer ought there be any legitimacy ascribed to the use of power by the strong to dominate those who are weaker. The more each is able to use power for self-control, the more “capable [each is] of joining fruitfully with [others] and with [others] developing power in the new unit thus formed.”²⁰² The joint project of power is a slow process, involving training and practice—one that is “concerned with neither granting power nor grabbing power but with evolving power.”²⁰³

Power, like love, is not diminished when it is shared. “By pooling power we are not giving it up...the power produced by relationship is a qualitative, not a quantitative

¹⁹⁵ Ibid., p. 179.

¹⁹⁶ Ibid., pp. 180-181.

¹⁹⁷ Ibid., p. 185.

¹⁹⁸ Ibid., p. 186.

¹⁹⁹ Ibid., p. 187.

²⁰⁰ Ibid.

²⁰¹ Ibid., p. 189.

²⁰² Ibid., pp. 189-190.

²⁰³ Ibid., p. 188.

thing.”²⁰⁴ If we think of power as an activity, of the experiences we share producing both “social ends and power,” then we can see that power constitutes freedom.²⁰⁵ As Follett sums it up, “to express the personality I am creating, to live the authority I am creating, is to be free.”²⁰⁶ And when social needs and standards and the power to enable effective action evolve together in society, authentic democracy becomes possible.

The Ethics Lesson

The study of ethics is that sub-discipline of philosophy “dealing with what is good and bad and with moral duty and obligation.”²⁰⁷ Considering that discriminations between the good and bad depend upon having some standard upon which to judge, and considering Dewey’s denial of ultimate and universal standards, his understanding of ethics is somewhat out of the ordinary.²⁰⁸ Only a brief synopsis of Dewey’s thinking is possible here, one that includes: a focus on the future; the connection of means and ends; and the importance of reflection and growth.

Dewey decried the division often drawn between moral questions and other human interests and activities, especially economic activities.²⁰⁹ There exists “no fixed line between the morally indifferent and the morally significant,” he argues, or between “moral goods, like the virtues, and natural goods like health economic security, art, science, and the like.”²¹⁰ By allotting only selected issues to moral deliberation and reflection, we end up with a moral system that is “remote and empty,” and of little real capacity to either “inspire the individual or to effect the necessary social reconstruction.”²¹¹

Absent universal standards, the moral environment must evolve along with the social environment of human activities; we are required, in face of uncertainty, to reflect upon the possible consequences of our actions. However, in deciding what action to take, “our moral duty remains attempting to embody intelligence in action in order to make the world better.”²¹² The past may be a guide to our decision making process, but our moral stance is derived from reflection on future consequences in the particular situation.

²⁰⁴ Ibid., p. 191.

²⁰⁵ Ibid, p. 192ff.

²⁰⁶ Ibid., p. 193.

²⁰⁷ *Merriam-Webster’s Collegiate Dictionary*. 10th ed. Springfield, MA: Merriam-Webster, Incorporated, p. 398.

²⁰⁸ In 1908, John Dewey wrote a standard text on this subject with J. H. Tufts (*MW 5*), and the two authors issued a revised, and almost completely rewritten edition of the *Ethics* in 1932 (*LW 7*).

²⁰⁹ Dewey, J. *LW 15*, pp. 232-233.

²¹⁰ Dewey, J. *MW 5*, p. 195, emphasis in original; and *MW 12*, p. 178.

²¹¹ Dewey, J. *LW 4*, p. 225; and Campbell, J. (1995), p. 116.

²¹² Campbell, J. (1995), p. 117.

In short, Dewey saw moral issues as susceptible to the method of collaborative inquiry. We should, he argues, adopt a hypothetical stance toward moral issues—no longer would moral rules be constrained by tradition or pressures from the past. Moral rules should be made in an atmosphere of critical reflection in response to the present situation and an intelligent estimate of the possible consequences.

If a hypothetical stance is taken, and moral issues are sorted out through inquiry, moral diversity will result. Such a climate of moral diversity requires tolerance and an unusual amount of openness to the other.²¹³ “A reflective morality must assume that variation will occur, and that some of those who cause the variations will challenge the most cherished values of the society, occasionally for the better.”²¹⁴ Moral codes can atrophy and moral actions can become habits that no longer serve to better the world. Moral disagreement is the basis for deliberation, and deliberation permits a vital democracy to develop. Morality, in this view, is “a continuing process not a fixed achievement.”²¹⁵

To reflect the evolving nature of moral goods, it is necessary to redefine the relationship between means and ends. No longer can these be arbitrarily separated—they are intractably intertwined. Ends are not final, but partial and temporary. We direct action based on ends-in-view, which could be defined as the anticipated consequences of the means we employ in our activities. Means and their consequences “constitute a single undivided situation.”²¹⁶ Social goals and the means to achieve them become blurred in our practices. As Harmon notes:

First,...a means, including the factual knowledge relevant to its exercise, has an inescapably moral component because it would not exist except for the presence of ends or values in whose service it is employed. Second, and conversely, ends served by practices are transformed by the practices themselves. And because practice is necessarily a social activity, the ends in whose service a particular practice is engaged are in themselves social products, which therefore can be judged only in terms of the social context within which they are produced.²¹⁷

By what standard can we evaluate the reflective morality advocated by Dewey? Is it mere moral relativism, as many critics charge, or can we find in his experience-based, evolving, situational process a basis for deciding what is good? Dewey himself chose

²¹³ Ibid., p. 119; cf. Dewey, J. *LW* 7, p. 231.

²¹⁴ Campbell, J. (1995), p. 119.

²¹⁵ Dewey, J. *MW* 14, p. 194.

²¹⁶ Dewey, J. *LW* 1, p. 297.

²¹⁷ Harmon, M. M. (1995), p. 195. Cf. MacIntyre, A. (1984) *After virtue: A study in moral theory*. 2nd ed. Notre Dame, IN: The University of Notre Dame Press. It is interesting to note that both Dewey and MacIntyre, upon whose work Harmon elaborates here, took as a starting point for their moral theory, Aristotelian virtue ethics.

personal growth, the purpose of human life, as the moral criterion.²¹⁸ “The end is no longer a terminus or limit to be reached. It is the active process of transforming the existent situation. Not perfection as a final goal, but the ever-enduring process of perfecting, maturing, refining is the aim in living.”²¹⁹ Growth is “a continuous reconstructive process of self-realization.”²²⁰ Growth also reflects a sharing of experiences and enrichment of meaning. Such growth has infinite potential:

We are not caught in a circle; we traverse a spiral in which social customs generate some consciousness of interdependencies, and this consciousness is embodied in acts which in improving the environment generate new perceptions of social ties, and so on forever. The relationships, the interactions are forever there as fact, but they acquire meaning only in the desires, judgments, and purposes they awaken.²²¹

Follett would have found this notion similar to the ethical dimension of the circular response. She describes the “ethical unit” as a “true whole”—not the sum of minor wishes and desires, “but an integrating desire which is continuously interweaving with [our] separate desires.”²²² The ethical unit derives its character of wholeness from its “interweaving [of itself] with the parts as well as by an interweaving of the parts.”²²³ The reciprocity and tolerance characterizing the nature of reflective morality inheres in this notion of wholeness, and democratic practice, as both Dewey and Follett conceived of it, is infused with an ethical standard in keeping with its nature.

Dewey saw democracy as an ethical construct, and “upon its ethical significance is based its significance as governmental. Democracy is a form of government only because it is a form of moral and spiritual association.”²²⁴ Democracy’s ethical significance is grounded in the concept of equality defined as the freedom generated by society for individuals to develop fully the potential each has for participation in the common life of all.²²⁵

Because of its ethical nature, the spirit and practice of democracy must infuse every aspect of experience and offers the best chance we have of making sense of our contingent world. In fact, the contingent nature of reality demands an approach to shared living that parallels Dewey’s idea of democracy. Having denied the applicability of eternal truths and inherent and universal values, Dewey saw the world as “a universe in which there is real uncertainty and contingency, a world which is not all in, and never will

²¹⁸ Campbell, J. (1995), p. 134.

²¹⁹ Dewey, J. *MW 12*, p. 181; cf. *MW 9*, p. 55.

²²⁰ Campbell, J. (1995), p. 136.

²²¹ Dewey, J. *MW 14*, p. 225; cf. *LW 3*, p. 104.

²²² Follett, M. P. *CE*, p. 112.

²²³ *Ibid.*, p. 113, emphasis in original.

²²⁴ Dewey, J. (1888) The ethics of democracy. (pp. 59-65) in D. Morris and I. Shapiro, eds. (1993) *John Dewey: The Political Writings*. Indianapolis, IN: Hackett Publishing Company, p. 59, emphasis added.

²²⁵ *Ibid.*, p. 63; cf. Dewey, J. *MW 5*, p. 394; *MW 9*, p. 270; and *LW 11*, p. 25.

be, a world which in some respects is incomplete and in the making, and which in these respects may be made this way or that according as men judge, prize, love, and labor.”²²⁶ Because we have choice, we have responsibility for consequences, and our actions have moral import. By deliberating on moral issues together, even those where we fundamentally disagree, we can establish a basis for evaluating the consequences of our conjoint activities.

Applying These Lessons: Enacting a “Retro” Public Administration?²²⁷

Over the past three decades the field of public administration has been under siege. As public trust in government eroded—a process exacerbated by Vietnam, Watergate, the “failure” of the Great Society social welfare programs to “solve” the problem of poverty, and external economic pressures—everyone sought a scapegoat. The most visible candidate for that role was the federal bureaucracy. Bureaucrat bashing became a standard political response; a part of every campaign for elected federal office was the theme of solving the “problem” of government by reducing the size or constraining the power of public administrators. Many of the reform initiatives since the 1970s have been sold on the promise that such reduction and constraint would result.

The direction these reforms have taken has been to further rationalize government—to increase its basic identification with the premises of the modern project. A case in point is today’s reinvention movement. Assuming efficiency to be the principal, if not only, goal of government, operations have been streamlined in a number of ways. Assuming that the “problem” consists of too much government interference with the private economic market, the distribution of public goods has been further outsourced to private enterprises. Assuming the “problem” to be too much concentration or centralization of policy at the federal level, many policy areas once considered appropriate for that level for a variety of reasons have been delegated to the state and local levels, whether these levels have either the political will or the economic clout to handle the responsibility. The illusion of reform that reinvention creates masks a failure on all of our parts to question assumptions and deliberate about ends.

Through all of this public administration has been placed in the position of either collaborating with its accusers or redefining its role. Public administration has suffered both a crisis of identity and a crisis of legitimacy. As Terry (1997) argues, all of the various roles assigned to public administration—villain, hero, or innocent victim—are

²²⁶ Dewey, J. (1919) Philosophy and democracy. (pp. 38-47) in D. Morris and I. Shapiro, eds. (1993) *John Dewey: The Political Writings*. Indianapolis, IN: Hackett Publishing Company. p. 44.

²²⁷ The term “retro” is applied here in the same sense that it is applied to such objects of the past as black dial telephones and lava lamps. These are objects or artifacts from the past that have been reintroduced into popularity—they are old, but old and “cool.”

problematic.²²⁸ By assuming any of these roles, public administration denies the validity of the purpose and vocation of practitioners, further widening the gap between the academy and the professional practice.

Dismayed by the trend in the field to cast the bureaucrat in the role of villain and join in the witch hunt, the Blacksburg Refounding Project was initiated. The first round was fired through a jointly-authored position paper entitled, “The Public Administration and the Governance Process: Shifting the American Political Dialogue,” which was informally presented at the spring, 1983, conference of the American Society for Public Administration.²²⁹ This paper, subsequently dubbed “The Blacksburg Manifesto,” created controversy and stirred up the field. If it served no other purpose, it called into question the retreat of public administration academics into the ranks of the critics.

The ideas contained in the “Manifesto” were then expanded and published in 1990 as *Refounding Public Administration*. For me, then a practitioner in county government and exhausted from the effort it took to maintain optimism in one of public management’s impossible jobs, it seemed like a breath of fresh air—as if someone out there were actually on my side. As a student in an MPA program, I was excited by the potential that book held for the field. Finally, I remember thinking, it would be possible to get past the “how” questions that seemed to dominate our thinking, and get to the “what” and “why” questions we seemed to avoid at all cost. I have subsequently learned that these questions are interrelated, and all need to be addressed. However, so long as we reduced the complexity of governance to instrumental questions and assigned these the designation “urgent,” it seemed to me, the important questions—the questions related to administration and the democratic spirit—would continue to be ignored or assumed to have already been answered for once and for all time.

Since 1990, the discourse invited by the Blacksburg group has continued. Questions have been raised about legitimacy, about roles and identities, and about the appropriateness of modern bureaucracy as a means of government in a clearly postmodern era. The views of the original Blacksburg authors have evolved—grown beyond their earlier construction of legitimacy—and new voices within the Blacksburg community have reframed the problem from a democratic perspective.²³⁰ Postmodernists and critical theorists and “new public management” scholars add to the debate about governance, but we still have trouble thinking about public administration outside the lines imposed by its modern roots.

²²⁸ Terry, L. D. (1997) Public administration and the theater metaphor: The public administrator as villain, hero, and innocent victim. *Public Administration Review*, 57 (1), pp. 53-61. These roles are not merely assigned by those outside the field—some are internally adopted.

²²⁹ Wamsley, G. L., R. N. Bacher, C. T. Goodsell, P. S. Kronenberg, C. M. Stivers, O. F. White, and J. F. Wolf (1990) *Refounding public administration*. Newbury Park, CA: Sage, pp. 6-18.

²³⁰ See, Wamsley, G. L. and J. F. Wolf, eds. (1996) *Refounding democratic public administration: Modern paradoxes, postmodern challenges*. Thousand Oaks, CA: Sage.

The “retro” public administration I am arguing for encourages us to ignore the lines and even to color outside them, if that is where the process of democratic governance leads us. The new sciences lend the cachet of Science to legitimate such an endeavor, and rescuing the administrative and democratic thought of Dewey and Follett provides us, as practitioners and academics, some starting points for activity that may create a new and more appropriate role for public administration—that of “friend.”²³¹

The activities that follow are only some of those that are possible. They aren’t a prescription or a syllabus or a plan, only suggestions for realizing potential that has been left untapped. Any or some or all of these can be taken up by public administrators, and if they are, they might, in the long run, lead to other activities, and so the process unfolds. The heart of democracy is collaborative human activity; public administration, as a friend in support of democracy, honestly advises human activity, nourishes human activity, creates opportunities for human activity, and engages in helping to create a harmony, a balance, in human endeavor. If government, in the guise of public administration, were perceived as a friend by citizens, and could resist the temptation of sliding back into the role of “expert” or “boss,” imagine how the future might unfold.

Overcoming Newton’s Single Vision

Perhaps the most important contribution the new sciences make toward taking that leap in imagination is the connection of human consciousness not merely to the creation of symbolic representations of what is real but to the actualization of the real out of the potential. This is undoubtedly the most difficult of the premises of the new sciences for us to accept. Quantum theory, with its reliance on chance and probability, is the last place where one would expect to find an anthropocentric theory of the world. John von Neumann’s attribution of creative power to human consciousness in his ontological explanation of quantum theory gives credibility to the notion that visualization of a desired future can actually bring that state into existence.²³² As active agents of creation, human beings “are not the center, as in the old Western worldview, but we are at the center, ontologically part and parcel of everything around us.”²³³

There are several activities in which we can engage to prepare us for the task of overcoming Newton’s single vision. The first of these is reading and learning as much as we can about the new sciences. All but the most technical texts on quantum theory and chaos theory are accessible to most readers, but the information they contain doesn’t

²³¹ Although it is acknowledged that the word “friend” is loaded with emotionally-charged meaning, in many ways the authentic relationship that is friendship is appropriate as a potential role for the public administrator, as will be made clear below.

²³² For a further amplification on the connection between consciousness and visualization, see Evans, K. G. (1997b).

²³³ Zohar, D. and I. Marshall (1994), p. 240.

come without a struggle—when we choose to read them, we need to persist even when our common sense is outraged. We need to persist even when the split between words and numbers gets to half and half. We need to have faith (at least, if you are like me) that the mathematicians know what they’re doing. We have to work at the concepts.

Another activity is something akin to meditation, or, at least, thinking consciously about the conceptual framework allowed by the new sciences and recognizing linkages and reciprocal relationships.²³⁴ Try to become “field conscious” in your thinking. Instead of focusing on an isolated event or object, widen your vision to include the context of which the event or object is a part. Map relationships in the field. Get a grasp on communication flow, direction, and intensity. “Becoming field conscious means you need to pay attention to the connections that link the personal, social, political, economic, legal, and technical factors that affect the leadership arena,” or the academic arena.²³⁵

Since public administrators most often work within living systems—organizations, neighborhoods, and communities—it is important to pay particular attention to the wholeness of those systems, especially with regard to the “dynamic processes that combine energy and information in reciprocal relationships.”²³⁶ Eventually, we need to go beyond visualizing discrete objects or entities entering into relationship with each other, and recognize that what we see as discrete objects or entities are themselves sets of relationships.²³⁷ Since all visible objects—people, trees, bricks, mountains, and so forth—are composed of subatomic entities, and these entities are unquestionably sets of relationships, “the boundaries separating the entities within our visual sensory world are illusory.”²³⁸ Mary Parker Follett, who didn’t have access to quantum theory, understood this instinctively—relationship between you and me is actually each of us relating to our relationship—to the space between us.

A third activity in aid of overcoming single vision is the cultivation of patience and hesitancy. Despite the amazing prowess of the human brain—its ability to make sense of tremendous amounts of data—the capacity we have to give conscious attention is limited. As a defense against information overload, the sensory data we receive is filtered through the unconscious. This filtering process involves the comparison of new data with old

²³⁴ The idea of meditation or contemplation is not only associated with Eastern metaphysics. It is a part, although a neglected part, of the Western heritage as well. Aristotle considered contemplation as a necessary component of the good life. See his *Nicomachean ethics*. (pp. 235-381) in M. L. Morgan, ed. (1992) *Classics of moral and political theory*. Indianapolis, IN: Hackett Publishing Company, pp. 374-375.

²³⁵ Blank, W. (1995) *The 9 natural laws of leadership*. New York: Amacom, p. 65.

²³⁶ Kafatos, M. and R. Nadeau (1990) *The conscious universe: Part and whole in modern physical theory*. New York: Springer-Verlag, p. 185.

²³⁷ diZerega, G. (1991) Integrating quantum theory with post-modern political thought and action: The priority of relationships over objects. (pp. 65-97) in T. L. Becker, ed. *Quantum politics: Applying quantum theory to political phenomena*. Westport, CT: Praeger, p. 69.

²³⁸ Ibid.

familiar patterns. That data which is incompatible with the systems of memory, belief, and knowledge of the world is generally discarded as irrelevant before conscious examination.²³⁹ As a rule, the filters we have are formed from our early experience—childhood experience that is customarily constructed in concrete rather than abstract terms. These filters predispose us to respond almost automatically to cues that reflect modernism with functionalist responses.²⁴⁰ If we hesitate before we act in this automatic way, we may give ourselves the time to reconsider the importance or relevance of discarded, non-modernist cues.

Reclaiming Dewey and Follett

To reclaim: to make available for human use; to regain possession of; to rescue from an undesirable state.²⁴¹

This activity allows us to make use of social and political thinking that was surely ahead of its time. As we have seen in the lessons above, Dewey and Follett still have a meaningful contribution to make to public administration. And, there are others whose work could be reexamined under the lens of the new science—other treasures in grandmother’s attic include the work of the traditionalists, of Waldo and Redford and Long, and the democratic thought and community organizing of the Populists. Only by reading the whole body of work does it become possible to see the continuity and evolution of thought contained therein. Selecting some parts to shore up one’s own position, while discarding or even discounting other parts, is not reclaiming.²⁴² A serious reexamination of these streams of thought entails a lot of reading made difficult by differences in language usage, but there are kernels of wisdom and coherent themes there to be reclaimed.

To reclaim something involves making it once again available to do its work. There is also a sense of rescuing something from the dustbin of obscurity, of restoring and refining something discarded before its usefulness is over or because its usefulness goes unrecognized. Additionally, there is a nuance in the verb of ‘claiming again’—of recalling something to its proper place or context. In all of these senses of the term, reclaiming these works from the past is useful if we are willing then to take the time to integrate them.

²³⁹ For a full description of this process, see Baars, B. J. (1997) *In the theater of consciousness: The workspace of the mind*. New York: Oxford University Press, especially Part II.

²⁴⁰ This is one possible explanation for the durability of the conventional wisdom of public administration. The forms and structures of the progressive era more closely match this predisposition to the concrete than would other kinds of relationships.

²⁴¹ *Merriam-Webster’s Collegiate Dictionary*, 10th ed. (1993) Springfield, MA: Merriam-Webster, Incorporated, p. 976.

²⁴² For instance, Richard Rorty has selected those parts of Dewey’s thought, especially the anti-foundationalism, to reinforce his postmodern pragmatism, but is contemptuous of Dewey’s metaphysics.

If we have developed the skill of field consciousness, then we can take the material we find and integrate it, both in terms of finding its internal consistency and in terms of its applicability for practice. Take as an example the biological ecosystem and Mary Parker Follett's group process. Both are characterized by self-organization. Each displays the tendency of systems near the edge of chaos to "not collapse into chaos so long as a relatively small number of procedural rules are followed either consciously or unconsciously."²⁴³ One category of such procedural rules is social conventions—the unexamined, often invisible activities in which we participate that "organize and simplify many instances of potential confusion or chaos" in our daily life.²⁴⁴ One social convention that comes to mind is the formation of a line at the bank when there are more customers than available tellers. In some cases, this convention acting out the principle "first come, first served" has been more formally adopted. However, it starts with an unspoken agreement among strangers on how to deal fairly in situations where demand exceeds supply.²⁴⁵

The group process, in many ways, incorporates the idea of the social convention arising from the situation. People relate because, in their relating, they become more than they were in isolation. The process itself expands their possibilities. The synergy of their relationship expands their efficacy in the world. When they cooperate and collaborate it becomes possible for them to be more, to do more, and to enjoy life more.

Self-organizing systems do not submit to direction from outside or planning in the traditional sense. They do, however, provide opportunities for leadership and influence. "Because they are polycentric, possessing many independent centers of action, self-organizing systems cannot pursue particular purposes. Neither ecosystems nor societies exist to do some particular task. Rather, they provide frameworks within which participants can pursue self-directed ends."²⁴⁶ The modern project of public administration has been conceptualized primarily in terms of the ability to achieve particular tasks and has been rigidly organized toward the completion of those tasks. We could reconceptualize it as a framework to enhance the opportunities of citizens to realize their life projects by providing the social space for their inquiry, and the information they need to help them assess risk and opportunity as they engage in inquiry.²⁴⁷ Purpose, then, does not direct the activity or process, it evolves from it.²⁴⁸

A friend, sensing that you are troubled and in need of help, does not simply burst upon you with directive advice. Instead, an authentic friend creates opportunities for you to

²⁴³ diZerega, G. (1991), p. 84.

²⁴⁴ Brown, D. W. (1995) *When strangers cooperate: Using social conventions to govern ourselves*. New York: The Free Press, p. 23.

²⁴⁵ *Ibid.*, pp. 23-25.

²⁴⁶ diZerega, G. (1991), p. 85.

²⁴⁷ Harmon, M. M. (1995), pp. 193-198.

²⁴⁸ Follett, M. P. *CE*, p. 83.

open up, and, if you don't confide your troubles, at least the friend will have shown support and sympathy. In the same way, a public administrator can create space and opportunity for citizens to seek help and/or receive a sense of support and sympathy as they face challenges. An administrator, troubled by a lack of communication among her employees, will not have good results by formally insisting that these individuals open up to each other. She can, however, create a common space for ordinary conversation at the cost of a table and some chairs and a coffee machine placed strategically near the department mail boxes.²⁴⁹ The outcome is not guaranteed, but out of such intentionally-created intersections, many spontaneous, self-organizing interactions are made possible.

Starting Small: Enabling Self-Governing Citizens

When we look around and examine the condition of democracy in America today, many of us are overwhelmed by the complexity of the system and seeming intractability of its problems. We want to believe in America's democratic aspirations, but are daily confronted with what appear to be signs that we are moving further from those aspirations. Voter apathy and loss of faith in government are among those signs. Many of us have retreated into the private sphere where we concentrate on individual rights and success, abandoning the tangle of public life to the "experts." Public administration has traditionally been associated with expertise, and, therefore, has come to be the most visible target for blame when public problems go unsolved.

Those of us as citizens and public administrators who have not retreated from the complexity are frustrated in our attempts to take effective action. We make many mistakes that are understandable in light of our modern single vision. We try to address the whole through "tinkering with" and "patching" the parts in the name of reform. True reform, according to Smith, "is not just about fixing things—applying the political equivalent of duct tape—but also about addressing problems in new ways."²⁵⁰ First, we need to look at the mistakes we have made in our attempts at reform. Then we can move to some new ways of understanding the system, especially in terms of its dynamic relationships—seeing the parts in terms of the whole.

Our most common mistake is to confuse our surface technocracy—the system—with America itself.²⁵¹ Those who control the political and economic system benefit from its continued operation just as it is; it is unlikely that citizens can look to those power elites, and information elites in the media, for help in bringing about change. For them, the system works quite well. For the citizen, just fixing the system is inadequate;

²⁴⁹ Brown, D. W. (1995), p. 62.

²⁵⁰ Smith, S. (1997) How not to repair America. *Utne Reader*, September-October, 1997, pp. 65-68, p. 68.

²⁵¹ The mistakes and suggestions that follow are derived from Smith, S. (1997), which itself is excerpted from the author's book, *Sam Smith's great American repair manual*. (New York: W. W. Norton & Company, Inc., 1997).

transforming the system from the bottom up is necessary. It is possible to beat the system; we Americans “belong to a long tradition of redefinition, revival, rebellion, and rediscovery” that has, in the past, brought an end to slavery, regulated working conditions, and expanded suffrage.²⁵²

Another mistake lies in thinking that more rules always provide an answer. Regulation, like prescription medication, can be life-saving or deadly, depending on the situation.²⁵³ We are often paralyzed by a fear of making mistakes, and thus, do nothing. The problems we are facing can be viewed as opportunities, if we accept the possibility of our very human missteps and can be open to learning from them. Also, we need to abandon the notion that more of the same remedy will yield different results. The successive waves of administrative reform we have experienced demonstrate that more applications of the same underlying reform principles is not necessarily the way to good government.

What can we learn from these mistakes? First, we can learn to start with small systems—like the family and the neighborhood. If we do this, we have a better chance of understanding the relationships that define the system, and can provide opportunities for citizens to self-organize and participate in their own liberation. Starting small lets us “provide a setting in which it is comfortable for others to offer new ideas.”²⁵⁴ Patience and persistence are required when fighting city hall. As attempts to transform the system fail—and they will—we need to keep trying, learning from our mistakes and using new tactics in each attempt. We need to gather our own facts, use our own experts, and if we don’t have our own experts, we may need to become our own experts.²⁵⁵

“Citizen groups and initiatives that engage in such work revive conceptions of politics as the activity of equal citizens, engaged in argument, debate, dialogue, conflict, and common work.”²⁵⁶ Practicing this activity prepares us to cope with and adapt to a politics suitable for a “heterogeneous and technological society, through which individual citizens and small communities come to understand the interconnections of their lives and aspirations with those of others unlike themselves.”²⁵⁷ From that realization, there develops a “consciousness that a measure of mutual responsibility for ‘the commonwealth’ is possible and even necessary.”²⁵⁸ Most of all, we need to remember that democracy depends on “communities and citizens acting on behalf of their own self-

²⁵² Smith, S. (1997), p. 66.

²⁵³ Ibid.

²⁵⁴ Ibid., p. 68.

²⁵⁵ Ibid.

²⁵⁶ Boyte, H. C. (1989) *Commonwealth: A return to citizen politics*. New York: The Free Press, p. 13, emphasis added.

²⁵⁷ Ibid.

²⁵⁸ Ibid.

interest in a [such a] constructive and harmonious fashion,” and that, at heart and in spirit, America is still an experiment in democracy that isn’t yet finished.²⁵⁹

Building Healthy Relationships

During the early months of 1998, the nation has been shocked by several tragic shooting incidents in schools. In the most recent of these, in Oregon, a fifteen-year old is charged with opening fire on his classmates, leaving two with fatal injuries and more than two dozen others with injuries ranging from minor to serious, before being wrestled to the ground and disarmed. Prior to coming into the school, the boy had apparently killed his parents and rigged his home with explosive devices. Dysfunctional families are not only to be found in distressed inner city neighborhoods, although those of us lucky enough not to live in such neighborhoods would like to believe so.

The immediate response of the attentive public has been to reopen the debate on gun control—a debate that never seems to lead to any reduction in the dangerous level of personal arms in the country. Other experts offer opinions on what’s wrong with our schools, our homes, our communities. Mostly, we shake our heads and sadly and quietly wonder what’s wrong with our kids these days.

If we want to start small and build healthy relationships, the family is a good place to begin. After all, our children are the single most important resource for the future of our society, and our children, for good or ill, reflect the conditions of their families. What is wrong with the family? Feminists argue convincingly that much of what is wrong with the nation is what is wrong in the family writ large, and they have been saying it for nearly a century. Charlotte Perkins Gilman, in her *The Man-Made World*, pointed out in 1911 that the characteristics of the patriarchal family structure, with husband-father in command and wife-child as property he controls, stands opposed to any democratic notion of government as “an organization for public service of the people themselves.”²⁶⁰ The “masculine spirit of government as authority” has led to violence and war, Gilman argues, and reflects an impoverished understanding of human capacity and a politics whose motto would be “A Fight from start to finish.”²⁶¹

The traditional (patriarchal) division of labor between fathers and mothers continues to place the bulk of the childrearing and homemaking responsibility on the shoulders of mothers, despite the fact that a majority of mothers work outside the home. If we assume that children need “both love and instruction,” and that parenting in the home provides the most the child will have of both, then parenting in two-job families needs to be

²⁵⁹ Smith, S. (1997), p. 68.

²⁶⁰ Gilman, C. P. (1911) *The man-made world: Or our androcentric culture*. New York: Source Book Press, p. 185.

²⁶¹ *Ibid.*, p. 220.

negotiated away from the traditional model.²⁶² Such a redistribution of internal household labor and parenting roles is not subject to legislation, and consequently, falls outside the activity of public administration, however, as private individuals each of us could do more to promote partnership as a basis for marriage and parenting.

Other avenues are available for public action. Children need mentors, and actors in the public sector could facilitate mentoring—could create informal opportunities for children with gifts who need mentors to link up with adults who could nurture those gifts.²⁶³ Children need challenging education—education that enhances their capacity not for competition, but for collaboration, and centers on the growth of the child. They need education to prepare them for earning a living and education that transforms them into citizens—the kind of education John Dewey advocated a century ago.²⁶⁴ Whether these activities could prevent what has been happening in our schools today is uncertain, but they might begin a process where children come to learn how “to get along with strangers who of necessity create and recreate the public world of conventional expectations for each person’s social behavior.”²⁶⁵ They might find love and instruction in many places, and so develop self-esteem and purpose.

These activities take place in the context of neighborhoods, and, quaint though this might seem to us today when we hardly know our neighbors, neighborhoods provide the next opportunity for public administration to contribute to building healthy relationships. In 1918, Mary Parker Follett argued that neighborhood problems form the locus of democratic politics and that “neighborhood groups should become the recognized political unit.”²⁶⁶ Such groups were, she thought, “a protest against both utopia on the one hand and a mechanicalized humanity on the other.”²⁶⁷ She advocated the raising of “neighborhood consciousness” and proposed several ways this could be accomplished:

regular meetings of neighbors for the consideration of neighborhood and civic problems; a genuine discussion at these regular meetings; learning together—through lectures, classes, clubs;...[citizens] taking more and more responsibility for the life of the neighborhood; and...establishing some regular connection between the neighborhood and city, state and national governments.²⁶⁸

²⁶² Brown, D. W. (1995), p. 138; and p. 140; cf. Zohar, D. and I. Marshall (1994), Chapter 13; and Bellah, R. N., R. Madsen, W. S. Sullivan, A. Swidler, and S. M. Tipton (1992) *The good society*. New York: Vintage Books, pp. 45-49.

²⁶³ Actors in the public sector include public administrators, political appointees, elected officials, members of nonprofit organizations, and public educators.

²⁶⁴ Dewey, J. *MW 9*, especially Chapter 4; cf. Brown, D. W. (1995), pp. 154-159.

²⁶⁵ Brown, D. W. (1995), p. 142.

²⁶⁶ Follett, M. P. *NS*, p. 192.

²⁶⁷ *Ibid.*, pp. 202-203.

²⁶⁸ *Ibid.*, pp. 204-205.

It is in the neighborhood that difference confronts and accommodates difference through genuine discussion, and “the family realizes that its life is embedded in a larger life, and the richer that larger life the more the family gains,” she argues.²⁶⁹ And, from the small unit of the neighborhood as a starting point, the connections develop in a bottom-up direction to encompass larger political units. Various small “publics” recognize their mutual dependence and become “the great community.”²⁷⁰

Follett’s understanding of the critical importance of building social capital through the neighborhood group when she wrote about them in 1918 is echoed in today’s studies of the neighborhood effects on children’s outcomes.²⁷¹ Organized neighborhoods with the legitimacy Follett’s “genuine discussion” bestows not only are able to handle many internal problems without outside help, but also are “more likely to attract resources because they offer state and local policy makers intermediary mechanisms through which to disperse resources and avoid getting overly involved in the local political fray.”²⁷² The push from the political right to reduce government’s involvement in social welfare, from President Bush’s “thousand points of light” to the 1996 welfare reform act, advocates the creation and use of such “mediating structures.”²⁷³

Today’s studies of neighborhood effects take a “holistic approach by viewing communities as the integration of ‘place,’ ‘face,’ and ‘space’.”²⁷⁴ Neighborhoods are not defined by geography alone, but by familiar faces and common space for dialogue. Some present day approaches to developing social capital include creating:

- opportunities for increasing overall social interaction and communication that help develop, transmit, and reinforce shared community values and norms;
- opportunities for intergenerational relationships;
- opportunities for residents to work with community-based organizations to address significant social problems in the community; and
- opportunities for residents to have a significant voice in neighborhood affairs and decisions.²⁷⁵

²⁶⁹ Ibid., p. 213.

²⁷⁰ Dewey, J. (1954).

²⁷¹ Brooks-Gunn, J., G. J. Duncan, and J. L. Aber, eds. (1997) *Neighborhood poverty: Context and consequences for children*. (Vol. 1) and *Policy implications in studying neighborhoods*. (Vol. 2). New York: Russell Sage Foundation.

²⁷² Brown, P. and H. A. Richman (1997) Neighborhood effects and state and local policy. (Vol. 2, pp. 164-181) in Brooks-Gunn, et al., eds. *Neighborhood poverty*, pp. 167-168.

²⁷³ For an expanded description of this movement, see, Berger, P. L. and R. J. Neuhaus (1996) *To empower people: From state to civil society*. 2nd ed. Washington, DC: The AEI Press.

²⁷⁴ Levanthal, T., J. Brooks-Gunn, and S. B. Kamerman (1997) Communities as place, face, and space: Provision of services to poor, urban children and their families. (Vol. 2, pp. 182-205) in Brooks-Gunn, et al, eds. *Neighborhood poverty*, p. 199.

²⁷⁵ Brown and Richman (1997), pp. 172-173.

Amazingly enough, this list is very similar to Follett's list above. Public administration's potential role involves creating opportunities for self-organizing processes and dialogue to evolve in neighborhoods. The listening process of authentic dialogue is interactive, not neutral. Such goods as health care and education are "not framed as individual goods that each is encouraged to pursue singly; they are translated into goals on which people can act together."²⁷⁶ Providing protected space—common, safe space—is a first step; listening to the voice that arises from that space, and working with citizens in neighborhoods comprise a second.

Experiencing Conflict as Positive

The modern view of the individual as engaged in competition with others for scarce resources predisposes us to see conflict in a negative light. Conflict is war, with winners and losers. Conflict involves an aggressive defense of staked-out positions. Conflict is the skillful use of power against others. Conflict casts the other as enemy to be conquered and blamed. Conflict should be avoided, if possible, and if not possible, resolved in one's own favor. Against this background, Mary Parker Follett reconceived of conflict as a necessary and useful means of acquiring information, as a conduit for diverse ideas and values whose articulation and examination yields gains for all who participate.

As a beginning point, we have to accept that difference—individuality—is in the world to stay, and that the conflict difference generates can't be avoided.²⁷⁷ She compares conflict with friction. In some situations, we attempt to eliminate friction, so that things run smoothly. But, without friction, we couldn't transmit power from machine to machine, or run the trains, or make music with a violin.²⁷⁸ In a similar fashion, in society, conflict is a means of transmitting energy and transforming situations.

Follett suggests that we have developed three ways of dealing with conflict: "domination, compromise, and integration."²⁷⁹ The first is, of course, the most destructive for both parties to the conflict; in human terms, such victories are often empty. Compromise calls for both parties to give up something and leads to the issues under consideration reemerging, as nothing was settled from either party's perspective.²⁸⁰ The way to make conflict work, to arrive at a win-win solution, is the most difficult to achieve—integration.

²⁷⁶ Boyte, H. C. (1989), p. 148.

²⁷⁷ Follett, M. P. (1995) Constructive conflict. (pp. 67-87) in P. Graham, ed., *Mary Parker Follett*, p. 67.

²⁷⁸ *Ibid.*, p. 68.

²⁷⁹ *Ibid.*

²⁸⁰ *Ibid.*, p. 72.

Follett recognized that conflict takes place in a fluid context where with every action we take, “we reveal particular world possibilities”—that which particular possibilities are realized depends on how we act.²⁸¹ Figal describes freedom in our world as the “interplay of commonality and individuality in which the relationship between the two interacting elements never reaches a fixed and final state. [This] interplay is a strife...the freedom of [the] world consists of nothing other than this strife.”²⁸² The integration of conflict that Follett describes allows this freedom to operate without arriving at final solutions—just resolutions that benefit all participants.

The first step to the integration is “to bring differences into the open.”²⁸³ Suppressing difference makes resolution impossible because suppression allows participants to play predetermined roles and adopt attitudes in character with those roles. While this makes conflict more confrontational and dramatic, it also freezes participants into positions from which integration of their goals becomes unlikely and the drama often masks the significance of the issues.²⁸⁴

When desires of both sides are placed honestly on the table and are examined for their significance by the parties to the conflict, a “revaluation” of those desires becomes possible.²⁸⁵ This search for significance involves an examination of the symbolic content of the issue in an attempt to get at the meaning below the symbols so that the responses of the parties may be circular—evolving—rather than linear.²⁸⁶ The result of integration is a new solution, one that reflects neither original position, but the growth of the relationship between the parties.

The obstacles to integration are many. First, integration is the most difficult path—domination and compromise are routine and easy, almost automatic, paths to follow. Therefore, integration demands conscious effort and authentic cooperation.²⁸⁷ Another obstacle to integration is our tendency to “over-theorize” the matter under dispute, rather than approach it from the perspective of activity. We seem to be better able to integrate practical activities than abstract thought.²⁸⁸ Our use of language presents another stumbling block to integration. Some words are infused with meaning and incite emotional, non-reflective responses in situations of conflict.²⁸⁹ Manipulative leadership

²⁸¹ Figal, G. (1998) *For a philosophy of freedom and strife: Politics, aesthetics, metaphysics*. trans. W. Klein. Albany, NY: State University of New York Press, p. 17.

²⁸² *Ibid.*, pp. 22-23.

²⁸³ Follett, M. P. (1995), p. 73.

²⁸⁴ *Ibid.*, p. 74; p. 77.

²⁸⁵ *Ibid.*, p. 75, emphasis in original.

²⁸⁶ *Ibid.*, pp. 78-82.

²⁸⁷ *Ibid.*, p. 82.

²⁸⁸ *Ibid.*, pp. 82-83.

²⁸⁹ *Ibid.*, pp. 83-84.

on either or both sides of the conflict often stand in the way of integration.²⁹⁰ And, finally, we have simply not been trained to use conflict as the basis for finding new solutions.²⁹¹

There has been some movement lately in the direction Follett pointed out more than 70 years ago. The Harvard Negotiation Project has developed guidelines for conflict resolution that are useful in many of the situations in which public administrators find themselves.²⁹² Many of their recommendations gravitate around Follett's understanding of conflict as positive and having the potential for creative and innovative problem solving. Some strategies for using conflict to benefit all include separating personalities from the problem, focusing on issues, and cooperating to arrive at expanding the available options.²⁹³ A focus on the opportunity for relationship that can arise from conflict yields a stance toward negotiation that seeks to balance emotion with reason, that seeks to understand and is open to and accepting of the other, that applies non-coercive modes of influence, and that is honest and reliable.²⁹⁴

Beginning to see conflict and difference as opportunities for creative dialogue and negotiation helps the public administrator on many levels. This stance is incredibly productive in resolving ordinary workplace disputes within and outside of formal grievance procedures. It helps us to see and appreciate the potential and actual capacities citizens have for creating change in their neighborhoods. It helps us repair the damaged relationship we have with those citizens we serve.

Knowing Through Experience and Acting Pragmatically

John Dewey's instrumentalism does not provide a prescription for public administration; it provides instead a context in which to think about the future direction of public administration. Today's downsizing, privatizing, and reinvention of government movements reflect, at least in their rhetoric, a lack of confidence in government institutions that are organized on the old liberal principles. The isolation and mobility of individuals, a condition Dewey recognized 80 years ago as enlarged by information and transportation technologies (and that now is further exacerbated by such technologies as television and the Internet), has led to increased voter apathy and feelings of helplessness.²⁹⁵ To deal with these conditions, we have to rethink our relationships with each other and the world. Dewey's pragmatism and the new sciences offer a background against which we can accomplish this rethinking.

²⁹⁰ Ibid., p. 84.

²⁹¹ Ibid., pp. 84-85.

²⁹² Fisher, R. and W. Ury (1991) *Getting to yes: Negotiating agreement without giving in*. 2nd ed. New York: Penguin Books; and Fisher, R. and Brown, S. (1989) *Getting together: Building relationships as we negotiate*. New York: Penguin Books.

²⁹³ Fisher and Ury (1991).

²⁹⁴ Fisher and Brown (1989).

²⁹⁵ Dewey, J. (1954), p. 126; cf. Stever, J. A. (1993), pp. 422-423; and Ryan, A. (1995), p. 286.

Pragmatism's connection of theory to practice brings a significant change in meaning to both. Rather than visualizing theory as something outside of practice—informing practice from above—Dewey shows “thought as functioning on the same ontological level as action, and...thinking and acting as continuous events...that thinking is not merely instrumental...but that it issues in practical knowledge that is ontologically consequential.”²⁹⁶ The work of knowledge is to transform the experienced reality of ordinary events from a status of problematic to one that is satisfying. Such a task is possible because, as Sleeper puts it, “reality is always in process and is not fixed in character, which means that judgment is efficacious in the reconstruction and transformation of the real.”²⁹⁷ In Dewey's pragmatism, “knowledge becomes a form of action...To be and to know is to do and to act.”²⁹⁸

In the context of a metaphysics of contingency and an epistemology of knowing as an active practice, theory and practice take on a different relationship. Classical philosophy had placed a premium on theory, contemplation, and wisdom, and had minimized the importance of the practical wisdom associated with productive activity. Dewey overturned this hierarchy. For him, theory became simply another form of practice, one that “enriches possibilities and opens up new aims, or ends-in-view”—a different, but not necessarily better, means of shaping a contingent world.²⁹⁹ Theory can be seen as yet another tool to be used in inquiry. “The framing of practical goals—‘ends-in-view’ as opposed to ultimate, transcendent ends—is devised in actual problematic situations...we cannot envision a goal without...adopting a program of action to reach it...thus means and ends are organically related in an unbroken continuum.”³⁰⁰

According to Dewey, the role of philosophy had to change from one of puzzling over eternal truths to one of inspiring vision and imagination in the course of meeting ordinary problems. Reflection alone cannot hope to resolve the issues of a contingent world. However, “in a complicated and perverse world, action which is not informed with vision, imagination, and reflection, is more likely to increase confusion and conflict than to straighten things out.”³⁰¹ It is because the world is contingent that philosophy must, he concluded, climb down from the ivory towers of academe and provide the guiding methods and the organizing vision that will assist in “dealing with the problems of men.”³⁰²

²⁹⁶ Sleeper, R. W. (1986) *The necessity of pragmatism: John Dewey's conception of philosophy*. New Haven, CT: Yale University Press, p. 65; cf. Hickman, L. A. (1990), p. 48.

²⁹⁷ Sleeper, R. W. (1986), p. 63.

²⁹⁸ Diggins, J. P. (1994) *The promise of pragmatism: Modernism and the crisis of knowledge and authority*. Chicago, IL: University of Chicago Press, p. 219.

²⁹⁹ *Ibid.*, p. 119.

³⁰⁰ *Ibid.*, p. 241.

³⁰¹ Dewey, J. (1917), p. 95.

³⁰² *Ibid.*

If we abandon the quest for certainty that has been philosophy's principal occupation, we can accept knowing—the meaning attributed to events and objects through the processes of experiencing and making engaged in by a community of inquirers—as the standard by which the “truth” of an event or object is evaluated. Dewey would have us substitute the concept “warranted assertability” for that of “truth.” He agreed with William James that truth does not inhere in objects or events, but rather consists of the meaning we ascribe to them. We can make statements or assertions about events or situations that are warranted by our assignment of meaning and our agreement as to fact; such assertions are sufficiently secure that we can base action on them. Such a temporary island of stability allows us to take an active stance with respect to, and cooperatively engage in making sense of, an inherently uncertain, unstable, and processual world. Assumptions that certainty and absolute, objective truth are discoverable, Dewey thought, obstruct the kind of knowing that allows active intervention—agency—in the world.

Through the ages, philosophy has postulated an objective and fixed reality, characterized by completeness and order, and taught us that we could discover facts about that reality—facts that, as science perfects them, would come to more and more closely correspond to that reality. What Dewey argues is that what we experience is what is real—that there is no perfect and eternal truth to which our discovered facts can correspond. If ours were a perfect, unified, and complete world, there would be no room for human agency, for freedom.³⁰³ Dewey argued that it is the juxtapositions between simplicity and complexity, between predictability and randomness, between chaos and order that are evident in our world that give meaning to life. As he described it:

We live in a world which is an impressive and irresistible mixture of sufficiencies, tight completenesses, order, recurrences which make possible prediction and control, and singularities, ambiguities, uncertain possibilities, processes going on to consequences yet indeterminate. They are mixed not mechanically but vitally like the wheat and tares of the parable. We may recognize them separately but we cannot divide them, for unlike wheat and tares they grow from the same root. Qualities have defects as necessary conditions of their excellencies; the instrumentalities of truth are the causes of error; change gives meaning to permanence and recurrence makes novelty possible. A world that was wholly risky would be a world in which adventure is impossible, and only a living world can include death.³⁰⁴

It is only a contingent, experiential world such as that described above that gives us the space to choose freely and the capacity to deliberate about the consequences of actions we take.

³⁰³ Dewey, J. *LW 4*, p. 199.

³⁰⁴ Dewey, J. (1958), pp. 47-48, emphasis added.

Deliberation is the particular form of dialogue associated with democratic decision making. We deliberate together so that we can take action in the face of uncertainty.³⁰⁵ Deliberation in the context of politics is the natural home of conflict—if we agree on the course of action without conflict, there is no need to deliberate. “Deliberation . . . is the exercise of practical reason . . . the active use of perception [to determine] what particulars are the ‘relevant features of a situation’ and how seriously to consider each in determining a course of action.”³⁰⁶

For Dewey, then, theories are tools, and tools, theories. Thinking takes one outside the immediate problematic situation in order to “get leverage for understanding it.”³⁰⁷ The application of a tool “becomes part of the active productive skill brought to bear on the situation. The purpose of the tool is to reorganize the experience in some way that will overcome its disparity, its incompatibility, or its inconsistency.”³⁰⁸ Tools are theories in that, until they have been applied and the results evaluated, it is impossible to credit them with resolving the situation. Theories are tools in that they are useful in sorting out and deciding among possible actions and their consequences for the one that will best resolve the situation—they help “organize experience.”³⁰⁹

According to Shields, “pragmatists view and judge theories as instruments in problem solving,” and, as a result, pragmatism is a philosophy that is “married to the concrete, chaotic, messy world of experience—a place where PA practitioners work and solve problems.”³¹⁰ Public administration in a democratic society presents conditions where theory and practice have important and mutually-reinforcing tasks. Acting pragmatically—working as a part of the community of inquirers and applying both the insights of abstract thought and practical wisdom—can enhance the ability of public administrators to find and serve the public good and to enable citizens to move forward in their own chosen life projects.

Realizing Democratic Administration: Or, Where Might We Go From Here?

If we want to realize (or make real) democratic administration, we have to start from where we are, and visualize where we might go. Public administration, as a field of scholarly inquiry and as a professional practice, has been the subject of critique, analysis, and debate for decades. This dissertation is not by any measure the first work of scholarship to connect public administration with the worst aspects of the modern project.

³⁰⁵ Bickford, S. (1996), pp. 27-29.

³⁰⁶ Ibid., p. 30.

³⁰⁷ Dewey, J. *MW 10*, p. 327.

³⁰⁸ Hickman, L. A. (1990), p. 21.

³⁰⁹ Shields, P. M. (1996) Pragmatism: Exploring public administration’s policy imprint. *Administration & Society*, 28 (3), pp. 390-411, p. 396.

³¹⁰ Ibid., p. 395.

Modernity has been labeled as an “incomplete project” by its most persuasive modernist critic, Jürgen Habermas, as impossible to complete by such critical theorists as Horkheimer and Adorno, and for most postmodernists, as a territory we have left behind, but just don’t know it yet.³¹¹

We are all familiar with the public administration associated with modernity. We understand its expectations, even as we are uncomfortable with its premises and methods. Its products—public institutions and policies—have been characterized as both repressive and regressive. The “traditionalist” scholars in public administration, along with Dewey and Follett from outside the field, attempted in vain to steer it away from its dependence on modernist rationality over more democratic means. One social critic, Kenneth Keniston, supports a charge that social policy is regressive with an list of policy directions whose verbs are all the more chilling because they remain as true of public policy in the 1990s as they were in the 1960s:

- to reduce complexity
- to limit choices
- to inhibit freedoms
- to narrow the alternatives
- to constrain those who ask hard questions
- to simplify moral dilemmas³¹²

We know the world of public administration and policy described above from our experiences in the practice and the academy. We have participated in it and have observed that the rational operation of public organizations conforms to the premises of modern science as interpreted by Enlightenment philosophy. As a society, America has reaped many benefits from modernity, many of them made possible by bureaucratic government. We have a high standard of living, abundant material goods, advances in health, a relatively wide swath of political freedom, and opportunities for choice, all due to the technological base of our society.³¹³ But these have been secured at a high cost. The same technocracy that provides these benefits has also isolated us as artificially-constructed individuals, has encouraged us to be passive citizens in a procedural democracy, and has led to our separation from each other through an enormous disparity in wealth and opportunity.

It remains to be seen if public administration can break out of its modernist habits of thought and action. It will certainly be necessary for public administrators to break away

³¹¹ See, Habermas, J. (1983) Modernity: An incomplete project. in H. Foster, ed., *The anti-aesthetic: Essays on postmodern culture*. Port Townsend, WA: Bay Press; Horkheimer, H. and T. Adorno (1972) *Dialectic of enlightenment*. trans. J. Cumming. New York: Seabury; and Farmer, D. J. (1995).

³¹² Keniston, K. (1960) *The uncommitted: Alienated youth in American society*. New York: Harcourt, Brace & World, Inc., p. 433.

³¹³ *Ibid.*, pp. 420-421.

from the usual constructions of language and imagery for us to take steps in that direction.³¹⁴ One means available to get started with this liberation of public administration is to attempt to see the world through the lens of the new sciences, and especially, to “recapture the old, and yet-again new, idea of wholeness” that permeates the ontological premises of these sciences.³¹⁵ Keniston warned us in 1960 that “our collective and individual future...will inevitably be shaped by us...The question is not whether Americans will shape their future, but how [we] will shape it.”³¹⁶

If we can visualize the public administrator in a relationship of friendship with fellow citizens and imagine a truly democratic administration, what differences might we see in the practice of public administration? If, in the past, public managers have concentrated on deciding for citizens and doing for citizens, will they, in the future, decide with citizens and do with citizens? Following on the premises of the new sciences, what activities might public managers engage in, and what processes and stances might comprise and inform their roles in a democratic republic? The practice of public administrators might be characterized by some of the following:

- ***Creating circumstances for people to develop their capacities more than delivering pre-packaged goods and services.***

Friends may occasionally give each other gifts, but more often they can be relied upon to create opportunities and smooth the way for each other. The unidirectional quality of the present relationship between the public administrator and the citizen creates an unhealthy dependency leading to resentment. The lack of reciprocity in that relationship forever marks the public administrator as superior, both in terms of the resources at her command and in terms of her ability to decide how those resources ought to be allocated. A friend may offer advice and put her expertise to work to help you reach your goals, but she doesn't decide what your goals should be or punish you if you don't agree to follow her advice.

- ***Discovering the law of the “situation”—the processes that drive each particular aspect of their organizations and communities and connect them into wholes, and basing decisions on their experience of the particular—managing through understanding the processes that are unique to their organizations and communities.***

A friend takes the time to attend to the particular about his friend. He cares enough not to generalize or assume he has everything down pat—the relationship between them is not

³¹⁴ D. J. Farmer's (1995) reflexive interpretation of public administration is one of the few optimistic postmodernist examinations available, and it's optimism, in my opinion, derives from the possibility of breaking the symbolism of language in public administration.

³¹⁵ Keniston, K. (1960), p. 439, emphasis in original.

³¹⁶ Ibid., p. 44, emphasis in original.

about rules, but about love. A friend is open to the other who is a part of himself, who, in part, makes him who he is. A friend understands the process of their evolving together.

The public administrator who would be a friend, then, must be receptive to the nuances of each situation in which he takes part. He, as Follett argued, must derive the direction of the unfolding process from the situation. He can only evaluate or analyze the process from the perspective of the “face-to-face situation (or encounter).”³¹⁷ He and the others with whom he works share a job—each doing his or her part. The job is a whole woven of their respective contributions and insights. Weinberg (1996) argues that “the interpersonal dynamics that fuel interaction determine the nature of the organization, that this dynamic is a product of the consciousness people bring to the organizing process, and that this consciousness emerges in the process of interaction itself.”³¹⁸ Management in such an organization becomes a process of creating intersections and building pathways together with those who will travel along them.

- ***Bridging the gap between elected officials and citizens, aiding the process of agenda building, policy development, policy evaluation—and, where possible, encouraging elected and appointed officials to be more responsible, responsive, and representative.***

What is the function of career public administrators relative to elected and appointed officials? Barth’s (1993) case studies place them in a critical, although subordinate, role—a position from which they can act as a bridge connecting constitutional responsibility, citizen input, and political actors’ policy agendas.³¹⁹ A public administrator who is a friend to the citizen would seek opportunities to be such a bridge. Cook (1992) argues that public administrators serve a representative function—that based on their expertise and position mediating citizen and government, they can discern, act on, and further the public interest.³²⁰ It is possible that they may do so, but before that can actually happen, public trust in administrative agencies must be restored. Trust is a basic element of the mutual and reciprocal relationship of friendship.

Trust, according to Thomas (1998) is lost for a variety of reasons.³²¹ One of these is the use of excessively-detailed contracts in conducting the public’s business. Trust “can also

³¹⁷ Harmon, M. M. (1981) *Action theory for public administration*. New York: Longman, p. 3ff.

³¹⁸ Weinberg, L. (1996b) Seeing through organization: Exploring the constitutive quality of social relations. *Administration & Society*, 28 (2), pp. 177-204, p. 179.

³¹⁹ Barth, T. J. (1993) Constitutional subordinate autonomy: Serving multiple masters—a normative theory in practice. *Administration & Society*, 25 (2), pp. 160-182.

³²⁰ Cook, B. J. (1992) The representative function of bureaucracy: Public administration in constitutive perspective. *Administration & Society*, 23 (4), pp. 403-429, p. 424.

³²¹ Thomas, C. W. (1998) Maintaining and restoring public trust in government agencies and their employees. *Administration & Society*, 30 (2), pp. 166-193, pp. 184-185.

be lost when role expectations are in flux.”³²² Agency instability, especially when the changes being made are incongruent with the policy or social environment, reduces the overall trust level. Real or perceived “misuse of power” also erodes trust, as do individual experiences of professional incompetence and perceived laxity in regulating professional performance.³²³ Considering these elements through which trust is eroded, can we say that the principal remedies of reinventing government work toward restoring public trust and confidence in government?

Restoring trust will require something other than reinvention—it requires revisualization of relationships. The starting point is, I believe, the neighborhood and government agencies at the local level, and the impulse, on the part of those who want to earn trust, must be a willingness to trust first—to risk reaching out. Once a foothold is established, trust generates more trust, and many other desirable qualities emerge in the system. “In systems of trust, people are free to create the relationships they need. Trust enables the system to open. The system expands to include those it had excluded. More conversations—more diverse and diverging views—become important.”³²⁴

- ***Empathizing more than strategizing, play more than purpose, participation more than distance.***

Empathy is the capacity to “understand, be aware of, be sensitive to, and vicariously experience the feelings, thoughts, and experience of another,” without having these “communicated in an objectively explicit manner.”³²⁵ The public administrator as friend knows without being told what her friend is feeling and thinking; she can place herself in the other’s position, and from that vantage point, she can act cooperatively with her friend.

Although planning is an important component of any activity, the use of the term strategy implies a fixed goal and the steps to take to reach it. Public administration has, to an extent, reconceptualized strategic planning to be less rigid and fixed, less determinate, more flexible and more appropriate for the public sector.³²⁶ However, assuming the persona of the friend, we might think of planning from a still more open perspective. Ours is a world still in process—an emergent world. This context requires that we “stand in a different place” with regard to planning.³²⁷ Instead of merely standing at some fixed end we have envisioned, and imposing orderly steps on process in the hope that it will

³²² Ibid., p. 185.

³²³ Ibid., pp. 185-186.

³²⁴ Wheatley, M. J. and M. Kellnor-Rogers (1996) *A simpler way*. San Francisco, CA: Berrett-Koehler Publishers, p. 83.

³²⁵ *Merriam-Webster’s Collegiate Dictionary* 10th ed., p. 378.

³²⁶ See, especially, Bryson, J. M. (1995) *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement*. San Francisco, CA: Jossey-Bass Publishers.

³²⁷ Wheatley, M. J. and M. Kellnor-Rogers (1996), p. 73.

lead us there, we also need to be able to “stand at the beginning, clear in our [collaborative] intent, with a willingness to be involved in discovery.”³²⁸ Trusting in the process between us, empathizing with each other, we move with the future that emerges from our relationship.

Many of us, as serious scholars, bristle at the postmodernists’ suggestion that public administration could be more “playful.”³²⁹ And yet, as we have discovered, our world does not come infused with purpose—purpose evolves with the emerging situation. Play is the “interchange,” the “communicative dialogue,” among players and between players and their environment in the process of evolution.³³⁰ The modern project denies the “play of discourse and communication [that] produc[es] the web of life,” and offers only competition and the contract as a basis for society as a substitute for the emergence of community through play.³³¹

Friends do not become friends according to a purpose, nor does friendship require a contract—their relationship evolves through a playful process of openness and trust and reciprocity—an adventure or exploration filled with surprises. The world of experience offers many opportunities for serendipity—playful and accidental discourse and activity—that we fail to see when blinded by purpose.

In order to be a friend, the public administrator must reduce the distance between herself and the citizen. That distance may be actual, geographical distance and/or psychological and cultural distance. We talk about inviting citizen participation, but put barriers composed of these kinds of distance in the way of actualizing that participation. In democratic administration, we would see more invitations to closeness, to a greater intimacy, between the agency and the citizen. With that closeness, collaboration becomes possible.

- *Evoking relationship among citizens more than regulating their activities.*

Democracy is all about relationship, a special kind of cooperative relationship among citizens of all kinds, including citizens who are public administrators. Traditional public administration, with its concentration on regulation and control of activities, has served to sever relationships instead of helping them grow into a fruitful, ecologically sound, balance. A friend seeks the growth of his friends, and makes opportunities for growth available. A friend creates settings for growth; he doesn’t seek to isolate, but rather

³²⁸ Ibid.

³²⁹ See, Farmer, D. J. (1995).

³³⁰ White, D. R. (1998) *Postmodern ecology: Communication, evolution, and play*. Albany, NY: State University of New York Press, p. 36.

³³¹ Ibid., pp. 36-37.

integrates his friends. A friend invites others into his space. All of these activities evoke relationship.

- ***Listening more than directing or controlling.***

Active listening is a denial of self and a welcome to the thoughts, dreams, hopes, and aspirations of others. Listening is a direction of attention outward, a receptivity to ideas and relationships that are not centered in the self. Listening enables the public administrator to be in tune with the citizen and her needs. Listening permits the public administrator to represent those needs when she acts as a bridge between the citizen and the political actors in the policy process. Listening permits an appropriate use of expertise as it connects specialized knowledge and skills to problems framed by the citizen.

The new sciences have taught us that control is an illusion. We can control some processes some of the time; there is enough stability for control in specific limited cases. But, as chaos theory and ecology have shown us, if the system is not linear—and most aren't—a small change in one parameter can lead to an unpredictable and large change in the whole system. The notion of control that dominates so much of public administration thinking is an illusion—one based on the mistaken premise “that man is somewhat outside of and above nature.”³³² In his account of the possibility of control in an engineered pre-historic amusement park, novelist Michael Crichton perhaps says it best:

And chaos theory teaches us...that straight linearity, which we have come to take for granted in everything from physics to fiction, simply does not exist. Linearity is an artificial way of viewing the world. Real life isn't a series of interconnected events occurring one after another like beads strung on a necklace. Life is actually a series of encounters in which one event may change those that follow in a wholly unpredictable, even devastating way...That's a deep truth about our universe. But, for some reason, we insist on behaving as if it were not true.³³³

Controls that are imposed from outside almost never fulfill our expectations, and often impede processes that would meet needs and strengthen relationships. A friend would not attempt to control the life project of his friend, but would, instead, offer help and encouragement.

- ***Enabling citizen practices and collaborative inquiry and empowering subordinates in their work activities more than doing and thinking for others.***

³³² Ibid., p. 105.

³³³ Crichton, M. (1990) *Jurassic park*. New York: Ballantine, p. 171.

Enabling others to develop the capacity for participation is an aspect of a special kind of leadership—what Barber calls “facilitating leadership.”³³⁴ This kind of leadership is ultimately “responsible to a process rather than to specific outcomes.”³³⁵ We witness this facilitation every time a competent teacher ensures that all her students, even the reticent or less articulate, have a chance to participate in class, and when a trial judge is able to clarify the “technicalities and possibilities of the law” for a jury without reducing their autonomy.³³⁶

Enabling and empowering require that the public administrator break with “the older idea and practice which made knowledge a monopolistic possession” of the few—the initiates in religion or science or politics—if the “democratic ideal” is to be realized or to even get a “fair trial.”³³⁷ This democratic ideal is nurtured, rather, by a politics of “reciprocal empathy and mutual respect,” and the dialectic of “cooperation and activity” associated with civility.³³⁸ The idea of citizenship in such a democracy is characterized as:

a dynamic relationship among strangers who are transformed into neighbors, whose commonality derives from expanding consciousness rather than geographical proximity. Because the sharp distinction that separates government and citizenry in representative systems is missing, the civic bond under strong democracy is neither vertical nor lateral but circular and dialectical. Individuals become involved in government by participating in the common institutions of self-government and become involved with one another by virtue of their common engagement in politics.³³⁹

The public administrator as friend and facilitator needs to recognize such civic bonds and aid in strengthening them. If she wants to be a friend, she needs to participate in the conversation and activities that make citizens confident and articulate. She needs to be a part of the “common seeing and common work” that transforms individuals into citizens.³⁴⁰ And, she needs to incorporate the idea of common work and common seeing into the practices of her workplace.

If public agencies are to become institutions that support the ideal of democracy, several internal transformations are needed. In structure, agencies need to rise from the situation—they need to be “practical and workable.”³⁴¹ They should also fit in with

³³⁴ Barber, B. (1984), p. 238ff., emphasis added.

³³⁵ Ibid., p. 240.

³³⁶ Ibid.

³³⁷ Dewey, J. *LW* 7, p. 365.

³³⁸ Barber, B. (1984), p. 223.

³³⁹ Ibid.

³⁴⁰ Ibid., p. 232.

³⁴¹ Ibid., p. 262.

existing social structures—complement rather than replace them.³⁴² They should help to demonstrate that visions of self-government are neither irrational, intolerant, nor uniform.³⁴³ They need to directly address the “obstacles that modernity appears to place in the way of participation: namely, scale, technology, [and] complexity.”³⁴⁴ And, they should “give expression to the special claims of strong democracy as a theory of talk, judgment, and public seeing” by demonstrating that these activities are a viable alternative to a technocracy populated by political elites and passive citizens.³⁴⁵

Democracy as a “moral ideal” and democratic administration as a practical application constitute an “endeavor to unite two ideas which have historically often worked antagonistically: liberation of individuals on one hand and promotion of a common good on the other.”³⁴⁶ We have so constructed our understanding of rights as individual possessions that they serve to divide us, and yet the rights we enjoy as citizens evolve from the strength of our association with each other. An example of the “group” quality of the so-called individual rights is freedom of speech. Central to securing all of our constitutional rights is our ability to circulate information. Freedom of expression, the “liberty to think, inquire, discuss, is central in the whole group of rights which are secured in theory to individuals in a democratic social organization.”³⁴⁷ We think of free speech as an individual right, yet any interference in free speech attacks “the relationship established between a willing speaker and a willing listener”—it “violates the rights of at least two people.”³⁴⁸ The public administrator whose goal is to enable citizens and employees may want to examine the notion of “individual rights” and reenvision them in terms of relationship and community.

Conclusions

The ontological liberation of the new sciences makes it possible, literally and virtually, for us to see the world in a new way. If we choose that liberation, we will see the interconnection of the ecological and social systems of which we are a part; we will construct a world of reciprocity, potential, and growth. We will recognize the inherent personal responsibility each of us has to the other; we will dissolve the subject-object dualism made possible only by assuming a privileged position and objectivity. We will appreciate the richness that diverse experience offers; we will recognize that freedom and order arise together from self-organization and cooperation. We will understand that knowing is a dynamic process of our collaborative inquiry into the problematic situations a nonlinear world produces.

³⁴² Ibid.

³⁴³ Ibid.

³⁴⁴ Ibid.

³⁴⁵ Ibid.

³⁴⁶ Dewey, J. *LW* 7, p. 349.

³⁴⁷ Ibid., p. 358.

³⁴⁸ diZerega, G. (1991), p. 92, emphasis in original.

For most of us, this new science worldview is expressed in non-scientific terms through ordinary activities. Dewey, for instance, attempted to bring art back into the world of the ordinary lived experience when the modern view held “fine” art apart from life.³⁴⁹ He felt that museums encouraged a spectator theory of art much as the philosophical discipline of epistemology encouraged a spectator theory of knowledge. Rituals and the designing and making of ordinary objects are interrelated, and have a constitutive effect on ordinary life—they shape life experiences. For instance, “houses designed with large front porches or those designed with rear decks not only organize space differently, but work to encourage some sorts of interactions and minimize the importance of others.”³⁵⁰ The art and craft of design is not only about aesthetics, but about spaces and the conversations they enable or prevent. The art and craft of public administration is not only about policy and implementation, but about the spaces it creates and the conversations that make those policies and that implementation democratic.

Design and making are two elements in the traditional craft of quilting. The traditional practice of quilting embodied the best of individual and community skills. It also made new and useful objects out of the old and discarded—quilting, in its traditional sense, was a reclaiming project. Some quilts are self-organized—the ultimate design evolving from the pieces available for the project. Some follow any of a variety of traditional patterns—the pieces are connected according to a plan that has been “engineered” so that the outcome is predictable.

Quilting in the traditional sense was a communal project of many. The quilt top may have been pieced by one member, but all joined in the quilting that finished the project. Along with the sewing, the participants, sitting in a circle, would listen to a reading, discuss neighborhoods issues, or just plain socialize. Today, most quilters work alone.³⁵¹ The product makes just as warm a bed covering, but the process is lonely. The community built around the construction of a quilt delivers more than a warm bed—it delivers common seeing and activity and the sociality that warms the heart.

The construction of social policy, today the work of lonely experts following pristine plans that do not account for difference, could be organized more like traditional quilting. In that case, the pieces would reflect “the situated knowledge of each contributor,” and each different piece would bring interest and contrast and vitality to the overall design.³⁵² The interior design of the policy quilt would be a self-organized patchwork that would

³⁴⁹ Dewey, J. *LW 10*.

³⁵⁰ Boisvert, R. D. (1998), p. 132.

³⁵¹ Like R. D. Putnam’s “Bowling alone,” quilting alone may be said to be an indicator of the decline of associational life and the social capital that it builds. See, Putnam, R. D. (1995a) *Bowling alone. Journal of Democracy*, 6, pp. 65-78; and (1995b) *Bowling alone revisited. The Responsive Community*, 5 (Spring), pp. 18-33.

³⁵² White, D. R. (1998), p. 180.

not allow diversity to be overcome by elites who seek to retain unjust social relations—those that discriminate and place an unfair burden on the female, the poor, and the “Other.”

Barnraising, like quilting, was once an activity that brought about community by making. When a neighbor needed the help of others in an activity that could not be done alone, the neighbors pitched in to help. They made a day of it, with the men and boys framing the barn, while the women and girls concentrated on the food.³⁵³ Conversations took place in the work and along with the meal. “Genuine, fully human, associations incline us toward the good when they manifest a fluid, vigorous participation in shared activities.”³⁵⁴ Building alone, like quilting alone, yields products but lacks process. Building a structure together, breaking bread together, binds the community of difference into one of trust and reciprocity.

The rapid pace of technological advance, the glut of information science produces, makes us wonder if we have the capacity to make sense of it all, even together. Robert Oppenheimer, “father” of the atomic bomb, offers some hope for encompassing these advances. First, he reminds us, this new knowledge “has some order in it.”³⁵⁵ But even more importantly, we ourselves can make sense of it through ordinary activities. “We can have each other to dinner. We ourselves, and with each other by our converse, can create, not an architecture of global scope, but an immense, intricate network of intimacy, illumination, and understanding.”³⁵⁶ We may not be able to connect everything with everything else, but we can come to see the connection of the particular with the global through such conversations around the dinner table.³⁵⁷

There are two levels of transformation necessary for the public administrator and for the citizen, if a “quantum society” of community and collaboration is to emerge. These are the inner level of personal growth, and the outer level of conscious commitment. As Zohar and Marshal put it:

On the inner level, I must work on myself, educate myself, make myself aware of the issues and the forces at large in my society. I can do this through private reflection, through reading the papers, keeping up with events, attending the theater, involving my consciousness with the wider world around me, sorting out my values and priorities, realizing that social and political issues are issues for me.

³⁵³ This “traditional” division of labor, unfortunately, still has not been overcome.

³⁵⁴ Boisvert, R. D. (1998), p. 138.

³⁵⁵ Oppenheimer, R. (1971) The growth of science and the structure of culture: Comments on Dr. Frank’s paper. (pp. 63-73) in G. Holton, ed., *Science and the modern mind*. Freeport, NY: Books for Libraries Press, p. 73, emphasis added.

³⁵⁶ Ibid.

³⁵⁷ Ibid.

On the outer level, I must become active in that wider world I share with others. I must make some interpersonal effort through conversation with family and friends, through “good works,” through work, through membership in some group or association. I must get actively involved in the wider political process at some level that suits my abilities. If there is not a group that expresses my priorities, I might found one. But above all, in whatever I do, at whatever level I act, I must listen, I must engage in dialogue and do whatever I can to encourage dialogue between others.³⁵⁸

These transformations are the province of the individual practitioner and academic, not a global task for the field at large. The principles of self-organization preclude the imposition of such a transformation from outside the practices of individuals. Such transformations are voluntary; recognition of the need for them arises as we each face the dangers of an uncertain world and struggle to find the means to create some measure of stability. We often find comfort in the sociality of friends and the satisfaction of shared activities. In the tradition of public administration, we find a great deal of encouragement to submit to the processes of transformation that Zohar and Marshall describe. It took moral courage for men and women like Jane Addams to leave their comfortable, safe middle class lives behind to found and work in and live in settlement houses in the midst of great poverty and “otherness.”

Could our “retro” public administrator create, and work in, and live in virtual, if not literal, settlement houses? If she is not willing to immerse herself in the vital life of the neighborhood, or as a teacher, if she is not willing to introduce the idea of such personal transformation and commitment as a part of her curriculum, we cannot expect the field, as a whole, to change. Without such a change at the level of consciousness, I believe, public administration cannot escape from the illusions projected by Newton’s single vision and will continue to be an instrument, not for democracy and the web of life it weaves, but for death.

³⁵⁸ Zohar and Marshall (1994), p. 295, emphasis in original.

Epilogue

It has been three years since the bombing of the Murrah Building, and in that time, the site has been cleared, plans for a memorial park have been drawn up, and the steps that comprise our procedural system of justice have been taken. The crime was investigated, two men were charged and have been brought to trial in federal court. Timothy McVeigh was tried first; he was found guilty of eight counts of murder and conspiracy, and has been sentenced to death.¹ Terry Nichols was later found guilty of the lesser charges of conspiracy and manslaughter and has been sentenced to life imprisonment. Appeals will undoubtedly be made by both. Both continue to face murder charges in the state of Oklahoma. The wheels of justice have turned, and, for the victims and their families and friends, some sense of closure may be said to have been achieved.

The history of science contained in Chapters 3 and 6 of this dissertation reveals that the human's understanding of the world has gone through a circular process. First, humans understood themselves as a part of nature, interconnected with all living things, involved in the great experiential cycle of life. The Christian Church and "Modern" Science were the institutions that came to separate humans from nature, and, ultimately from each other, in an often violent search for foundational truth and ontological unity. Today, science has moved back into an ecological or holistic understanding of an uncertain, incomplete, indeterminate world, the making of which is a process shared in by humans.

This last picture of reality supports, not a linear metaphysics of punishment and closure—of discrete events that once gotten through allow us to put the problem in the past—but one more like that of native Americans of the southwest—a metaphysics of balance or harmony. In the Navaho tradition, the closest comparison to the Western concept of "sin" or "crime" is to be "out of order" or "lacking control."² The Navaho way is a code for living in harmony with the universe; transgressing the code calls for correction, a restoring of harmony, not punishment. For the Navaho, "what is wholly good is merely an abstraction, a goal that man as an individual never attains... On the road of life to his final destiny, which will make man one with the universe, he is concerned with maintaining harmony with all things."³ Religious rituals and ceremonials, not courtrooms and prisons, are the way to restoring harmony, once it is lost.

We would do well, if we hope to "restore harmony" and create a democratic community, to look back to the legacy of the native Americans we have nearly destroyed through our modern hubris. There are lessons in democratic community to be found in the political

¹ The federal case only concerned the deaths of the eight federal employees in the bombing. The 160 "civilians" killed in the incident are the province of the State of Oklahoma.

² Reichard, G. A. (1970) *Navaho religion: A study of symbolism*. 2nd ed. Princeton, NJ: Princeton University Press, p. 125.

³ *Ibid.*, p. 5; and p. 49.

theory of the Iroquois confederacy, and a reverence for life and equality in the traditions of all of our indigenous peoples.⁴

Do we, then, scrap the American system of criminal justice that has brought closure in the Oklahoma City bombing case? Probably not, but we could temper our view to the extent that the processes we engage in related to dispute and disagreement, even those pertaining to crime, might be focused more on healing than settling, more on restoring balance than winning. In such a system, the victims and families would not be brought to closure—an artificial putting of the tragedy behind them and moving on—but might once again walk in beauty—putting the tragedy in perspective so that balance can be restored.

⁴ See, Johansen, B. E. (1982) *Forgotten founders: How the American Indian helped shape democracy*. Harvard, MA: The Harvard Common Press; and Grinde, D. A., Jr. (1992) Iroquois political theory and the roots of American democracy. (pp. 227-280) in O. Lyons, J. Mohawk, V. Deloria, Jr., L. Hauptman, H. Berman, D. Grinde, Jr., C. Berkey, and R. Venables, *Exiled in the land of the free: Indian nations and the U. S. Constitution*. Sante Fe, NM: Clear Light Publishers.

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- responsible for all lectures, activities, and evaluation

Training Experience: Coordinator, Initial Assistance - Cuyahoga County Department of Human Services, Cleveland, Ohio

1982-1986 Provided complete training to all new Eligibility Specialists coming into the Initial Assistance Department, which encompassed:

- development of curriculum covering interviewing, determining initial eligibility and authorizing benefit payments on federal, state and local programs of welfare assistance, completing case files, making referrals, and transferring cases.
- development of evaluation techniques.
- conducting all class sessions and simulation modules.

Employment Record:

1993 to present: Center for Public Administration and Policy, VPI & SU; Department of Political Science, VPI & SU (Spring, 1997), and Roanoke College (Spring, 1997).

Graduate Assistant

- conducting library and other research.
- proposing and participating in the development of research projects and course work.
- assisting with correspondence.

Editorial Assistant, *Administration & Society*.

- receiving, tracking, and assigning reviewers to manuscripts submitted
- preparing manuscripts for publication
- correspondence with authors, reviewers, and publisher.

Instructor

Undergraduate courses in political science: Poverty and Welfare Policy, VPI&SU; Public Administration (Roanoke College). Complete responsibility for development and instruction in these courses.

Employment Record (cont.)

1974 - 1993: Cuyahoga County Department of Human Services, Cleveland Ohio

1989-1993	Coordinator, Ohio City Income Maintenance Center
1982-1989	Coordinator, Department of Initial Assistance
1980-1982	Supervisor, Main Neighborhood Service Center
1978-1980	Eligibility Specialist, Initial Assistance
1976-1978	Eligibility Specialist, Ongoing Assistance
1974-1976	Clerical Staff, Ongoing Assistance

Publications:

Refereed Journals:

- 1998 with Suzanne Beaumaster, "Women and Information Technology: The Future of the Public Space," under submission to the *Southeastern Political Review*.
- 1997 "Reclaiming John Dewey: Democracy, inquiry, pragmatism, and public management," under submission to *Administration & Society*.
- 1997 "Dewey and the dialogical process: Speaking, listening, and today's media," (in process), invited for a symposium on dialogue and transformational change by the *International Journal of Organization Theory and Behavior*.
- 1997 "Imagining anticipatory government: A speculative essay on quantum theory and visualization," *Administrative Theory and Praxis*, 19 (3), pp. 355-367.
- 1995 with Robert C. Ward, "The Charleston County Public Library: A Comparison of Budget Analysis Methods," under submission, *Library Trends*.

Other Publications:

- 1998 with Gary L. Wamsley, "Beyond the Yellow Brick Road: A Journey, a Vision, and a New Role for Public Management," in *Public Management Reform and Innovation: Research, Theory and Application*, ed. H. George Frederickson. Tuscaloosa, AL: University of Alabama Press, forthcoming.
- 1997 with Gary L. Wamsley, "The Blacksburg Manifesto," and "Agential Leadership," in Jay M. Shafritz (Ed.) *The International Encyclopedia of Public Policy and Administration*. Henry Holt and Company, Inc., forthcoming.

- 1996 “Chaos as Opportunity: Grounding a Positive Vision of Management and Society in the New Physics,” book reviews of L. Douglas Kiel (1994) *Managing Chaos and Complexity in Government* (San Francisco: Jossey-Bass) and Danah Zohar and Ian Marshall (1994) *The Quantum Society* (New York: William Morrow and Company), *Public Administration Review*, 56, 5, pp. 491-4.

Professional Activities:

Papers presented and conference participation:

- 1998 North Carolina Political Science Association Annual Conference; Appalachian State University, Boone, NC, April 3-4, 1998.

- 1997 “Reclaiming John Dewey: Democracy, Inquiry, Pragmatism, and Public Management,” presented at the Fourth National Public Management Research Conference, The University of Georgia, Athens, Georgia, October 30- November 1, 1997.

with Larkin Dudley, “Three Level Learning Without an Escalator: Balancing Theory and Practice in a Two-tiered Program,” presented at the Twentieth National Conference on Teaching Public Administration, Richmond, Virginia, March 6-8, 1997.

with Suzanne Beaumaster, “Women and Information Technology: The Future of the Public Space,” presented at the annual conference of the North Carolina Political Science Association, Pembroke, North Carolina, March 22-23, 1997.

- 1996 Roundtable Panel on Postmodern Theory and Political Science, Annual Conference of Virginia Political Scientists, Lynchburg, Virginia, December 7, 1996.

- 1995 with Gary L. Wamsley, “Where’s the Institution? Neo-Institutionalism and Public Management,” Third National Public Management Research Conference, University of Kansas, Lawrence, Kansas, October 5-7, 1995.

“Three Concepts in Public Administration: A Critique from Feminist Theory,” Center for Public Administration and Policy, VPI & SU, Blacksburg, Virginia, March 31, 1995.

- 1994 with Aaron D. Schroeder and Gary L. Wamsley, “Policy Subsystems and the New Physics: Policy Development and Implementation at the Edge of Chaos,” Network Analysis and Innovations in Public Programs Conference, University of Wisconsin - Madison, Madison Wisconsin, September 29 - October 1, 1994.

1994 Attendance and participation at the Fifth Biannual Directions and Implications of Advance Computing Symposium, “Developing and Equitable and Open Information Infrastructure,” Massachusetts Institute of Technology, Cambridge, MA, April 23-24, 1994.

Member:

American Society for Public Administration, 1990 to present.

College of Architecture and Urban Studies, Research Advisory Committee, 1994-1995, VPI & SU.

College of Architecture and Urban Studies, Dean Search Committee, 1996 to 1997, VPI&SU.

Academic Memberships and Honors:

Cunningham Doctoral Fellow of Virginia Polytechnic Institute and State University, 1993 to 1996.

Member: Golden Key National Honor Society, Cleveland State University, 1990
Pi Alpha Alpha, Cleveland State University, 1994

Co-recipient of the Laverne Burchfield Award for the best book and TOPs review essay published in *Public Administration Review* in 1996—presented July, 1997.

Co-recipient of Oral Parks Award presented by the North Carolina Political Science Association for the best faculty conference paper for 1997—“Women and Information Technology: The Future of the Public Space.”

Karen G. Evans