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> *Although we appear on the surface to be in totally different disciplines, we see the world in the same way. We have the same sort of basic philosophical orientation. There is a lot we have in common just personally in ways that wouldn't be obvious to outsiders, but we do see the world the same way and we tend to analyze events in similar ways.*

These words were spoken during an interview I conducted with a cultural anthropologist about the experience of coauthoring a memoir with her spouse. Since its publication, the memoir has been adopted by a number of colleges and universities as a textbook in introductory anthropology classes with the goal of demystifying the experience of fieldwork and underscoring the interpretative role of an anthropologist. Her words

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illustrate how collaborators who share a deeply held worldview can work together effectively despite substantial differences in disciplinary training, approaches to problem solving, and work habits.

The words of this senior academic reflect a conceptualization of a worldview as a "basic philosophical orientation," a way of seeing the world, and a way of analyzing events. Guba and Lincoln (1994) used "inquiry paradigm" to refer to a similar concept but extended the definition by linking it to practical aspects of how research is conducted. They make that link explicit in their definition of an inquiry paradigm as "the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways" (p. 105). Differences in inquiry paradigm are not merely philosophical differences but have "important consequences for the practical conduct of inquiry as well as the interpretation of findings and policy choice" (p. 112). Parker Palmer (1988) made the same point when he observed that there is a link between ways of thinking and ways of acting.

Relatively little empirical research is available about the collaborative process (Baldwin & Austin, 1995) or about the link between the process and the outcomes of interdisciplinary research (Lattuca, 2001). Most of the research points to a positive link between collaboration and faculty productivity, particularly innovation (John-Steiner, 2000). Senior academics who have been engaged in long-term collaborative relationships are more likely than those in short-term relationships to perceive a significant positive impact on their productivity (Creamer, 2001). Understanding more about the collaborative process can impact practice by helping to identify ways to create a collaborative culture that embraces difference and by clarifying how collaboration is associated with productivity and innovation.

Inquiry paradigms and the practical issues associated with them offer a conceptual framework within which to understand collaboration among scholars trained in different academic disciplines. Scholars use the inquiry paradigms identified by Guba and Lincoln (1994)—positivism, postpositivism, critical theory, and contructivisim—in a number of social science disciplines. Because it demonstrates that such collaborations are grounded in a shared worldview, including assumptions about the nature of knowledge and a common culture, inquiry paradigms offer a conceptual basis for understanding interdisciplinary scholarship (Toma, 1997a). Understanding the role of a shared inquiry paradigm provides insight about how collaborators in different disciplines work together effectively.

This paper uses four case studies to test the proposition that there is a link between inquiry paradigm and the process of collaboration. This research illustrates the relationship between assumptions about knowledge and the dynamics of the collaborative process by examining how both disciplinary and interdisciplinary collaborators describe their inquiry aim, their

views about knowledge and how it is created, and practical aspects of collaborative process.

Exploration of inquiry paradigms serves pedagogical as well as scholarly purposes. To understand the work of diverse groups of scholars, academics need to be aware, if not necessarily to practice, multiple epistemologies or ways of knowing (Pallas, 2001). Comparing the assumptions of scholars working from different inquiry paradigms is one way to acquaint academics with an intellectual debate in the research community so fractious that Gage (1989) coined the expression "paradigm wars" to characterize it. Conflict may be ameliorated by recognizing that significant differences in ways of thinking, work habits, and interaction among faculty may stem from differences in epistemological assumptions. What are interpreted as identity-based difference among scholars may, in fact, be grounded in differences in inquiry paradigm (Toma, 1999).

Related Literature

A number of explanations have been offered for differences in collaboration rates between academic fields and subfields or specialties. Collaboration rates vary by the nature of knowledge and disciplinary cultures (Becher, 1987), the nature of the problem studied (Bayer & Smart, 1991), and the extent to which there is consensus about central paradigms in the fields (Braxton & Hargens, 1996). Collaboration is more common when the inquiry aim is to test theory rather than when the inquiry aim is to build theory (Austin & Baldwin, 1991). Rates of collaboration are higher in what Biglan (1973) characterized as hard-pure fields where strong agreement exists among faculty about dominant paradigms than in soft-applied fields where there is considerably less consensus about dominant paradigms. Highly developed paradigms contribute to clarity about the division of labor in a collaborative project (Austin, 2001).

Becher (1987) distinguished disciplinary groupings by the nature of knowledge and by the disciplinary culture. Becher's disciplinary groupings offer an explanatory framework for differences in working practices among academics, including rates of collaboration. Collaboration is common in hard-pure fields where knowledge is cumulative and atomistic, where the culture is gregarious, and where interaction is high because of the pressure to keep abreast of rapid changes in knowledge. The nature of knowledge in hard-pure fields lends itself to a model of collaboration in which there is a clear division of labor based on distinguishable but complementary areas of expertise. Collaboration is less common in soft-pure disciplines, such as history and the humanities, in which scholarship is interpretive, knowledge changes slowly, and the culture is individualistic.

Like Becher's (1987) and Biglan's (1973) clustering of disciplinary groups by assumptions about knowledge, Guba and Lincoln (1994) presented a taxonomy of four inquiry paradigms in the social sciences: positivism, postpositivism, critical theory, and constructivism. These are distinguished by basic beliefs about (a) ontology (the nature of reality), (b) epistemology (the nature of the relationship between the knower and what is to be known), and (c) methodology (the process or approach to creating or discovering knowledge).

According to Guba and Lincoln (1994), practitioners of positivism believe that there is a reality apprehendable by researchers in an objective way. Postpositivists also believe that there is an apprehendable reality but acknowledge that, because of the inevitable subjectivity of the researcher, it can only be imperfectly understood. Critical theorists, on the other hand, view knowledge as socially constructed and reality as being shaped by historical, social, political, and cultural forces, including race and gender. Social change is an overt part of the agenda of critical theorists. Constructivists view knowledge as relative and as constructed by people through dialogue and interaction. Guba and Lincoln provide a detailed explanation of the differences among these inquiry paradigms.

Guba and Lincoln (1994) proposed a direct link between ontological, epistemological, and methodological assumptions of an inquiry paradigm and practical issues related to the conduct of research. Lincoln (1990) was unequivocal about this link when she wrote: "The adoption of a paradigm literally permeates every act even tangentially associated with inquiry, such that any consideration even remotely attached to the inquiry process demands rethinking to bring decisions into line with the worldview embodied in the paradigm itself" (p. 81). Acknowledging some overlap between inquiry paradigms, Guba and Lincoln identified 10 practical issues that are guided by an inquiry paradigm: inquiry aim, the nature of knowledge, knowledge accumulation, goodness or quality criteria, values, ethics, voices, training, accommodation, and hegemony (p. 112).

Toma (1997a, 1997b) extended the discussion of the implications of inquiry paradigms to faculty work and cultures in a number of ways. Finding that the inquiry paradigms proposed by Guba and Lincoln (1994) distinguished the work of legal scholars as well, Toma suggested that their applicability might extend to a wider range of academic discipline (1997a). Toma further speculated that, rather than being discrete categories, as Guba and Lincoln proposed, inquiry paradigms may form a continuum. There may be substantial variations among scholars working from the same inquiry paradigm, and some scholars "may even straddle the line between inquiry paradigms" (Toma, 1997b, p. 38).

Examining the link between collaborators' ontological, epistemological, and methodological assumptions and the dynamics of the collaborative

process contributes to understanding similarities and differences among faculty working in different inquiry paradigms. A shared worldview and a long-term relationship may offer insight about the foundation of collaboration in contexts where collaboration is rare. For example, a shared commitment to a critical paradigm may explain what sustains a collaborative relationship among unlikely partners, such as between a law professor and a women's studies professor. Grounding in a shared inquiry paradigm may also explain collaboration among academics in evolving and interdisciplinary fields, among scholars who are involved in theory building rather than theory testing, and among scholars whose work is highly interpretive and, thus, generally not considered conducive to collaboration.

Method

Sample

Consistent with the principles of qualitative research, I drew my four case studies from a purposive sample. The sampling method can be characterized in Miles and Huberman's (1994) terms as criterion-based and opportunistic. It is criterion-based in that each of the initial contacts in a collaborative pair (a) is a senior faculty member with the rank of associate or full professor, (b) has produced a career total of 21 or more chapters and/or refereed journal articles or five or more books (most had considerably more than this), and (c) has collaborated with a colleague for 10 or more years. The sample is opportunistic in that participants were identified in a number of ways, including by two waves of surveys with follow-ups (Creamer, 2001), familiarity with their work, and suggestions or leads provided by other participants. The sample is not representative of the full range of collaborative patterns because it is limited to long-term collaborators and because it uses a sample that consists largely of senior academics in co-equal relationships.

The sample consists of 31 academics (19 women, 12 men), a total of 19 collaborative pairs. Both members of the pair were interviewed in 12 of 19 cases. For the remaining 7 cases, I did not interview the second partner, either because the initial interviewee did not think it would be productive or because he or she was not available.

Data Collection

I conducted a semi-structured telephone interview with each participant at a prearranged time. The interviews ranged from 45 to 90 minutes in length. I asked participants to focus their comments on a single collaborative relationship rather than speaking about their experiences with collaboration in general.

I asked participants to describe eight aspects of their collaborative relationship: (a) the aim and history of their collaboration, (b) their perception of the contribution of this particular collaboration to their productivity, (c) the division of labor in a typical writing project, (d) similarities and differences in skills and expertise, (e) the main outcomes of the project, (f) how they negotiated substantive differences of opinion, (g) the importance of a personal relationship, and (h) if they felt that the knowledge they produced through collaboration was in any way substantially different from what they could produce alone.

Data Analysis

I initially analyzed the data using the constant comparative method (Strauss & Corbin, 1994), beginning with open coding, expanding to the definition of categories and the elimination of categories that did not prove significant, then creating axial codes that identified connections among categories, and ending with a set of theoretical propositions. Data collection, analysis, and verification occurred simultaneously, using an iterative process that began with the very first interview.

It was not my original intent to use inquiry paradigms as a conceptual framework within which to compare the dynamics of long-term collaborators. Only after I began to interview collaborators who expressed views reflecting alternative inquiry paradigms did it occur to me that differences in epistemological assumptions might explain differences in the processes used by collaborators.

I used a number of strategies to enhance the trustworthiness (Lincoln & Guba, 1985) of the findings: (a) triangulation by using multiple sources of data, including document analysis, (b) prolonged engagement by repeated interviews with some members of the sample, (c) observation of five collaborative pairs, (d) thick description, and (e) member checks. Interviews with the second member in a collaborative pair provided the opportunity to test the accuracy of interpretations from the first interview and to follow up on responses that seemed unclear or contradictory.

Case Study

Case studies can be used for a number of purposes that are consistent with the aims of this paper. They can be used to test a hypothesis or theory (Lincoln & Guba, 1985) or to illustrate a concept (Reinharz, 1992). Critical cases can exemplify a main finding (Miles & Huberman, 1994). Although not sufficient to prove a theory, a case study can be used to invalidate a theory or hypothesis (Stake, 1994).

The cases presented in this paper depict how collaborators who share one of the four inquiry paradigms identified by Guba and Lincoln (1994) described aspects of the collaborative process. The four case studies are suf-

ficient as data points because they illustrate the inquiry paradigms identified by Guba and Lincoln. The case studies can best be described as illustrative without necessarily being representative. This is because the participants I selected to feature in the case studies are those who were the most eloquent about key dimensions of inquiry paradigms. A second reason that the cases are illustrative, rather than representative, is because only a small number of participants in the wider study expressed views that are consistent with either the constructivist or the critical theory inquiry paradigms.

The case studies show how one member of three different collaborative pairs described seven of the practical issues of the conduct of scholarly inquiry identified by Guba and Lincoln (1994): inquiry aim, the nature of knowledge, knowledge accumulation, quality criteria or standards, values, voice, and training. Insufficient data were available to discuss the three remaining practical issues: ethics, accommodation, and hegemony.

Findings

Three of the four collaborative pairs are heterosexual partners (two of the three are married), and the fourth is a team of women collaborators. Members of two of the four pairs hold positions at the same university; the other two are employed in different locations. All of the participants featured in the cases have accumulated substantial publication records—between 25 and 87 published articles and 6 to 16 books.

Additional descriptive information about the participants appears in Table 1. Most relevant to this analysis is that the members of three of the four pairs were trained in different disciplines. There are significant differences in career age in only one of the four cases; therefore, it is the only collaboration of the four that can be accurately characterized as a mentoring relationship.

The collaborators featured in the first case reflect the perspectives of a positivist inquiry paradigm, the second of a postpositivist inquiry paradigm. The third pair of collaborators characterize themselves as critical theorists, and the fourth appeared to adopt the constructivist worldview, at least for purposes of the single project described.

Table 2 captures how participants from each of the inquiry paradigms described aspects of the collaborative process. Similarities in practical aspects that cross inquiry paradigms are shown by items that cross the columns.

The four case studies quote only one member of each collaborative pair. Participants gave remarkably consistent accounts of the collaborative experience. Although I condensed and organized each participant's comments to follow the format of the case study, everything but the introductory and summary sections is quoted directly from the participant.

TABLE 1

CHARACTERISTICS OF THE CASE PARTICIPANTS (N = 8)

Characteristics	*Case 1 Positivists*	*Case 2 Postpositivists*	*Case 3 Critical Theorists*	*Case 4 Constructivists*
Discipline				
Interviewee	economics	psychology	ed policy studies	anthropology
Partner	economics	comparative	ed social psychology	creative writing
Year of terminal degree				
Interviewee	1972	1964	1978	1983
Partner	1986	1992	1980	1976
Coauthored articles[a]	9	7	20	1
Coauthored books[a]	1 in-progress	0	7	1

[a]By the pair.

CASE 1: "GETTING IT RIGHT," POSITIVIST COLLABORATORS

The main interviewee in this case, Sheila, identifies herself as an economic historian. She has collaborated for over ten years with her husband, Cliff, also an economist. They are both full professors in the same department at a Research I university in the Northeast. From among the five books and 50 chapters and articles listed on her curriculum vitae, she coauthored nine journal articles and two grants with Cliff. They are currently collaborating on a book.

A number of Sheila's comments reveal a positivist perspective. For example, she says that knowledge accumulates by "stacking up truth," that differences of opinion are really not possible, and that you work to solve a problem until you "get it right."

The following section quotes Sheila's description of the process she and her partner used on a recently completed project.

Inquiry Aim

Cliff and I work to develop theoretical models to solve complex problems. A lot of economists spend a lot of time thinking about very, very small experiments and the treatment effect of something. They are small questions. They're not the big questions. When I lock myself in my room, I am also trying to figure out what is interesting. Why has there been a long-term change in something? What has happened to the condition of people over

Table 2

Similarities and Differences in Practical Issues in the Collaborative Process by Inquiry Paradigms[1]

Practical Issue	*Case 1 Positivists*	*Case 2 Postpositivists*	*Case 3 Critical Theorists*	*Case 4 Constructivists*
Inquiry aim	To solve complex problems.	Complex problems that really matter.	Politically motivated. A desire to make the world a better place.	Chronicle personal experience.
Nature of knowledge	Determine what type of proof is needed.	Semi-naive realist. Look at a problem from multiple perspectives.	Work with the words and actions of people and place them in a broader theoretical context.	Constructed
Knowledge accumulation	By stacking up truth.	Get dependable information.	Through a dialectical process and consulting data.	
Quality criteria	It is right.	Data must be reliable and valid.	It advances thinking.	Based on disciplinary standards.
Values	Not relevant.	Plays a role in the motivation to collaborate and how the process of collaboration is accomplished.		
Voice (in manuscripts)	Singular	Singular, but framed in different ways for different audiences.	Singular, but negotiated.	Negotiated, multiple.
Training	Different, but not a departure from how trained.	Different; departure from how trained.	Different, but not a departure from how trained.	Different; departure from how trained.

[1]Inquiry paradigms and practical issues are those proposed by Guba and Lincoln (1994).

time in different countries? These are what I think of as bigger, long-term questions. Therefore, they are not questions that have a simple answer.

Nature of Knowledge

What is the nature of proof? It varies. Sometimes it's a point estimate in a standard error, sometimes it's the weight of documentary evidence, sometimes it's a good reading of the literature and a sense of what others have come up with. I have to figure out what guidance to use in this world of chaos. Sometimes it is more than just the numbers; it's what numbers are we looking for and how do we interpret them.

I've never encountered any [differences of opinion] because there sort of aren't any opinions. It all comes down to stacking up proof. There are times when we will say, "I'm suspicious of something" or "I still don't understand the following." Then we will have to figure out what guidance to use. How can I model it? How can I think about it better?

Cliff is the formal, rigorous economist. He wants the quickie bottom line whereas I tell the story, the history of something, like the diffusion of electricity in rural areas. So there are very big differences in the way we work. But at the end of the day, you want all of that wrapped into one. You want to make sure it is right.

Practical Issues

I liken my work to juggling three different balls. There is no way that one thing is done before the others. One of the balls is the story of the sequence of events of what happened in a particular market. One of the balls is the more rigorous model that is the framework. One of the balls is the empirical work. They are all in the air at the same time. Having Cliff as a collaborator means that one of those balls in the air is his because keeping all three in the air at the same time is a real problem.

One of the things that you learn is that the best collaboration is a collaboration between two people, each of whom has somewhat different talents. We have very different modes of working and very different skills. I'm visual; I'm intuitive. Cliff is far more formal and mathematical. There are lots of basic differences in personality and in terms of how our brains function. In terms of skills, we just think differently. In terms of economics, we were educated differently.

We work differently. I insist on doing all of the primary research, all of the sitting in the library because I am the historian and I like reading all of the history and pulling it all out and getting the kernel of the idea. I love locking myself in my office and having a thought and following it through. Then I throw it to him and say, "What do you think of this?"

Cliff often gets annoyed with me because I'll do the empirical work and he'll say, "Let's see your code." I'll say, "I don't have it." Then he'll just say,

"You can't do that." It's as if he is in a scientific laboratory. Everything has to be documented. He has a protocol that he uses. It's the same sort of protocol that you would use if you were a scientist. You write a program and print it out.

Summary of Case 1

This pair's approach to collaboration is consistent with hard-pure fields in which there is strong agreement about paradigms. Each collaborator provides a specialized skill. They have a clear division of labor. Their inquiry aim is ambitious. That they work on theory building rather than theory testing, while reported in the literature as an unusual form of collaboration, is probably not uncommon in hard-pure fields.

While these collaborators share a positivist perspective and a research methodology, they differ in how they were trained, the way they work, their skills, their personalities, and how their brains function. Agreement about inquiry paradigm is evident, even though they approach a problem in different ways. This case does not support the proposition that agreement about inquiry paradigm translates to similarity in the practical aspects of conducting scholarly inquiry.

Case 2: "Fair Witnesses," Postpositivist Collaborators

The interviewed collaborator in this case, Steven, is a psychologist who is a full professor at a Research I university on the West Coast. While he is an active participant in several, ambitious, collaborative endeavors, the interview focused on his collaborative relationship with Paula, who is junior to him, both in age and career position. Paula earned an undergraduate degree in anthropology and a doctoral degree in comparative education. She is now an assistant professor at an institution near Steven's. Both are members of an eight-person interdisciplinary team conducting a large longitudinal study of minority youth. Steven's curriculum vitae lists 87 articles and chapters and four books. He and Paula have coauthored seven articles.

Steven's characterization of himself as a "semi-naive realist" is a clear indication of his affinity with postpositivism. However, he acknowledged the importance of a shared commitment to a common values, which is generally not associated with the postpositivist inquiry paradigm. When asked if postpositivism is an appropriate label for his work, Steven agreed, noting strong reservations about critical theorists and his firm conviction that a researcher should serve as a "fair witness" but not as an advocate.

This is how Steven described different aspects of the collaborative process.

Inquiry Aim

I was very disillusioned with what I saw of research in graduate school. I wanted to work on something really serious. I didn't want to work on some-

thing where people were sword fighting over some minor detail. I decided I wanted to work on big problems that really matter. This leads to big projects. And you can't do big projects by yourself.

I was looking for somebody who felt strongly about disadvantaged kids and communities and wanted to do something about that, but also somebody who would not ignore the data. I wanted somebody who was equally committed to collecting and providing dependable information. I was looking for somebody who wasn't trying to prove a point, but who is trying to know. Getting dependable information takes precedence over anything else.

Nature of Knowledge

I am what you might call a semi-naïve realist. I found generally speaking, if I look out there and say, "Well, there is a real world, that is a reasonable assumption until the philosophers decide." In the meantime, I am just going to assume that there is at least something out there that we can know.

There is something really out there about families, schools, and achievement, and we can really sort of know it. The other thing is that, every time you look at the world from a little bit different angle, you learn something new. If you look at it from the point of view of families, you get one thing. If you look at it from the point of views of teachers, then you learn something else. I am just determined that it just might be possible to put all of those things together and get some take on what is out there. That is what I like to do.

Practical Issues

Therefore, you ought just to begin with multiple points of view. That is the idea of what I call semi-naïve realism. One strategy is to incorporate multiplism in your approach to research. This is to use multiple probes. Don't just probe in one way in trying to discover what is out there. By probes, I mean methodological probes. You could have multiple analytic approaches, multiple data sets, multiple methods, multiple theories, and multiple interpretations. This is one of the advantages of incorporating in a research team diverse points of view.

If you are going to sustain a large enterprise over time, you better have a lot of cooks. It is very, very even-handed, including in writing the papers—even-handed in the sense that there is not a lot of specialization. There is some, but not a lot.

First authors are responsible for initiating a publication and doing the majority of the writing. The kinds of papers Paula would initiate tend to be more anthropological or cultural. Second and third authors typically contribute sections to a manuscript or carry out revisions of the text.

There can be theoretical differences of opinion or varying interpretations of data. We are not going to argue about that. The data are what matter. So what I say is, "Collect your data." You can publish completely

contradictory data, but you have to make sure your data are reliable and valid. It must meet the highest standards. Instead of making these people publish together, let them publish separately. You frame it for different audiences and publish it in journals in different disciplines.

Summary of Case 2

The emphasis on accumulating data and getting dependable information without using it in the service of advocacy that is evident in this case, shows the affinity between positivism and postpositivism. Reflections of postpositivist grounding also appear in Steven's acknowledgement of the strong common bond of a commitment to the minority youth who are members of their longitudinal study, the conviction of the importance of studying a research question from multiple perspectives, and his acknowledgment of the possibility of theoretical differences of opinions.

Like Sheila, who appears in the first case, Steven expressed disillusionment with disciplinary conventions. He is motivated to collaborate in part because it offers him the opportunity to pursue complex problems. Unlike the collaborators in the first case, however, Steven describes how differences in disciplinary training have blurred over time, as reflected in a lack of specialization and a fluid division of labor. This case confirms the proposition that collaborators trained in different academic disciplines can share the same inquiry paradigm and that this inquiry paradigm has a strong impact on practical aspects of the collaborative process.

Case 3: "Making the World a Better Place,"

Critical Theorist Collaborators

In the third case, Ruth, the interviewee, collaborates with Anna, who was trained in a different discipline and is comparable to her in career age and status. Each is a full professor at a different state university in New York. Each self-identifies as a critical theorist. The amount of work they have coauthored is more substantial than that of the participants in any of the other cases. Of the 15 books listed on Ruth's curriculum vita, she coauthored or coedited seven with Anna. Twenty of her 72 journal articles and book chapters are coauthored with this collaborator.

Ruth summarizes different aspects of the collaborative process she and Anna use:

Inquiry Aim

I don't seek out collaboration unless it moves my thinking forward in some way. We are friends, but it is not our friendship that drives our working together. It is the problem that we see as important. I collaborate with

her because I see it as valuable and as something that is much better than I could do individually.

Our work is politically motivated. We're activists. The motivation is not some narrow sectarian one but a real desire to make the world a better place. There is the sense that what we're doing is important.

Nature of Knowledge

The reason she and I started to collaborate to begin with is that simultaneously we were reading each other's work. Our writing styles are very similar. That is what drew me to collaboration to begin with. I felt I could have written some of the stuff I read of hers.

We overlap a great deal. The intellectual and methodological overlap is very strong. We share a worldview and a set of theoretical and practical orientations about the way the world works and how one does things and what is important to do. It is when you have a certain shared set of understandings and then each person brings a piece to the table. She has more strength in the psychological literature, and I have more strength in the economic literature. We respect that those come together.

Practical Issues

We live in different cities. It is not like we see each other all of the time. We don't. We do some work electronically, but not much. When we are brainstorming a new idea or when we are writing something, we spend a fair amount of time on the phone. Most of the work is done around particular manuscripts, which we send back and forth, back and forth—maybe fifteen iterations, until it looks totally different. We spend an absolute fortune on overnight mail.

Whether it is a chapter or a grant proposal, one person takes the lead on everything we do. Someone sits down and does the first draft. Someone has to take responsibility for it. We have a whole bunch of reasons for rotating lead authorship. Most of the time, but not all of the time, [the lead author] is who[ever] comes up with the idea. Our goal is to have it be equal. That's sort of an overriding understanding that we have. The lead is usually the one who is really interested in it—the one who pushed it. But once it got pushed, then it is as much part of her agenda as it is a part of mine.

Over time, we have developed this enormous respect for one another. If Anna says something, even if I don't agree initially, I am willing to listen. Then, if over time, I really think it is not the way to go, then she will listen to me too. I very much respect how she moves forward a set of ideas. Generally, when she is moving an idea in a certain direction, I will not only listen, but I will find it interesting.

Summary of Case 3

Of the four cases presented in this article, this pair of critical theorists most vividly illustrates the propositions that long-term collaborators are likely to share a commitment to the same inquiry paradigm and that this inquiry paradigm is reflected in the process they use when they work together. Ruth and Anna share a value system, worldview, and agenda for social change that motivates their work. They have strong similarities in work habits, writing styles, and ways of thinking. They also have considerable overlap in their skills and expertise, a characteristic that distinguishes them from the collaborators presented in the previous two cases.

Case 4: "Honoring Differing Viewpoints,"

Constructivist Collaborators

The academic interviewed in the fourth case is a cultural anthropologist, Laura, who collaborates with her spouse, Allen, a creative writer of comparable career age and status. Each has earned the rank of full professor. They are employed in different departments at the same Research I university in the Midwest. At the time I interviewed them, she was finishing her fifth and sixth book concurrently and Allen was working on his sixth book. Unlike the collaborators presented in the previous cases, their joint work involves a single project—a joint memoir of the experience they shared as Laura completed fieldwork for her dissertation. I describe other aspects of Laura and Allen's collaboration in a full-length case study in *Working Equal: Academic Couples as Collaborators.*

A constructivist perspective is evident in Laura's description of the goal of their jointly authored memoir project. Their purpose was to make meaning and to interpret behavior and actions in a wider social context. Like Ruth, the critical theorist in Case 3, Laura and Allen ground their work in both a strong personal relationship and a shared worldview and value system, including a commitment to egalitarianism. Similarly, they negotiated meaning through a lengthy process of dialectical exchange that occurred both through face-to-face discussion and through passing the manuscript back and forth. The presentation of two distinct voices in the final document is an indication of a constructivist approach and clearly distinguishes it from any of the preceding cases. Laura's description makes it clear how hard this collaborative pair had to struggle to resolve disciplinary differences.

Inquiry Aim

We share a deep interest in understanding and analyzing people. We both like to think about people as psychological entities and what makes them

tick. We both like to analyze relationships and, of course, that is one of the things one does doing the kind of fieldwork I did. This book is really about how fieldwork is far more difficult and challenging than anybody is willing to confess as an anthropologist. It wasn't that he necessarily brought the knowledge of the culture or the history of the geography of the area or anything like that, but that ability to analyze relationships was there.

Nature of Knowledge

Although we appear on the surface to be in totally different disciplines, we see the world the same way. We have the same sort of basic philosophical orientation. There is a lot we have in common just personally in ways that wouldn't have been obvious to outsiders, but we do see the world in the same way and we tend to analyze events in similar ways.

Practical Issues

We originally wrote it [the memoir] without thinking, just following the typical, coauthored, collaborative style of either no voice or a merged voice. It just didn't work. We initially tried to write it in the more traditional way of first person plural and we found that each one of us was being submerged. When we would say, "we did this" and "we did that," one of us felt that, in fact, that wasn't speaking accurately for both of us.

We maintained distinct voices in the book. We authored it in alternating first-person singular sections. Each part of the book is authored by one of us, and it is explicitly stated who is speaking. It was our intent to be distinct, although we did want to edit each other enough to make the book seem smooth.

The last month or two was spent intensively revising and we were revising as we went along. We both had pretty high standards for writing. I had really quite high standards [for writing] for social sciences, but it was only through teaming up with him to write this book that I realized that, although by social science standards, my writing might be considered good, by his standards it was really pretty crappy. The conflicts actually emerged semantically. A lot of the cutting that he suggested, I resisted. He wanted me to cut details that he felt were extraneous. If we were trying to build this scene with one point in mind, he would want me to include one example as emblematic of, let's say, 15 to prove my point. As a social scientist, my urge was, if not to include 15, at least four or five to really mount up a lot of evidence.

Summary of Case 4

The members of this collaborative pair, Laura and Allen, brought different skills, training, and views about the nature of knowledge and how it accumulates to their collaborative venture. They also differed substantially

in their work habits and patterns and in how they interpreted the data. Yet they share, as underscored by the quotation that serves as an epigraph for article, a worldview that has powerful implications for both their personal and professional lives. They adopted a similar inquiry paradigm for the purposes of writing the joint memoir that was a departure for both of them from their customary disciplinary practices. To make meaning of their experience and to communicate it in a way that would be effective with the targeted audiences, each had to experiment with an unfamiliar inquiry paradigm. Like the collaborators in the first case, the collaborators in this case approached their work in very different ways.

Discussion

There are clear differences among the collaborators from the four different inquiry paradigms about their attitudes toward the nature of knowledge and how it accumulates that are consistent with those proposed by Guba and Lincoln (1994). The positivist presented in the first case study aspires to "get it right" by "stacking up the truth." The postpositivist is "just going to assume that there is at least something out there we can know" and believes in the advantage of looking at a complex phenomenon from multiple angles. The critical theorist creates knowledge by taking the words and actions of people and interpreting them through a theoretical lens. The constructivist presented in the last case makes meaning while referring to sources of data, such as ethnographic field notes.

Confirming Toma's (1997a) hypothesis, however, distinct differences among collaborators who share the same inquiry paradigm are apparent in two of the four cases. The economist in first case, for example, described in detail what appears to be significant differences with her collaborative partner in both the ways they think and in approaches to creating knowledge. Despite a grounding in a deeply shared worldview, the constructivist in the final case study brought different training, views about the nature of how knowledge is created, and quality standards to the project she undertook with her collaborator. While acknowledging that it created conflict at times, the participants did not consider these differences as detrimental to the outcomes of the projects.

In the context of the proposition being tested in this paper, the critical issue about the differences between the collaborators presented is not about personality differences, differences in knowledge or expertise, or differences of opinion unless these differences mirror fundamentally different epistemological, ontological, and/or methodological views. The critical indicators of differences between collaborators who share similar inquiry paradigms is in the way they think, the way they see the world, or the way that they analyze events. Differences between collaborators who share the

same inquiry paradigm on these aspects, as is most apparent in the first and last case studies, suggest considerable variation among faculty who share the same inquiry paradigm.

Conclusions

The differences in views about the nature of knowledge and how it accumulates that are evident among the participants did not always translate to the expected differences in practical aspects of the collaborative process. The strategies these long-term collaborators employed were refined over time, often through trial and error, and are considerably more idiosyncratic than their views about the nature of knowledge.

Studying long-term collaborators offers insight into a number of aspects of faculty life and how it changes over time, including how career-equal academics work together effectively. The collaborators presented in the case studies suggest that collaborative cultures can be created through strong personal relationships, a commitment to a common inquiry goal, respect for each other's knowledge or expertise, and willingness to work through differences of opinion. The variability among the dynamics of the collaborative process used by long-term collaborators indicates that there are multiple models for effective collaboration.

Examining the characteristics of the collaborative process associated with innovation and productivity is a promising area for future research. The efficiencies gained by a clear division of labor, generally paralleled by distinct but overlapping skills and expertise, may be not only the most common model of collaboration but also the one most clearly tied to productivity, as measured by quantity of publications. It is my hypothesis, however, that the form of collaboration most likely to be associated with innovation is long-term collaboration characterized by genuine engagement with differences of opinion stemming from what may seem, to an outsider, to be slight differences in knowledge or expertise.

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