

philologia

The Virginia Tech Undergraduate Research Journal
of Liberal Arts and Human Sciences

Volume III : 2011

The logo for Philologia features the word "philologia" in a light blue, lowercase, serif font. Below it, the tagline "scholarship; love of learning" is written in a smaller, italicized, blue sans-serif font. Underneath the tagline, the phonetic transcription "fi-lolə-jeeə" is displayed in a light blue, lowercase, sans-serif font. The entire logo is set against a light blue circular background with a subtle gradient.

philologia
scholarship; love of learning
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Letter from the Editors

On behalf of the Editorial Board, we are proud to present to you Volume III of *Philologia*, the student-run undergraduate research journal of Virginia Tech's College of Liberal Arts and Human Sciences. In this third installment, we have been able to maintain a tradition of highlighting many of the diverse and exciting disciplines within our college as the journal continues to expand and grow.

Volume III features work in areas such as communication, creative writing, history, linguistics, music, philosophy, political science, and apparel design. An impressive and diverse range of work from Virginia Tech researchers allowed us to select excellent works for publication from a collection of exciting and stimulating submissions.

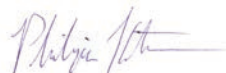
This publication would not be possible without the thoughtful guidance of our advisor, Dr. Diana Ridgwell. Her care for the editors and the journal is what allows this project to flourish every year. Faculty reviewers have graciously provided their academic expertise to our undergraduate works, which enables us to publish more finely tuned academic pieces. Many thanks are also owed to our faculty advisors, who guide us throughout the year and help promote the journal within the university, and for the kind support of Dean Sue Ott Rowlands for the journal. Finally, we want to congratulate our editorial and managing staff, which has been crucial in every step of the process, from reviewing and selecting submissions for publication to determining *Philologia's* design and layout.

Philologia has excellent prospects for the future, and we look forward to seeing how it continues to advance undergraduate research in the liberal arts and human sciences in the upcoming years. We hope that you will enjoy Volume III as much as we enjoyed putting it together.

Best Regards,



Logan Vidal
Editor-in-Chief



Philipp Kottaba
Managing Editor

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The journal will establish an open forum for the exchange of ideas discovered in undergraduate research and scholastic endeavors in the College of Liberal Arts and Human Sciences. It will aid in reinforcing Virginia Tech's and the College of Liberal Arts and Human Science's strategic plan to support undergraduate research.

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Do you dream of writing a best-seller? Or being a legislator? Maybe you'd like to anchor the evening news, work in the fashion industry, or serve as a school administrator. Whether your dream is to be a diplomat or a pilot, Virginia Tech's College of Liberal Arts and Human Sciences can prepare you to realize it.

Hot specialties may come and go, but a broad education lasts a lifetime. It is important to master not only job skills, but also the intellectual skills a liberal arts education develops. The College of Liberal Arts and Human Sciences encourages students to apply knowledge from one field to another and to think creatively. Our alumni are making their marks in the worlds of business, industry, entertainment, education, government, and research. You can join them. Explore your options in the College of Liberal Arts and Human Sciences.

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From the College

It is my privilege to again introduce *Philologia*, the undergraduate research journal of the College of Liberal Arts and Human Sciences at Virginia Tech. The 2011 issue maintains the tradition of excellence established in the first two volumes and reflects the lasting commitment in the College to the undergraduate research experience.



The contents of this year's journal demonstrate how the scholarly, artistic, and imaginative horizons of our students continue to grow. The Research Articles explore the diverse topics of "alimentary alienation" in contemporary food writing, political evolution in Senegal, names ascribed to mathematical concepts, and the history of a Kentucky narcotic addiction treatment center. Creative pursuits – historical wedding dress design, the technologically based but musically ingenious Linux Laptop Orchestra, the composition of a full-length novel – as well as interdisciplinary interests - phenomenological architectural theory meets culture, literature, and politics in the study of a 100-year-old estate in Portugal – are highlighted in the Featured Articles. The three works of Creative Scholarship share a common thread as the protagonist in each contends with a remarkable, traumatic experience: losing a brother, taking captives – and taking lives – and discovering the edge of the world. The contributions to this year's volume transport us to distant times and places, confront us with the here and now, and challenge us to consider with the future holds.

The College is delighted to be able to provide support for the publication of *Philologia*. The journal continues to benefit from outstanding student leadership and authorship, exemplary mentoring from Diana Ridgwell, Director of the Undergraduate Research Institute in our College, and admirable guidance from the Faculty Advisors and Faculty Reviewers. I commend Logan Vidal, Editor in Chief of Volume III, for the results he and his board have achieved. It is my pleasure to present to you for your enjoyment the scholarly and creativity accomplishments of students in the College of Liberal Arts and Human Sciences.

Sue Ott Rowlands
Dean, College of Liberal Arts and Human Sciences



In Volume I of *Philologia*, we were just getting started and learning the ins and outs of publishing, editing, and design. Trying to find an appropriate way to highlight the many fields of study in the College of Liberal Arts and Human Sciences at Virginia Tech was a challenge, but it was a great first volume. In our second volume, we adopted a more modern approach, for example with the use of white space and graphics to draw attention to the various forms of scholarship in the journal.

Now, in Volume III, the editors have put together an even more professional and polished publication, one geared toward maximizing space while preserving the creative edge that makes *Philologia* stand out amongst other undergraduate research journals.

It has been an honor to watch the journal and its editors change and grow with each new year. A unique feature of this year's staff was the exceptional partnership between the editor-in-chief, Logan Vidal, and the managing editor, Philipp Kotlaba. They truly joined forces and addressed the work as a team, recognizing each other's strengths and creating a synergy that motivated everyone else. Our layout editor, Kate O'Connor, too, continues to amaze me with her talents and dedication to making each journal unique and outstanding.

This has been yet another great year with an exceptional editorial staff, faculty board, and wonderful continued support from the College's administration. *Philologia*, a product of the strong scholarship and teaching in our college, continues to be a point of distinction between our college and other similar programs across the nation. I cannot wait to welcome the new group of students that will see this process through to another year.

Diana M. Ridgwell
Director, CLAHS Undergraduate Research Institute

Research

is formalized curiosity.

It is poking

and prying

with a purpose. *

poke around

URi

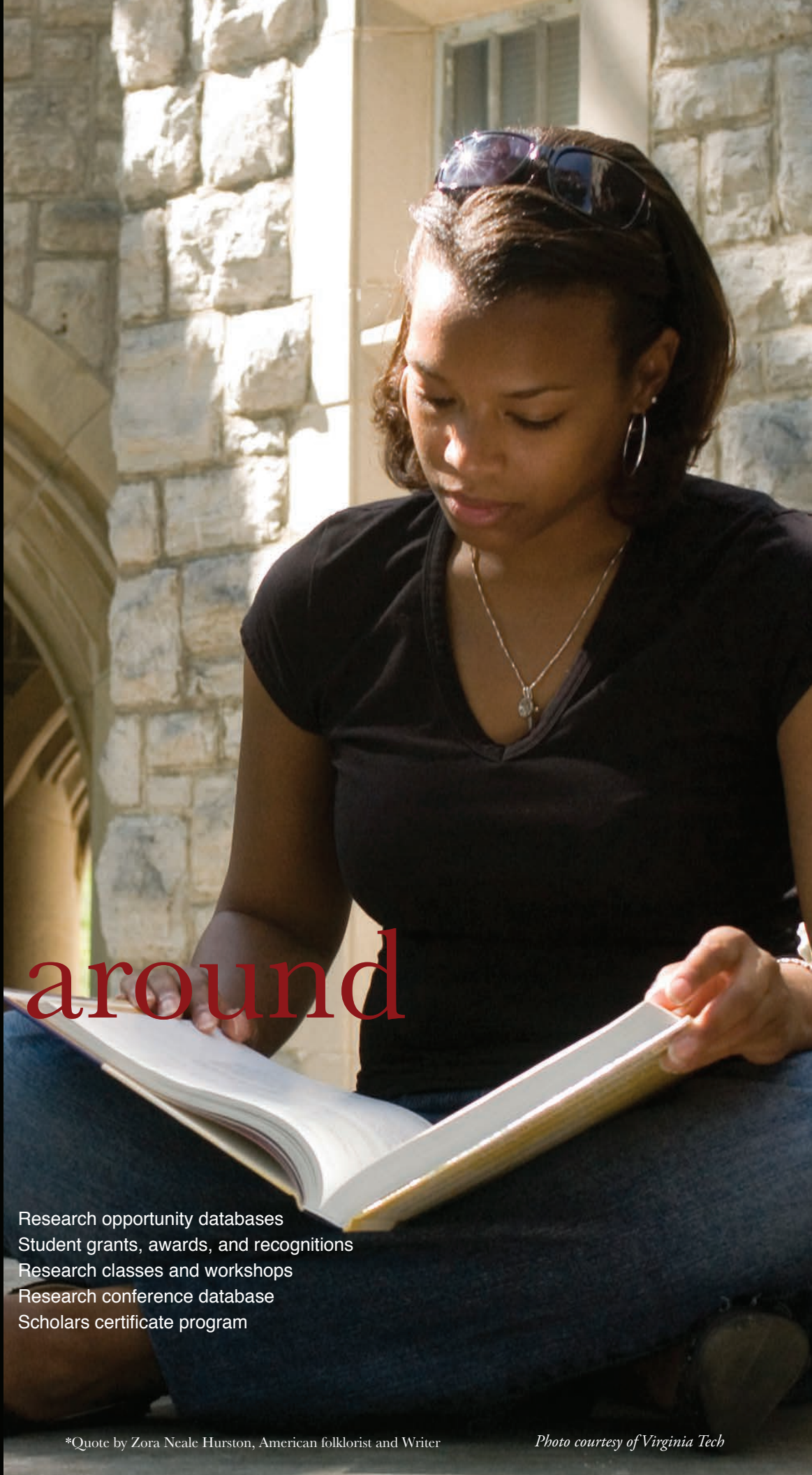
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*Quote by Zora Neale Hurston, American folklorist and Writer

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Alienation and Food

A study of contemporary food writing

by Graham Downey

This paper will attempt to show how the problem of alienation is described by authors Carlo Petrini, Brian Halweil, Novella Carpenter, and Barbara Kingsolver. This paper will argue that an understanding of alienation is required in order to fully understand contemporary food writing. Each of these books suggests some alternative to industrial food; alienation provides a meaningful way of analyzing these proposals.

As it is essential to human survival, food is an important subject of study. Primarily, food supplies many of the nutrients and calories that sustain the human body. Food is a link with nature because it is a product of the earth and the production of food is a direct interaction with nature. Therefore the manner in which a society produces and consumes food has powerful implications for ecology, and the ubiquitous nature of food makes it a potential indicator of broader socio-economic conditions.

Some contemporary writers have identified serious issues related to the production and consumption of food such as deforestation, pollution, emissions, foodborne

illness, antibiotic use, animal treatment, malnutrition, obesity, diabetes, cancer, and loss of community. Much of the blame is placed on an industrial form of agriculture, as well as a separation between consumers and farmers. In doing so, contemporary food writers use language similar to that of Karl Marx in his description of alienation.

Marx held that workers subjected to a system of industrial wage labor are separated from important elements of life; in more radical terms, alienation describes a condition in which workers are de-humanized. Karl Marx describes four forms of alienation that arise from wage labor: including alienation from the product of labor, alienation from the activity of labor, alienation from the species being, and alienation from each other.

Wage labor is essentially the sale of time (labor-time) for money (wages). Sales are transfers of ownership, so when the workers sell their labor-time, they explicitly agree to labor but not own their labor-time or its products. Marx's foundational work on alienation was specifically meant to describe effects of wage labor on factory workers, but as a critique of industrialization the concept can be used to analyze other industrialized practices like agriculture and food. This paper's discussion of food will

attempt to explore a view of alienation as a lack of meaningful ownership, and the inclusion of a fifth form of alienation from the earth.

In Alienation from the product of labor, "[t]he worker puts his life into the object; but now his life no longer belongs to him but to the object" (Marx 72). For Marx, the worker materially invests a portion of his self in the product, and when the product is inevitably taken away the worker has lost that portion of their life. In Bertrand Ollman's understanding of Marx, these alienated products create a condition of oppression. For the wage laborer, "[h]is products face him as something given, both as to amount and form. The resulting interaction between the worker and his product, therefore, becomes one of total adjustment on the part of the former to the requirements (and hence the demands) of the latter" (Ollman 146). The product becomes the subject and the wage-laborer the object meaning the laborer becomes a tool of the products creation. The product's needs are a priority over the needs of the laborer. This sort of alienation leads to conditions like child labor where developmental needs are ignored because children's hands are smaller or they incur lower costs. Food producers are alienated from the product of their labor when they are exposed to dangerous chemicals for the purposing of generating high yields.

Ollman's description of alienation from the product closely parallels the dominant mode of food consumption. Food products are often presented in grocery stores and fast food restaurants as fully made and ready to eat. Since these pre-made products are often high in fats, refined sugars, and salt, they make unusual demands on the body, which is then forced to adjust to the food. For instance, Type II diabetes is caused by repeated spikes in blood sugar, which wears down the body's ability to produce insulin. This form of diabetes is essentially an adjustment in the body to pressure from food; when it is caused by pre-made foods like soda, it is a physical manifestation of alienation from the product.

Alienation from the activity of labor describes the wage-laborer's loss of ownership in his personal labor. "The worker's own physical and mental energy, his personal life or what is life other than activity – as an activity which is turned against him, neither depends on nor belongs to him. Here we have self-estrangement" (Marx 75). In order to labor the worker must produce and exert energy, but in alienated labor this energy has been traded away for wages. For Marx, this means that wages turn a material and internal element of the body into an external commodity. The owner of that labor directs it and therefore directs the body of the laborer, in this way the labor comes to control the laborer. The wage-laborer may be able to change jobs, but as long as he agrees to sell his labor time he



*Organized plots at Virginia Tech's modern industrialized farm.
Photo courtesy of Virginia Tech / John McCormick*

has lost ownership over his self. This is a loss of self and not just time or energy because labor is the human creative force; it is through labor that people have historically defined themselves and shaped the material world.

This exists for food in two ways. Firstly, industrial farm workers are directly alienated from their labor when they are paid in wages. Secondly, the massive consolidations of industrial agriculture have resulted in both fewer farms and farmers. Most people are alienated from the activity of food production because most people no longer labor in order to produce food.

In alienation from the species being “[l]ife-activity, productive life itself, appears to man merely as a means of satisfying a need—the need to maintain the physical existence. Yet the productive life is the life of the species” (Marx 75-76). Wage labor reduces the laborer to a condition of just working to avoid a negative (death or hunger) instead of working towards a positive (the species being). The species being can be described as a higher importance that one’s work adds value to some larger human pursuit or has an impact on the larger social world.

Agriculture has the stated goal of feeding people, but often laborers involved in industrial agriculture cannot reasonably see the connection between their labor and feeding others. The slaughterhouse worker who knocks out the cows does not, by virtue of his work, see the whole chain of life and death that produces the cow or the edible meat. When the rancher has no involvement with the slaughterhouse and preparation facilities (beyond the act of sale) then he too has lost the connection to producing food. This is alienation from the species being. It is perhaps possible for these laborers to educate themselves about the process or otherwise know abstractly how their labor is connected to producing food, but the form of wage labor obscures it. The wage-laborer, almost by definition, works for the wage; and so the act of laboring becomes a barrier between labor and the wider social enterprise of that labor.

For the consumer of food, this alienation is also manifested as a disconnection from the whole process of production. The grocery store physically separates the eater from the farmer; complicated packaging and the chemical transformation of food products obscure the productive work that went into them. The consumers are put in a limited position by the presentation of food choices such that they cease to be involved in the social impact of their consumption is, and therefore cannot even begin to care. This is alienation from the species-being.

The fourth and last form, alienation from each other, arises from the first three, “[a]n immediate consequence of the fact

that man is estranged from the product of his labour, from his life-activity, from his species being is the estrangement of man from man” (Marx 77). Wage-laborers are not united in a common project and they have become alienated from themselves, thereby losing the need and capacity to connect with their peers.

The metabolic rift is a term used by John Bellamy Foster to describe an alienation from the earth. For Foster, metabolism describes the whole chain of energy extracted by agriculture from the land, passing through the body as food, and into production as energy. However, “... an ‘irreparable rift’ had emerged in this metabolism as a result of capitalist relations of production and the antagonistic separation of town and country” (Foster 141). Industrialization led to increasing urban populations, thereby physically separating many people from the rural practice of agriculture.

Involvement in agriculture is important because it uniquely reveals the dependence of people on the earth; it is a form of labor in which people exert some influence over their material surroundings. “Human beings, according to this conception, produce their own historical relation to nature in large part by producing their means of subsistence. Nature thus takes on practical meaning for humanity as a result of life-activity, the production of the means of life” (Foster 73). Agriculture is this production of life in the medium of the earth. Therefore the metabolic rift describes a condition in which most people cease to labor in the land they own; people may play or live on the land but they have little interaction with the earth. In this way alienation from the earth describes a lack of meaningful ownership.

Beyond agriculture, the metabolic rift obscures the dependence of production on natural resources and the natural limits of those resources. The metabolic rift sets up ecological disaster because it removes people from nature and destroys practical ecological knowledge.

Slow Food is concerned about food as both an ecological and consumptive issue. Bio-diversity, for instance, is a significant concern because more plant variety promotes natural disease and pest resistance and provides a wider variety of tastes to experience. Slow Food suggests that consumers can promote the right kind of farming and cooking; in this way Petrini advocates for food artisans at the level of agriculture and cuisine. Italian activist Carlo Petrini helped to establish the Slow Food movement as a response to the international homogenization of food (as epitomized by McDonalds). The movement is primarily interested in a more careful and appreciative consump-

tion and production of food; Petrini calls this “gastronomy”.

The Local Foods movement is an attempt to create an agricultural system in which food is produced and processed in close proximity to consumers. Eating locally is largely an attempt to address the environmental impact of eating; by sourcing food locally some consumers hope to use fewer scarce oil resources and limit the carbon impact of transportation. Local food advocates, like Brian Halweil, also point to a lack of connection between food consumers and producers inherent in a separation of hundreds (or thousands) of miles.

In the book *Food City*, Novella Carpenter describes her personal attempts at urban gardening in Oakland, CA. Her project has three explicit goals. Firstly, she grows on her own to produce quality food at a lower price. Secondly, she wants to connect to her parents’ attempt to farm and therefore connect to her heritage. Thirdly, she wants to gain an intimate knowledge of food production; in particular, she wants to experience the moral pressures of raising and killing animals.

Barbara Kingsolver also makes an attempt to personally engage in food production; in *Animal, Vegetable, Miracle* Kingsolver describes the experience of moving her family to rural Virginia and attempting to produce as much of their food as possible.

Carlo Petrini’s gastronomy is described in opposition to consumers’ alienation from the product and activity.

...it is precisely the gastronome’s skills - which range from a finely tuned sense of taste (a skill that has deep implications for our odorless and tasteless world) to knowledge of food production - that make him care very much about the world around him, make him feel that he is in a sense a co-producer of food, a participant in a shared destiny. (Petrini 1).

Taste connects the consumer to the food; the act of tasting is physical engagement with the material of the food. In Petrini’s “odorless and tasteless world” people cease to engage with food; so if the consumers lack taste, they are alienated from the product of food. By claiming that gastronomes are participants in food production, Petrini implies a lack of similar participation in non-gastronomes. The lack of engagement in food production is alienation from the activity of labor, so Petrini has described non-gastronomes as alienated.

Slow Food Nation identifies alienation from the species being in its concern for providing equal and widespread access to healthy food; “... the gastronome demands a quality which is recognizable to all and which can improve our lives - the lives of

all of us, for he cannot exist in isolation” (Petrini 3). Slow Food embraces the larger social impacts of eating. Consumptive food choices impact what is produced, so better consumptive decisions can help producers make better productive decisions.

As articulated by Brian Halweil, the Local Foods movement responds to alienation from the product of labor by expressing concern for the effects of industrial agricultural products. “The transcontinental lettuce wowed supermarket shoppers with its unexpected appearance and novelty. But it also eliminated local lettuce growers, rendered salads bland and uninteresting, and sucked up more fossil fuels than the planet can afford” (Halweil 40). This “transcontinental lettuce” has confronted local producers and won; the product does not need their labor and therefore the farmer must adjust to the new conditions. The consumer of foods has to adjust to bland salads because the need for a product that can travel long distances outweighs the consumers need for taste. (This also relates back to the discussion of taste above). In this way, Halweil has almost explicitly described alienation from the product for both producers and consumers. Additionally, the overuse of fossil fuels is a symptom of the metabolic rift: the total amount of energy used is hidden from both producers and consumers.

Local food activists worry that many people have never been on a farm; and are completely unaware of the methods of production, in essence, that the whole of the activity of producing food is physically removed from most lives.

Farmers are professionals, with extensive knowledge of their local soils, weather, native plants, sources of fertilizer or mulch, native pollinators, ecology, and community. In a world where the land is no longer managed by such professionals, but is instead managed by distant corporate bureaucracies interested in extracting maximum output at minimum cost, what kind of food will we have, and at what price? (Halweil 67).

Farmers have been replaced by people without holistic knowledge of production and subject to the control of a corporation; this is, in other words, alienation from the activity of labor. This paragraph also suggests that alienated farm labor will produce poor food, so alienation in production may impact the consumer and create an antagonism between producers and consumers. This represents the rural and urban split (metabolic rift) as well as alienation from each other.

Local food producers are meant to combat this alienation and metabolic rift by creating community. Local farming means that local land will be owned in a meaningful way (labored on). The Local Foods movement also identifies studies that

suggest buying local food address alienation from each other by creating connections between fellow shoppers and between the farmer and consumer. Halweil expresses a further concern for alienation from the earth among those in cities, “For urbanities in particular, local food might also provide one of the few remaining connections to nature, rural ways, rural people, and an awareness of what is happening to our food supply” (Halweil 162). So, instead of asking everyone to be a farmer, local foods hopes to make it easier for people to connect with farmers and know about the conditions on farms.

Alienation from the activity of labor can be seen in Novella Carpenter’s lack of experience with the activity of killing animals and, more basically, with growing food for sustenance. “‘And I want to feel close to my food,’ I said, ‘to see what it means to raise it—and kill it’” (Carpenter 224). Much of her project is an attempt to address this deficiency of knowledge. She is continuously learning new cooking and gardening methods.

In *Food City*, Carpenter makes the connection between ownership and alienation from the activity of labor. When she is not engaged in meaningful labor with the land, her natural surroundings go unnoticed. In contrast, her environment seems to become less dangerous as she farms; the teenagers she once saw as gangsters become patrons and contributors. This marriage of meaning and interaction is precisely the opposite of alienation. The acts of producing her own food, becoming intimate with the soil, and killing her own animals addresses alienation from the product of her labor.

But in leaving it, I would take it with me, too. Not just in my body, which had ingested its riches and grown strong in the working of the farm, but in my spirit—all the things I had learned, my singing heart, my smile lines, my aching bones. I hadn’t truly owned any of this place. It had owned me (Carpenter 267).

In personally working her farm she felt a much deeper sense of connection, or ownership, to a piece of land than the person who legally owned it (a potential developer).

Alienation from the species being is represented by Carpenter’s attempts to connect to heritage, the degree to which she wants to share with her neighbors, and her concern for the impacts of modern food production on the poor. “This, I wanted to tell him, is your birthright, too. Your grandmother, like mine, grew her own tomatoes, killed her own chickens, and felt a true connection to her food. Just because we live in the city, we don’t have to give that up” (Carpenter 24). In this case alienation from the species being is represented as a disconnection from

the historic human engagement with food production. Additionally, her farm is explicitly meant to feed others and improve the conditions in her community.

Carpenter thinks urban agriculture is superior (to Local Foods even) because it is necessarily social. “To be a farmer, Willow pointed out, was to share. Unlike a rural farm, a secret place where only a few lucky people may visit, an urban farm makes what seems impossible possible” (Carpenter 62). The urban farm is embedded directly in the community, and by growing food in the city she directly addresses the rural-urban split. In this, Carpenter also emphasizes practical knowledge; people may be able to know what happens on farms, but it is only in urban gardening that urban people can actually experience the process in a material and regular way.

Barbara Kingsolver’s food experience is somewhere in between the Local Foods’ and Carpenter’s approach. Her plan was to “take a food sabbatical, getting our hands dirty in some of the actual dying arts of food production” (Kingsolver 21-22). This meant her family would spend at least one year attempting to live as much as possible on food they had personally grown. Kingsolver makes a brief attempt to outline the powerful economic forces that shape agriculture and even discusses alienation explicitly.

In the case of modern food, our single-bolt job has become the boring act of poking the thing in our mouths, with no feeling for any other stage in the process. It’s a pretty obvious consequence that one should care little about the product. When I ponder the question of why Americans eat so much bad food on purpose, this is my best guess: alimentary alienation (Kingsolver 131).

This “alimentary alienation” specifically describes a consumptive alienation from the product: poking a pre-made thing into our mouths without engagement. In her analysis bad food is caused by alienation, or, perhaps, alienation makes people care less and the lack of care causes them to eat poorly.

Kingsolver also describes the metabolic rift as source of the current food system; in her words “The psychic divide between rural and urban people is surely a part of the problem” (Kingsolver 208). For Foster, the metabolic rift is a physical separation, but a “psychic divide” may be the result of a physical one. Furthermore, the move from urban Tucson to rural Virginia represents an attempt to deal with the physical element.

Kingsolver does not seem to want to ask other’s to make the same leaps her family has “[i]t’s not at all necessary to live on

a food-producing farm to participate in this culture. But it is necessary to know such farms exist, understand something about what they do, and consider oneself basically in their court” (Kingsolver 21). But someone can be both alienated and know everything about the process of production. The wage-labor autoworker probably knows about the other parts of car-making because he is in the factory helping to produce the car, but at the end of the workday he takes no part in the ownership of that car.

Attempts to spread knowledge and encourage education are not sufficient means of de-alienation, in one part because alienation serves as a limit on knowledge and, in another because a loss of knowledge is only a symptom of alienation. The central problem of *Animal, Vegetable, Miracle* is that it recognizes the powerful forces that cause people to care less, but the novel’s prescription is to just try and care more. The actions Kingsolver describes may be interesting attempts to address alienation, but the novel itself (as an educational tool) does not help de-alienate anyone else.

Urban gardening may not be a sufficient solution if it remains small scale. Carpenter really lives off her farm only for a month, and even then it is incredibly difficult to do so. Alienation is never eliminated in *Food City*: part-time jobs create the income she needs to start and maintain the farm and she remains trapped in the wage-labor system. She even worries that her contributions to the community are insufficient. Acts of charity may be too infrequent or small, but as a movement urban farming may provide a meaningful and positive force.

By providing for the local poor and generously sharing the products of her garden, Novella Carpenter helps to develop a sense of greater purpose. She even develops non-wage work with a local chef. In this way Carpenter addresses the causes of alienation in wage labor and in the physical separation from the earth.

Local Foods may not adequately address the urban rural split and it suggests that a more personal economic interaction will result in less alienation. However, local farms are likely to remain rural and separate from their urban customers. Localizing food production might be a distraction from the real issues: distance may cause some problems, but alienation can exist even in close proximity to production. Local Foods is also problematic when it attempts to return to an overly ideal rural life. According to James McWilliams, a critic of Local Foods, “[n]o matter how ‘primitive’ or ‘pure’ the operation may seem, every farm on some level is a factory” (McWilliams 67). This may be interpreted as a claim that farming is always alienating; that by attempting to transform nature to our advantage

one necessarily attempts to control and dominate it. In other words: agriculture necessarily involves an antagonism between farmers and farms.

However, if local food writing is overly optimistic about a return to pre-industrial agriculture, then McWilliams may be overly pessimistic. In nearly all of humankind’s activities humans interact with and change nature. Non-human animals change their physical environment to their advantage when they eat or build nests or travel. The metabolic rift is not a problem because production is involved, but rather because of the form of the production. McWilliams is right in pointing out that farming is focused on transforming our environment for productive gain. However, it is not necessary for that impact to be destructive. If alienation from the earth is caused in a lack of meaningful labor then farming will be a necessary part of any de-alienation.

Slow Food perhaps assumes too much about the capacity of individuals to make system-wide changes through consumptive choices. Furthermore, taste is not the worst part of industrial food; food processors are adept at altering the taste of pre-made food products, and those products are not alienating just because they taste bad. Petrini also seems to make the same mistake as Kingsolver by limiting his appeal for change to the realm of education, but in the case of Slow Food this seems to be a more material education. Gastronomy does require a physical engagement with food so perhaps this helps address alienation more directly. Slow Food may be successful in dealing with alienation because it can elevate food producers above the wage labor system by treating them as special producers.

A wide range of food issues can be seen as symptoms of alienation, so how can alienation be significantly addressed? Getting rid of wage labor seems like an obvious step, but is perhaps insufficient for problems like alienation from the earth. The solution must embrace labor’s powerful effect on both the self and the world. To be consistent with Marx the solution cannot remain at the level of advocacy or thought. This paper is only meant to draw attention to alienation in the realm of food and perhaps re-frame the discussion of food in a more productive light. 🌀

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Foundations of Political Stability in Senegal

Dynamic Leadership and Unified-Party Rule: 1958-1980

by Kathryn Steele

This research paper explores the evolution of the Senegalese government immediately after independence and the various factors contributing to its remarkable stability. It begins with a brief look at Senegal's history, both pre-colonial and colonial. The research then discusses the foundations of the Senegalese government structure and party system from just before independence to 1978. The highlighted elements of the story are the role of political parties and single-party dominance, Senghor's platform based on African socialism and *négritude*, and the formation and failure of the Mali Federation. This work also features party building, social groups that influence politics, the urban-rural cleavage, and some constitutional development. The focus of the research is on Léopold Sédar Senghor, the key figure in the stable governmental establishment in Senegal. It explores his relations with other key figures including Lamine Guèye, the facilitator of socialism's rise in Senegal and a major party leader, and Mamadou Dia, once a friend of Senghor's and his Prime Minister, who attempted a nonviolent coup; he was foiled and jailed in 1962. The various clans of Senegal (based on heredity) and the Islamic Brotherhoods, powerful religious organizations that have much sway over their members' political attitudes, also play an important role. This paper concludes with an exploration of Senghor's dynamic leadership as a foundation for political stability in Senegal, focusing on two major events: the disintegration of the extremely short-lived Mali Federation and the resulting independence of Senegal, and Dia's attempted coup and resulting arrest. The constitution was amended after Dia's jailing in 1962 to remove the post of prime minister, leaving the president as the sole head of government, and increasing Senghor's power and influence. The remainder of the research after the failed coup consists of exploring the ways in which Senghor made his party completely dominant and his role and contributions as president.

Introduction

The pre-colonial history of Senegal, dominated by three primary kingdoms, indicates a stable power balance that, despite conflicts among competing colonial powers, seems to have continued to contemporary times. The rise of African socialism and *négritude*, emphasizing black African community, greatly influenced the first president of Senegal, Léopold Sédar Senghor. Senghor was president of Senegal from 1960 to 1980; his party, the Union Progressiste Sénégalaise, “was a loose coalition of factions that was forged and held together by political support in exchange for state revenues” (Mozaffar and Vengroff 603).

Since Senegal’s independence, the government has retained its remarkable stability on a continent where many governments succumb to violent military overthrows. The instability of so many countries on the African continent can often be attributed to the methods used by powerful leaders to maintain centralized power. However, Senegal’s remarkable stability can be related to its early history of one-party rule and the judicious and strong executive leadership of Senghor.

This paper begins with a probing of the foundations of Senegal as a nation. It will then explore the evolution of Senegalese politics from 1958 to 1978, emphasizing the role of dynamic leadership and party-building in the support of political stability. This time period focuses on the foundations of the Senegalese Constitution, politics, and parties. The beginning of the era of independence for many African states has been chaotic, such as in the Congo; however, this period in Senegal saw the rise of a philosophical-leader who would, through dynamic direction and a unified political party, lay the foundations for future political stability maintained to this day.

History

While considering the status and foundations of political stability in Senegal, a brief study of the country’s history is merited. Senegal was France’s first African colony, and thus experiences a unique relationship with the imperial power. Lucie Gallistel Colvin indicates in her *Historical Dictionary of Senegal* the country has a “deep and rich” pre-colonial history (Colvin 2). Before the advent of French colonialism, three major civilizations occupied the territory that is now Senegal: the Tekrur, the Wolof, which would become the Jolof Empire, and the Malinke. The Tekrur were the first known occupiers of Senegalese territory, while the Jolof Empire later united the central part of the country between the fourteenth and sixteenth centuries (Colvin 2). The Malinke were centered in the Gambia River basin and the upper region of Senegal. Colvin describes the evolution and relationships among these three ethnic groups,

arguing they were all “built on an underlying historic unity” (Colvin 2).

Portugal was the first trading power to express interest in Senegal. Portuguese traders arrived beginning in 1444 and quickly established a booming slave trade based in Senegambia, the region comprising Senegal and the Gambia River basin (Colvin 2–3). Because the reigning empire, the Jolof, was centered in the interior of the country and had no access to water routes, it split into separate regional groups. Colvin writes that the various minor successor kingdoms, though never accumulating much power, maintained “a stable balance of power and a commercial focus on the coast” (Colvin 3). There were several insignificant conflicts between the tribes, but all were resolved without pretense or attempt at conquering (Colvin 3). Furthermore, the European traders “very rarely made war on local African kingdoms” (Colvin 3).

By the sixteenth century, the Portuguese were joined by the Dutch, British, and French in nurturing the slave trade based out of Senegambia. During the height of the slave trade in the 1700s and 1800s, France emerged as the dominant trading power on the Senegal River, while England was firmly placed on the Gambia River. The Dutch were out-competed and thus departed, with “the Portuguese forced south to Casamance” (Colvin 5).

The strong arm of the slave trade affected the “internal processes of Senegambian society,” according to Colvin. Slaves were taken and used throughout Senegambia, a prelude to the formation of slave militias in certain regions of the country. The proliferation of Islam, present in Senegal beginning in the ninth century (Economist Intelligence Unit), led many local clerics to condemn the slave trade and attack existing rulers’ vast corruption. The influence of Islam combined with the beginning of European industrialization led to the demise of the slave trade as the primary activity in the region; European traders began to focus on gum and later peanut exports (Colvin 6).

Between 1850 and 1920, the official colonial conquest of Senegambia ensued. This era of Senegal’s history was a rather “long and violent period of invasion and resistance, partly because of complex European commercial rivalries and partly because interior kingdoms were able to fight, lose, reorganize, and fight again” (Colvin 7). Militant Islam was experienced during this period as contentions between the secular and the religious were strained. Al-Hajj Umar emerged from these tensions to spearhead Islamic reform in the region (Colvin 9). The ensuing spread of Islam in the region led to the formation of “the two most powerful Islamic brotherhoods in Senegal today, the Muridiyya and the Tijani” (Colvin 11). These Islamic brotherhoods would be an important element in the coalition Sen-

egal's first president, Léopold Sédar Senghor, would form to firmly establish his party's dominance.

One of the key cleavages in Senegalese society can trace its origins to French dominance. France tended to favor residents of the urban centers, who had easier access to French education. Colvin writes that in the early 1900s, France employed an "association" policy "for the recently conquered rural Protectorate, but kept 'assimilation' as a goal for [urban] commune residents and the French-educated elite. Only Africans officially classified as *assimilés* could appeal to French law" (Colvin 11). Rural residents were classified as "*indigénat*," with no civil rights. The disparity created between rural and urban residents continues to this day.

Rise of Socialism

Socialism arrived in Senegal in the 1920s and 1930s, immediately attracting the intellectual elite (Colvin 13). In 1927 Lamine Guèye founded a Senegalese chapter of the predominant French socialist branch - the Section Française de l'Internationale Ouvrière or SFIO. The SFIO, though it dominated Senegalese politics after World War I, was flawed in its representation. The party perpetuated the urban-rural cleavage of Senegalese society in its strong favor of urban "citizens" over rural "subjects." Although Senghor supported the SFIO at first, Guèye's obvious prioritization of urban citizens led him to re-evaluate his political agenda. In fall of 1947, "Senghor openly denounced Lamine Guèye's 'dictatorial' leadership, the informal designation of deputies 'of the first and second degree' [i.e. urban and rural], as well as the nepotism and clan politics pervading the SFIO's federal bureau" (Schumacher 9).

The SFIO split in 1948 as the newly formed party of Senghor and Mamadou Dia, the Bloc Démocratique Sénégalais or BDS, came to power (Schumacher 6). The BDS was founded upon principles meant to "ensure equitable, democratic participation by all major regional, ethnic, and economic interests" (Schumacher 9). Although nominally different from the SFIO, the BDS resembled the former in its "machine style of politics." Schumacher argues that competition strengthened the parties' similarities and led to their merger in 1958 to form the Union Progressiste Sénégalais or UPS (Schumacher 6).

The Bloc Démocratique Sénégalais

The BDS was unique in its mass membership goal and its focus on internal party democracy, different objectives than those of the elitist SFIO. The leaders of the BDS supported the creation of regional and ethnic associations, encouraging their alliance

with the party as a "new coalition of 'popular forces'" (Schumacher 9). Senghor and Dia realized that to gain anything in elections, their party would need the support of coalitions and various social groups within the country. With this in mind, the BDS employed organizational and political tactics of mobilization on a territory-wide scale. The party's

Essential aim was to forge a rival electoral machine based on newly enfranchised social groups in the towns and rural areas beyond the four communes... BDS leaders campaigned, bargained, and negotiated to win the support of a wide array of established elites: ethnic, regional, and economic interest group spokesmen, traditional aristocrats and district chiefs, wealthy traders and entrepreneurs involved in... peanut-producing regions, and, above all, Muslim religious leaders (Schumacher 10).

This method of party building would continue to be utilized by the UPS upon its ascension to power in 1958.

Négritude

As a university student in Paris, Léopold Sédar Senghor met Aimé Césaire and Léon Damas, two figures that, like Senghor, would later emerge as prominent *négritude* authors and patriots. *Négritude* was a "philosophical movement... emerging among African and West Indian intellectuals in Paris during the 1940s" (Jules-Rosette 266). Senghor and Césaire formulated the idea of *négritude*, an idea that "revolted against French cultural assimilation and the denigration of traditional African culture. [They] rejected the premise of African cultural inferiority and extolled the communitarian values and emotional sensibility of Black Africans" (Gellar, *Senegal* 92–93). The doctrine led to a cultural break with the French colonizer and to a renewed appreciation and celebration of black African history, culture, and values. In the political domain, *négritude* would be an underlying element in African socialism, supporting the adaptation of traditional African values into political systems of the European style (Crowder 51).

With the advent of African colonies' independence, Tsenay Serequeberhan states the pivotal question was "for Senghor, the question of how we are to incorporate Negro-African values into the newly established independent states" (Serequeberhan 48). In the historical domain, the movement recognized Africans' contributions to world history, an element frequently ignored in European education. *Négritude* also presented "a picture of a suffering Africa, exploited and abused by the white man, awakening slowly to a glorious day of freedom" (Crowder

51).

African Socialism

African socialism, the political doctrine that would become the platform for Senghor's UPS party, was strongly rooted in the négritude movement. Since Senegal's independence, African socialism has been the official ideology of the ruling party. The doctrine was developed by Senghor and Mamadou Dia, emphasizing the creation of a socialist society grounded on a combination of modern economic planning and traditional African communitarian values (Gellar, *Senegal* 57). Cox and R. Kessler write, "Senghor early [on] combined certain aspects of European thought - democracy, humanism, trade unionism, dialectics - into his own blend of cultural and political philosophy" (Cox and Kessler 328). African socialism dismisses the capitalist mode of economics, favoring instead the Marxist dialectic. The movement particularly favors party over individual and the creation of rural cooperatives (Nelson et al. 203–205). The elevation of the party as a political unit was extremely important in Senghor's rise to power. He used African socialism to support a government balanced between "a dominant majority party and a loyal opposition which exercised its activities lawfully without leaning toward subversion" (Yansané 312).

Aguibou Y. Yansané identifies four conditions to facilitate the development of a socialist society in Senegal: the "nationalization of the means of production..., scientific research to gauge the potentialities of human and natural resources..., the establishment of periodic economic and social development plans based upon the needs of the Senegalese people..., [and] the transformation of the social structures and the implementation of the chosen plan" (Yansané 312–313). Underlying these four elements was the idea of négritude, the preservation of the economic and technical advantages of colonial rule, and the rejection of the colonial system's flaws.

Senghor's African socialism for Senegal differed from conventional Marxism in that it encouraged spiritual freedom and rejected implicit Marxist atheism. This was critical for Senegal, as this adapted socialism was considerably less menacing to the country's Muslim religious leaders than Marxist ideology. Senghor's embrace of the spiritual, sensate, and religious values laid the foundation for the UPS's emergence as dominant party, facilitating the support of the Islamic brotherhoods (Gellar, *Democracy* 116–117).

In his book *Senegal: An African Nation Between Islam and the West*, Sheldon Gellar outlines the effects African socialism had on the Senegalese economy. Gellar argues that, as political

doctrine, African socialism deterred the establishment of large-scale capitalist enterprises in rural areas and instead promoted the establishment of rural cooperative structures (*Senegal* 58). The ideology's accent on state stewardship has also prompted state intervention in economic regulation and intervention. Finally, African socialism was more flexible than pure Marxism because it permitted both the development of a private sector and the investment of foreign capital (Gellar, *Senegal* 58).

The Mali Federation and Independence

In 1958, with the termination of the Fourth French Republic resulting from Charles de Gaulle's ascension to the presidency, a modified relationship between France and her colonies was incorporated into the new constitution of the Fifth French Republic. The new constitution "provided for the free association of autonomous republics within the French Community, where France was envisaged as the senior partner. The community had jurisdiction over foreign policy, policy on strategic raw materials, and . . . over higher education, internal and external communications, and supervision of the courts" (Nelson et al. 33).

Senghor was, early in his political career, a moderate proponent of pan-Africanism. He supported efforts to create a West African Federation consisting of Senegal, the French Soudan, Upper Volta, and Dahomey, called the Mali Federation. The latter two countries soon withdrew after the first constitution was drafted because of domestic political struggles and foreign economic ties. A second constitution for the Mali Federation, including only Senegal and Soudan, was drafted in June 1959. The Federation gained independence a year later. The new federal constitution altered the balance of power to fit the two-state system, creating a dual executive at Senegal's insistence (Skurnik 48).

The Mali Federation, though created with very high hopes and expectations, was destined to fail, largely as a result of the numerous differences between Senegal and Soudan. A *New York Times* article dated August 20, 1960, when Senegal declared independence from the federation, states that tensions between the two countries were present from the federation's conception and proved to be insurmountable. The two countries had "differing political conceptions, personal rivalries and national jealousies. The strains proved too much in the end" ("Strain Beset Mali" 9).

The "strain" was exacerbated by the countries' differences in size, population, and development, as well as the fact that the Mali Federation was a federation of only two states. Senegal

was smaller but more prosperous and its citizens had more political freedoms. In contrast, Soudan was larger, poorer, more populous, and much more politically strict in terms of parties, unions, and state control (Crowder 76). Politically, both Senegal and Soudan were controlled by one dominant party, whose respective convictions conflicted. W.A.E. Skurnik writes

“Senegalo-Soudanese divergences were rooted in different domestic political settings and experience as well as individual leaders’ personal preferences. Perhaps the most important contrasts concerned political style and consequent false expectations. The Soudanese... favored centralization and authoritarian methods fortified by their conviction that only their path was the correct one... The Senegalese [had] a political tradition of party fusion and compromise” (49–50).

Michael Crowder emphasizes the “clash of personalities” between Senghor and Modibo Keita, the leader of Soudan, implying each represented the general political attitudes of his respective country (Crowder 78). Senghor and Keita conflicted over the question of the new federation’s independence and over the best system for building the federation (Skurnik 51). Perhaps the most significant reason for the failure of the Mali Federation was the tension resulting from the two countries’ diverse political histories. Senegal, as France’s oldest colony, had functioned with a European-style politics for over a hundred years, while Soudan had experienced only fourteen years of these politics (Crowder 79).

The Mali Federation was dissolved less than a year after its conception, on August 20, 1960; as Senegal withdrew and declared independence. This move was a political result of various actions by Modibo Keita that Senghor understood “as a coup d’état against [Senegalese] sovereignty” (Skurnik 53). Keita’s actions were a response to the implicit conflict between Soudan and Senegal over control of the federal armed forces, which were made up of Senegalese and stationed in Senegal. During preparations for the upcoming federal elections, scheduled for August 27, 1960, Keita discharged federal defense minister Mamadou Dia from his position, “declared a state of emergency, appealed for French armed support, and asked for an immediate session of the United Nations Security Council” (Skurnik 53).

Government Evolution after Independence

Senegal’s constitution was modified after the country’s withdrawal from the Mali Federation and was put into effect August 25, 1960. Elections held the following month made Senghor president, virtually unanimously. The two-headed ex-

ecutive, or bicéphalisme, of the Mali Federation was preserved, and Mamadou Dia became prime minister (Schumacher 62). Dia, who served also as the deputy secretary general of the UPS and as national defense minister, was the second most powerful politician in Senegal. His political supporters included radical socialists who sought a more leftist leader than Senghor. Dia himself aspired to supplant the president. Nelson et al. describe the tense situation of Dia’s failed attempt at a coup d’état just two years after independence:

“Faced on December 17, 1962 with the likelihood of parliamentary vote of no-confidence and loss of his position as prime minister, Dia called out the national police in an effort to prevent the vote from being cast. The military threw its support to Senghor and, after a few days of uncertainty, Dia and his supporters were arrested. A few months later they were condemned to long terms of imprisonment” (36). Dia would not be released from prison until 1974.

The utter failure of Dia’s attempted coup and its lack of violence attest to Senghor’s strong political support and credibility. After the December crisis, he initiated new constitutional provisions. The new constitution, declaring the birth of the Second Senegalese Republic, was approved on March 3, 1963, by national referendum. The key alteration of the new document was the elimination of the post of prime minister. The constitution established a presidential government with separation of powers “adapted to Senegalese realities” (Schumacher 68). New elections for the Senegalese presidency and parliament were set for December 1963. Violent riots broke out in Dakar, Senegal’s capital, between Senghor’s and Dia’s respective supporters just before the elections, again prompting military intervention (Nelson et al. 36).

The constitution of 1963 was greatly influenced by both the American and French constitutions. As a consequence of Dia’s failed coup d’état, the power of the president was greatly enhanced. Virtually all executive power, previously divided through bicéphalisme, lay in the president’s hands, who would be directly elected through universal suffrage for four-year terms. The 1963 constitution

[e]xPLICITLY gave him [the president] responsibility for elaboration and implementation of all national policy . . . the new text unequivocally made the president the head of the administration. The authority of the presidency was further upgraded by . . . article 47, which gave the chief executive ‘exceptional powers’ under certain circumstances to be determined at the president’s sole discretion . . . Another source of the

president's increased power since 1963 has been the vast range of law-making and executive rule-making authority that Senghor has concentrated in his office (Schumacher 70).

Both the executive and the National Assembly can initiate legislation. During the first decade of Senegalese independence, the vast majority of bills were initiated by the executive. The president also has the potential to make laws, with the approval of the National Assembly.

Edward J. Schumacher writes: "Above all, the reorganization of central administrative resources since 1963 has strengthened President Senghor's role and influence in all phases of policy initiation, formulation, and implementation" (Schumacher 72). Senghor gained considerably more political and legal authority than Dia had ever possessed. His authority also increased through the growing number of functions regarding supervision and coordination exercised by Senghor's personal staff and the presidency's general secretariat (Schumacher 72).

UPS Evolution and Opposition Parties

The BDS merged in 1958 with Lamine Guèye's Socialist party to form the Union Progressiste Sénégalaise. The BDS founders first built a considerable constituency throughout the nation, laying the foundations for UPS hegemony upon the BDS - UPS evolution. In 1958, two years before Senegal achieved independence, a faction of the UPS broke away from Senghor and Dia over the party's ambiguous stand on immediate independence. This faction became a new opposition party, the Parti du Regroupement Africain or PRA, and quickly gained support among laborers, trade unions, and youth.

The following year, a second opposition party was created, the Parti de Soliarité Sénégalaise or PSS, in opposition of the Mali Federation and in support of fortified and continuing ties with France (Schumacher 20). The PSS, which supported a marriage of government and Islamic values, gained support from Muslim religious leaders early on. However, Senghor's alliance with the leader of the most powerful Islamic brotherhood eventually lured clerical leaders back to the UPS (Schumacher 20). The PSS was legally dissolved shortly thereafter.

The UPS controlled government emphasized party unity while permitting the existence of opposition parties. These were understood nonetheless to be part of a "loyal opposition" (Gellar, *Democracy* 46). Yansané writes the UPS sought "an equilibrium between conflicting interests" (310). Schumacher argues the UPS's existence and objectives were in fact based upon this

"task of neutralizing opposition and regulating factional struggles for office and patronage" (Schumacher 20). For example, the UPS government outlawed the Marxist-Leninist Parti Africain de l'Indépendance, or PAI, after violent episodes during elections in 1960 instigated by leaders of the party. Lucy Creevy et al. writes "party leaders and voters [engaged] in a complex coalition-building game that shifts over time by the strategic entry and exit of different political parties" (Creevy et al. 473).

Another opposition party was created in 1961, the Bloc des Masses Sénégalaises or BMS. Led by dissenting faction leaders from the UPS, the UPS reabsorbed the BMS just before the 1963 elections and the party was legally dissolved (Schumacher 22). There remained a small section of the BMS that refused to rejoin the UPS. These leaders joined with former Prime Minister Dia's supporters to form the Front National Sénégalais, or FNS. Factions from the Parti du Regroupement Africain-Sénégal, or PRA, and the illegal Parti Africain de l'Indépendance, or PAI, also rallied to the FNS. The UPS government began to weed out Dia partisans in 1963 and consequently extended its powers to outlaw the FNS. The PRA-Sénégal joined the ranks of the UPS in 1966, with its leaders receiving as rewards several ministerial posts and positions in the UPS government. Thus, all legal opposition completely disappeared from Senegal (Gellar, *Democracy* 45). In discussing the UPS's remarkable self-preservation, W.A.E. Skurnik emphasizes the element of cooperation:

The methods used by the dominant party to overcome internal opposition have revolved around the concept of compromise: dialogue, symbolic deference, absorption of key leaders, financial and other types of subsidies, and, in only a few cases, reluctant force (Skurnik 9–10).

Party Building: Clans

Senegalese politics is remarkable for its political constituency groups and its coalition-style of organization; it could be called democratic patronage. Nelson et al. argues one source of Senghor's party's strength was that the "coalition has always reflected the basic social structure of the country" (Nelson et al. 197). The dynamic and widespread party building of the BDS and later, the UPS, was one reason for Senegal's gaining independence "with a greater degree of national, as distinct from political, unity than any other West African state" (Crowder 114). As president, Senghor exercised a policy of conciliation to settle any conflict among groups.

An important constituency group in this vein is the clan, a group that includes followers and a leader who typically share the same ethnic, kinship, or religious ties. The clan leader enjoys the support of his followers in return for favoring their interests in a patron-client type of relationship (Nelson et al. 197). The leader himself endeavors to increase his influence and status, rather than his political power, to better provide for his clan. Nelson et al. describes the importance of clans in party building, arguing “[a]n institutionalization of personal relationships, the clan provides an obvious vehicle for political influence. Members give their leader their votes, among other things, in return for whatever he can obtain by delivering their votes” (Nelson et al. 197–198).

Party Building: Islamic Brotherhoods

Another clientele that holds considerable sway over its members is the Islamic Brotherhood. These brotherhoods and their leaders, called marabouts, are “the major controllers of public opinion and organs for mobilization of political support in the country” (Nelson et al. 198). The vast majority of Senegal’s citizens, around 75 percent, belong to an Islamic brotherhood.

The brotherhoods control not only the political life of their members but also the economic life. The marabouts typically manage vast amounts of land, especially in areas of peanut cultivation. There are various orders of brotherhoods, but all are organized similarly in units based on hierarchy. Each member must obey his unit’s marabout, the marabouts in the bigger units ranked above, and ultimately the specific branch’s head marabout. Nelson et al. writes the marabouts:

“Domination varies from group to group but is sufficiently strong in almost all cases so that the government feels it’s necessary to deal with the people through the marabouts in all efforts to mobilize support for its policies... [The obedience exercised by brotherhood members] extends to civil and political matters as well as to religious questions. Thus the six major divisions (the united Muridiya brotherhood and the five important branches of the two other large brotherhoods) form the major political divisions among the country’s rural population” (198).

Typically the Islamic brotherhoods have represented a conservative force in Senegalese politics, usually supporting Senghor’s leadership and policies. The brotherhoods have gone against Senghor on few occasions, such as after the creation of the PSS in 1958. All opposition to Senghor on their part, however, was unsuccessful, and the leaders typically rejoined Senghor’s ranks thereafter (Skurnik 11).

The Islamic brotherhoods supported Senghor’s African socialism, as the doctrine supported the embrace of basic spiritual and religious values rather than Marxist atheism. Upon Senegal’s achievement of independence, Prime Minister Mamadou Dia pushed for reform of the Sufi brotherhoods, reconstructed programs in favor of a “modern Islamic education system,” and the creation of an Islamic Council to manage planning and regulation of Muslim religious holidays and Mecca pilgrimages (Gellar, *Democracy* 117). Dia’s “reform” agenda threatened the Sufi marabouts and “was a major factor explaining why the marabouts supported Senghor rather than Dia during the political crisis which led to his downfall in December 1962” (Gellar, *Democracy* 117).

During his presidency, Senghor continued to solicit the most powerful marabouts, using government assets and providing state favors, honors, and services in return for their political support. Interestingly, Senghor endeavored to “reinforce the authority of the secular state and to make the legal system more in line with Western norms” while courting the Islamic brotherhoods’ leadership (Gellar, *Democracy* 117). Senghor’s vision of a secular state has, on occasion, led to criticism from the Islamic brotherhoods; however, the basis of a Senegalese state constructed on African socialism, which emphasizes the spiritual and sensate, and Senghor’s remarkable aptitude for compromise retained the brotherhoods’ support for his party, presidency, and policies.

Party Building: Labor Organizations

Interestingly, labor unions in Senegal are not very powerful in political terms. Their political role is typically reduced to that of the clan leaders within a union; for example, many clan leaders of the Confédération Nationale des Travailleurs Sénégalais (CNTS, or the National Confederation of Senegalese Workers) were associated with the Union Progressiste Sénégalaise. According to Nelson et al., conflicts within the CNTS and UPS were often indicative of “deterioration of the social climate;” the union’s leaders were split badly at the time of each political crisis from 1962 to 1973 (Nelson et al. 202). The political domain where labor unions display the most influence is in party councils. Outside of the UPS, labor unions have often posed a negative (but usually unthreatening) force for the government to deal with (Nelson et al. 202).

Rural Development

An element of Senghor’s platform that early on in his political career distinguished him from his colleagues was an emphasis on bridging the gap between urban and rural in Senegal.

The cleavage between urban citizens and rural citizens had been present since French colonial rule. Consequent favor of urban development over rural development exacerbated this disparity. Senghor's government, founded on the principles of African socialism, employed national development plans to promote Senegalese development. The government especially emphasized development in the agricultural sector, which had been previously neglected. The primary tool for the stimulation of rural development and economic integration was the agricultural cooperative (Nelson et al. 37). The First Plan for rural development resulted in a substantial increase in peanut production, more accessible roads, and rural bureaucratic development. The Second, Third, and Fourth Plans were project-oriented and focused on diversifying the economy and raising productivity levels (Gellar, *Senegal* 59). The Senegalese economy expanded to produce other crops in addition to peanuts, including corn, rice, cotton, and tomatoes. The industries of agricultural and fish processing also experienced some growth. The success of these national development plans further legitimized the state's economic intervention and thereby provided further credibility to Senghor's remarkable presidency.

Conclusion: Senghor and his Legacy

Leonardo R. Arriola has justly written that "Africa's political instability is conventionally attributed to the manner in which leaders sustain themselves in power" (Arriola 1339). Patronage is a common tool for power sustainability. However, as Arriola later states, the use of patronage in African politics has also been one of the key factors in the political stability of certain regimes (Arriola 1340). Léopold Sédar Senghor certainly utilized patronage quite effectively in party building and during his presidency. His objective was not the creation of a dictatorship in Senegal, nor even unlimited political power. An intellectual who pioneered the celebration of African culture and arts, Senghor rather focused on national unity in the establishment of his patron networks, endeavoring throughout to involve as many diverse groups and organizations as possible. He sought to address marginalized groups while providing for the good of the whole country. Senegalese parties encompass a series of coalitions representing numerous sections of the population. Senghor made it his goal to represent the interests of all these groups as best he could. In spite of the termination of opposition parties, the president firmly believed Senegal "was not a single-party regime but a 'unified-party regime' that united all parties under the banner of the UPS" (Gellar, *Democracy* 45). With African socialism and négritude as the official doctrines of the UPS and of the state, Senghor's strong executive authority was mitigated with foundational values of African community, spirituality, equality, and appreciation of the African experience (culturally, politically, and historically).

In 1970, as demands for the transfer of more responsibility and power to "the younger generation of technocrats" and for increased Africanization proliferated, Senghor agreed to another constitutional revision. The post of prime minister was then reestablished in the Senegalese constitution; Abdou Diouf held the position until 1980. Diouf, a UPS member who had studied at Dakar University and at the Sorbonne in Paris, had served as Secretary General of the Ministry of Defense and as Director of Senghor's Cabinet. Four years after the revision, Mamadou Dia was finally released from prison. Further revisions in 1976 attested to the increasing political liberalization in Senegal. The 1976 constitution reinstated the legality of limited opposition parties.

President Léopold Sédar Senghor voluntarily retired from office in 1980, "a courageously unique act, unequaled in Africa, where leaders tend to be either removed from office by military coup or die in office" (Yansané 427). Abdou Diouf succeeded him without violence, setting a good example of peaceful transition. The succession was supported by constitutional revisions as well as efforts to make the ruling party's organization more transparent (Yansané 427). Senghor, although his presidency was buttressed by a unified political party (the UPS, which became the Parti Socialiste) and by the extension of government patronage, was the fundamental conduit in laying the foundations for political stability in Senegal. His example shows how instrumental a dynamic leader can be in maintaining a country's stability. Senghor's philosophical ideals and strong leadership may be seen by some as contradictory. However, his ideals served to both legitimize and complement a unified-party state that to this day remains one of the most stable on the African continent. 🌀

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Kathryn Steele

Kathryn Steele received her Bachelor of Arts in International Studies with a second major in French from Virginia Tech in May 2010. This research piece, a semester-long project, was conducted for the International Studies Senior Seminar she took with Dr. Scott Nelson in the fall of 2009. Senegal as a research topic grew from her Francophone Studies course with Dr. Médoune Guèye, in which she learned of the country's notable absence of any violent coup d'état. During the writing process, she received instrumental feedback from both her senior seminar peers and from Dr. Nelson. Kathryn is currently working towards a Master of Arts in Curriculum and Instruction with a Second Language focus in the School of Education at Virginia Tech.

Mathematical Polysemy

Naming and the Teaching of Mathematics

by Bryce Stucki

The problem of communicating a thought is the problem of selecting a word or string of words so that the target of communication can better understand that thought. For the average person, this quandary is minimized because a perfect understanding on the part of the target is often not required or sometimes not even desired. For a mathematics instructor, however, the problem remains. Part of the difficulty lies in the names of various mathematical concepts used. Some concepts may actually aid intuitive understanding of the underlying meaning of the word, while others may hinder it. In this paper, several standard English words are evaluated on their ability to provide a straightforward, intuitive understanding of an underlying mathematical concept. An argument for addressing the names of mathematical concepts is presented as well as ideas for further research.

Although communication of mathematical ideas is difficult, effective communication is highly important. The salaries of engineers, computer scientists, financial analysts, and others utilizing mathematics in a professional setting demonstrate the economic importance of mathematical skills. The pervasive and growing role of computers in modern society suggests that those skills will also be important in future occupations. Society also stands to benefit from greater mathematical knowledge in other ways as well: Carl Gauss has deemed mathematics “the Queen of the Sciences” and mathematical developments often lead to developments in the other sciences such as the concurrent development of calculus and classical mechanics or the increasingly utilized statistics and game theory (Smith et al. 2001). In order for students to take ad-

vantage of mathematical knowledge, they must have proficient instructors who can communicate mathematics effectively.

The names affixed to mathematical concepts influence the manner in which we think about those concepts, especially when they are first introduced. The term “polysemy” means the coexistence of many possible meanings for a word or phrase. When the name of the concept is first encountered, the student will attempt to conceive the expression in terms of his or her already developed understanding of the standard English meaning of the word. When this previously developed understanding is at least partially aligned with the meaning of the mathematical concept, some intuition for the word’s meaning has been developed by the name alone. The more closely aligned the previously developed understanding and the meaning of the mathematical expression, the more intuitive and apt the name.

Mathematics contains a large number of terms exhibiting polysemy, with some terms particularly well named. The naming of various concepts called “neighborhoods” is one example. Sometimes, however, the names of mathematical terms are misleading, as with the word “imaginary” in “imaginary numbers.” Yet other names range from good efforts (“normal”) to relatively nonsensical (“power”). In this paper, each of the terms mentioned above are investigated in detail, with its ability to shed light on the subject evaluated. The purpose of this research, besides acting as a small survey, is to make instructors and students aware of the role of naming in mathematical understanding and to ideally improve mathematics instruction.

1. Neighborhood

The naming of the mathematical concept “neighborhood” is an example of a standard English word providing a good intuition for understanding the underlying mathematical concept. The concept of a neighborhood as commonly understood first appeared in print in 1891 (Neighborhood Def. 5a.). The most common mathematical understanding of neighborhood is: All points lying within a nonzero distance of a given point are in that given point’s neighborhood. This can be compared to the intuitive notion that all the houses on your block are in the neighborhood of your house. The earliest appearances of “neighborhood” in the English language—around the year 1425—have a definition that fits the contemporary understanding of the word: “The people living near to a certain place or within a certain range” (Neighborhood Def. 1a.). The similarities between the Standard English and mathematical usage of “neighborhood,” however, do not lend complete insight into understanding the mathematical concept.

Our intuitive understanding of a mathematical neighborhood breaks down when the definition of neighborhood is presented rigorously. Rudin gives the following definition of neighborhood as used in the mathematical field of analysis: “A neighborhood of radius r of a point p is a set consisting of all points Q such that the distance between P and Q is less than R ” (Rudin 28). A neighborhood, thus, has some qualities, size and openness (the distance between P and Q is less than R) that our instinctual conception lacks. Neighborhoods existing in dimensions “higher” than the third dimension are more difficult to understand through the normal English meaning of neighborhood primarily because we cannot visualize such neighborhoods. What is preserved in all dimensions, however, is that “neighborhood” at least vaguely refers to an idea of a spatial relationship, even though such spatial relationships may not be easily visualized. However, this meaning is not the only meaning of neighborhood in mathematics.

Indeed, there are various definitions of neighborhood in different areas of mathematics. In *General Topology*, John Kelley offers: “A set U in a topological space is a neighborhood of a point X if and only if U contains an open set to which X belongs” (Kelley, 38). Kelley, in contrast to Rudin, omits the idea of a radius and the idea that a neighborhood must be open. In graph theory, we encounter yet another definition, namely that the neighborhood of a vertex is the set of all vertices adjacent to that vertex (Margherita and Weisstein “Neighborhood”). There are other more specialized usages of neighborhood, such as graph theory. Therefore, we must know what type of mathematics we are doing in order to know which type of neighborhood is being discussed, though the type of neighborhood can usually be discerned from contextual clues. These various definitions of “neighborhood” are consistent within each area of mathematics. It is also true that each usage of neighborhood presented preserves the idea of a spatial relationship, thus easing our understanding of each term. If other mathematical terms were named as effectively as neighborhood, students would likely have an easier time understanding mathematics—or at least knowing what a mathematician means when she says she lives in your neighborhood.

2. Imaginary Numbers

Imaginary numbers, on the other hand, are poorly named. The designation of these numbers as “imaginary” has little to do with the utility of imaginary numbers and more to do with a misunderstanding on the part of those who named them. Although the use of the word “imaginary” denotes some form of uselessness, imaginary numbers have widespread applications in various fields, such as electrical engineering and physics. At the time of their discovery, there were a number of mathemati-

cians, including Euler, Gauss (Nahin 82), and Newton (O.E.D. Imaginary Def. 1c.), who felt that the imaginary numbers were indeed imaginary in the sense of “imaginary or impossible” (Nahin 31). Descartes shared this sentiment and named the imaginary numbers with their unfortunate moniker.

Early reactions against imaginary numbers were not without precedent. Mathematicians have had similar reactions against the concept of zero, negative numbers, rationals, irrationals, transfinite numbers, and many other types of numbers and ideas. As with the early reactions against imaginary numbers, these other responses fell out of favor over time. The ill suited name “imaginary” most likely remains in use due to complacency. Yet referring to such numbers as “imaginary” is not instructive because, in addition to being useful, imaginary numbers have no exceptionally unusual properties. The most surprising properties of imaginary numbers—such as $i \times i$ is equal to negative one—are perhaps no more surprising than the properties of real numbers—a negative real multiplied by a negative real yields a positive. Despite this fact, the typical interpretation of the mathematical meaning of “imaginary” as “impossible” persists even in *Webster’s Dictionary* (Imaginary Def. 1) and there is little doubt it also persists in the minds of students. Since the convention of calling the numbers “imaginary” is so widespread, renaming imaginary numbers is unrealistic. Instructors should explain the inapplicability of the word “imaginary” to their students, which should somewhat mitigate the negative effects of the unfortunate moniker.

3. Normal

There are a variety of mathematical terms described as “normal,” many of which are at least somewhat aligned with the everyday English understanding of the word; however, a few terms are not. Barton states that “normal” first appeared in the English language in the sixteenth or seventeenth century “with a mathematical meaning” (Barton 2008) The Oxford English Dictionary (O.E.D.) corroborates Barton’s story, with one exception: three of the four earliest entries for “normal” make reference to the concept of a right angle or a rectangle, but the earliest entry refers to a verb that is “typical” (O.E.D. Normal Def. I. 2a.). The final meaning seems to have been lost; the O.E.D. describes it as rare, although the contemporary English usage of normal as “average” did not appear until 1777 and did not become common until 1840 (Normal Def. 2a.). While the understanding of “normal” as “average” has done much to influence relevant mathematical terms, it has only confused the understanding of the oldest term.

The common meaning of “normal” has influenced the naming of various mathematical concepts. The word has recently taken

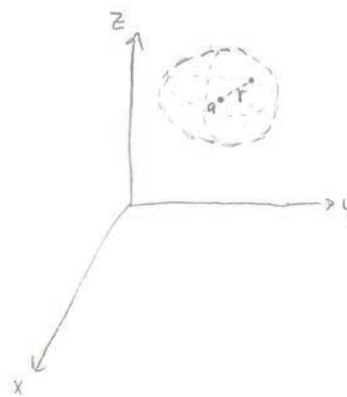
Figure 1:



Figure 2:



Figure 3:



Three examples of neighborhoods of point a , each of radius r . Figure 1 is in one dimension, figure 2 is in two dimensions and figure 3 is in three dimensions.

on specialized mathematical meanings: both in reference to a normal subgroup in algebra and in reference to numbers “having a decimal expansion in which all ten digits, and all sequences of digits of the same length, occur with equal frequency” in number theory, as well as with several more obscure meanings (O.E.D. Normal Def. II. 14b.). The algebraic meaning of normal seems to reflect the importance of normal subgroups in algebra, hence their regular, or normal, occurrence. However, the meaning of “normal” in number theory seems to refer to the regular distribution of numbers described in the term’s definition. The algebraic usage of normal is apparently part of a contemporary trend in the sciences of describing things that occur frequently as normal; such naming has occurred in chemistry, geology, medicine, meteorology, physics, and statistics (O.E.D. Def. II. 6-10).

These names in the context of mathematics do not aid in an intuitive understanding of their underlying concepts. All that they tell the student is that the concepts occur frequently in their respective area of study; they do not help the student understand why they occur frequently or anything regarding the essence of the concept. Instructors should emphasize that the word “normal” has little to do with the meaning of the various mathematical concepts described as normal.

In fact, the oldest mathematical meaning of “normal” comes from geometry. In geometry, “normal” describes angles of ninety degrees or is used in reference to rectangles, shapes containing four angles of ninety degrees. However, these usages of “normal” have fallen by the wayside. In modern geometry, “normal” typically refers to the somewhat related notion of “perpendicular to” (Normal Def. II. 5b.). This idea of “normal” is most commonly observed in three-dimensional spaces in reference to a vector that is constructed tangentially and at a ninety-degree angle—or “normally”—to a plane. As a natural result of being named before the standard English understanding of normal came into common usage, these terms have little to do with the this everyday meaning.

4. Power

The various mathematical concepts featuring “power” in their names bear little relation to the idea to which the English word “power” generally refers. The first mention of “power” in a mathematical context is found in a 1570 English translation of *Euclid’s Elements*, which was written circa 300 BCE. Euclid’s meaning of the word “power” means the square of a number, that is, the product of a number and itself. The actual word that Euclid used comes from a word defined as capacity or strength in ancient Greek (Woodhouse Power Def. 1). It is unclear why Euclid chose this word. It also seems that Euclid’s mean-

ing of “power” has been confined to translations of *Elements*. The common mathematical definition first appeared in 1603, meaning “a quantity obtained by multiplying a given quantity by itself one or more times,” or “an exponent” (O.E.D. Power Def. III. 12c.). This idea generalizes Euclid’s confined notion, to the case where the exponent of a number is equal to two. Although Euclid’s understanding of the word “power” in Ancient Greek appears similar to our contemporary understanding of the word, neither of these definitions seems to have much connection with the contemporary standard English understanding of “power.”

“Power” has a variety of other mathematical meanings: power series found in analysis, power sets in logic and set theory, and the power of a point in geometry. While a power series contains an infinite number of terms raised to a power and the “power of a point” contains the idea of squares of line segments or numbers from Euclid, in a general sense, these designations seem rather arbitrary—almost to the point of being mysterious.

Conclusion

Standard English serves the purpose of communication reasonably well, particularly because of its ability to adapt. The names ascribed to mathematical concepts, however, have remained; Euclid’s “power,” for instance, retains a name that is over 2300 years old. Most names ascribed to mathematical concepts, which may have made intuitive sense at the time of their creation, no longer lend insight into the underlying concept—or, as in the case of “imaginary numbers,” never did.

It should be clear that the instructor cannot receive full blame if the student does not understand an idea. As with any subject, mathematics requires effort on the part of the student for full understanding. But given student attitudes toward mathematics, instructors should employ any method that can reduce the difficulty in understanding the subject. Understanding the naming of or potentially renaming mathematical terms exhibiting polysemy is potentially one of those methods.

Consequently, instructors of mathematics attempting to be clear about the names of various mathematical concepts must continually refresh themselves on the significance of those names and devise ways to demonstrate that significance to their students. A catalog of mathematical terms employing an analysis similar to this paper would be useful in this regard. Whatever the method, it should be a priority for instructors of mathematics to make their students aware of the utility of the names of the various words: in at least a small way, the accessibility of mathematics depends upon it.

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Bryce Stucki

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A New Deal for Junkies

Changing Perceptions of Addiction and Treatment, 1935-1974

by Erin Weiss

Based on substantial primary research, this paper investigates how the Federal Narcotic Farm in Lexington, Kentucky, served as a pioneer in the medicalization of addiction and treatment from its establishment in the Porter Act of 1929 to its demise in 1974. In the early twentieth century, the public perceived addiction as a vice, which could only be solved by the criminalization of addiction. By mid-century, the perception of addiction changed; the medical community, policymakers, and the public began to see it as a medical ailment, which could be treated with rehabilitation in a medical context. Using standard social historical methods, I examine this transition through the lenses of public perception, scientific communities' ideas on addiction, and governmental legislation on narcotic control and treatment of addiction. This research concludes that the half-century experiment at the Narcotic Farm in Lexington, Kentucky played a central and crucial role in the process of the medicalization of addiction.

Dream Castle, Big Shot Drug Farm, Alpha Government Home, U.S. Greatest Gift to Lift Mankind Sanatorium, Beneficial Farm, and Courageous Hospital: these were some of the readers' entries a local Lexington, Kentucky, newspaper received in response to its contest to name the new institution believed to be the solution to the nation's drug addiction problem.¹ The United States government instead chose a less colorful name for the institution. On May 25, 1935, officials welcomed attendees to the opening ceremony to the "United States Narcotic Farm," com-

¹ Nancy D. Campbell, JP Olsen, and Luke Walden, *The Narcotic Farm* (New York: Abrams, 2008), 36-37.

monly referred to as the Lexington Narcotic Farm. Eventually, the nickname “Narco” became locally accepted for the home of the over 50,000 drug addicts who passed through its doors during its tenure in Lexington. The wide variety of names for the institution that emerged during its forty years of existence, official and unofficial, often metaphorically represented the changing perception of drug addiction and the path to a cure. This thesis utilizes “Narco” to investigate the changing perception of narcotic addiction and treatment from the 1920s to the 1970s.

Despite its importance in the history of drug addiction, “Narco” has received relatively little attention. The recently completed documentary produced by J.P. Olsen and Luke Walden and its corresponding book, written by Dr. Nancy Campbell along with Olsen and Walden, together serve as the best comprehensive history of the Lexington Narcotics Farm.² Together,

² On the history of the Lexington Narcotic Farm, see Campbell, Olsen, and Walden; Olsen and Walden, DVD, *The Narcotic Farm* (Hollywood, CA: PBS 2008); Caroline Jean Acker, *Creating the American Junkie: Addiction Research in the Classic Era of Narcotic Control* (Baltimore: Johns Hopkins

they explore the institution from its initial authorization by Congress in 1929 until its closure as a hospital for narcotic addicts in 1975. Patients volunteered or were court-mandated to participate in “the cure” to treat their addiction. Within Lexington’s walls a collective compilation of jazz musicians, doctors, nurses, businessmen, lawyers, authors, dealers, ministers, and prostitutes resided.³ The institution and its sister hospital in Fort Worth, Texas, both works contend, became a central part of a subculture of drug addicts in America. The documentary and companion book also examine the significance of the Addiction Research Center (ARC) housed as part of the Narcotic Farm in Lexington. For more than four decades, scientists and physicians at the ARC worked to understand the fundamental causes of addiction, document the effects of narcotics on the human body, and demonstrate potential for addiction in newly developed pharmaceuticals.

University Press, 2002); Robert S. Weppner, *The Untherapeutic Community: Organizational Behavior in a Failed Addiction Treatment Program* (Lincoln: University of Nebraska Press, 1983).

³ Campbell, Olsen, and Walden, 12, 88.

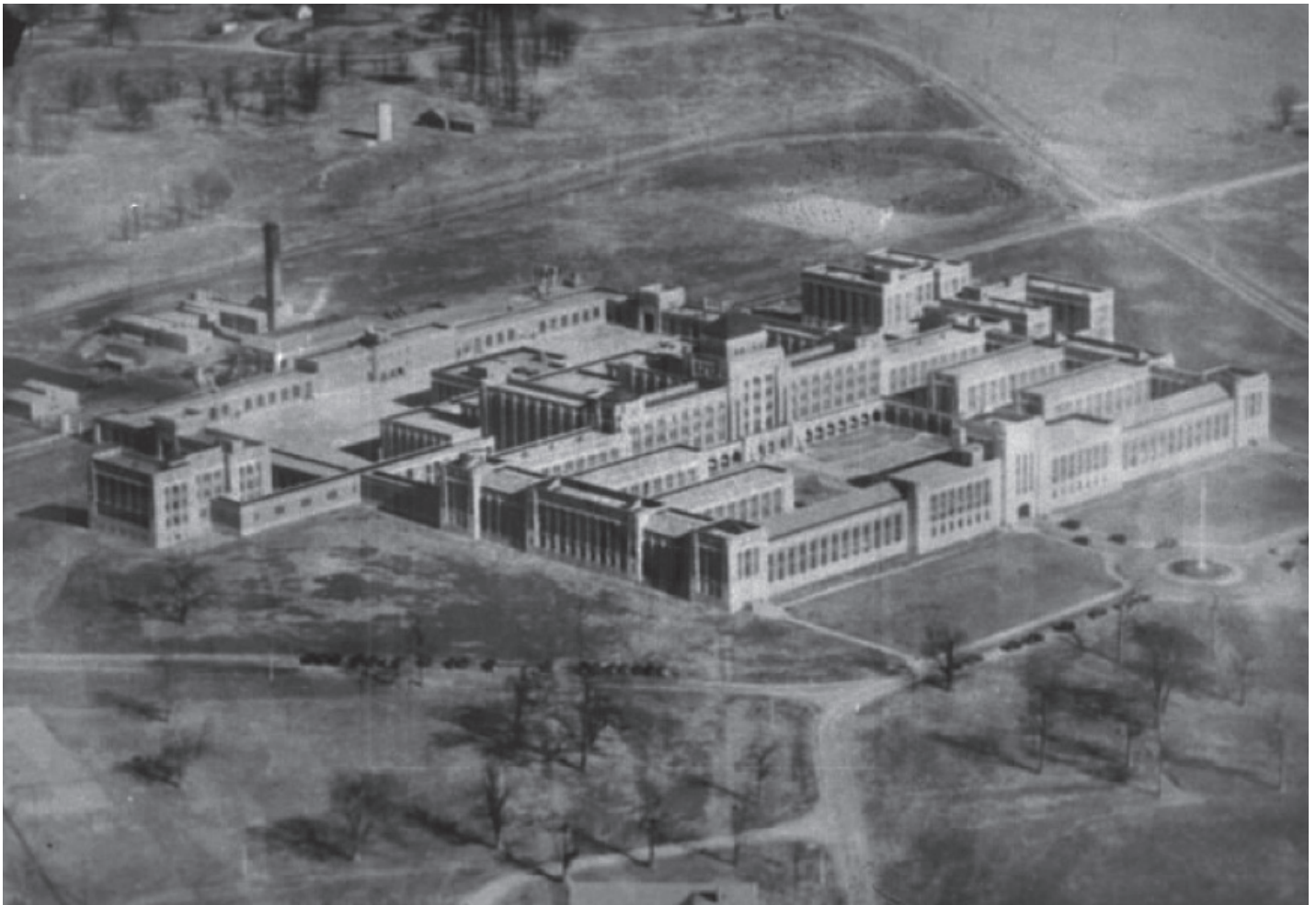


Figure 1: The Lexington Narcotics Farm (Lexington MSS).

There is a robust scholarly literature on the medicalization of drug addiction, particularly a number of comprehensive histories of addiction.⁴ These works illustrate that the perception of drug addiction directly influences attempts at treating drug addicts. From the beginning of its conception as a widespread societal problem, ideas about treatment formed from the perceptions of addiction's fundamental causes. It was a widespread belief that addiction resulted from a person's immoral character and a conscious "falling away from a respectable life".⁵ Many governmental officials and politicians believed criminalization and punishment were the solutions to a drug addict's weak character and the means to an end for the vice of narcotic addiction. Yet by the latter half of the twentieth century, a shift had taken place and most regarded drug addiction in a medical context. The therapeutic and medical treatment model of "Narco" both emerged from and shaped the underlying medical understanding of drug addiction.

This thesis explores the Lexington Narcotic Farm and its significance in the transition to the medicalization of drug addiction and treatment. The first section examines the perception of the problem of addiction prior to the opening of the Lexington Narcotic Farm by the public, scientific communities, and by the government. The thesis then traces the early period of the Lexington Narcotic Farm as it became a world leader in the area of drug addiction treatment. The Lexington Narcotic Farm's abrupt downfall and closure in the early seventies marked the end of an era in the treatment of narcotic addiction. The United States Narcotic Farm at Lexington, Kentucky, served as a primary vehicle for the transformation of ideas about addiction from moral failure to a medical problem, yet the very success of a medical model led to a decentralization of addiction treatment that made the Lexington model extraneous, a relic of a previous era.

Narcotic addiction treatment, before the opening of the two federal narcotic farms, normally consisted of abrupt withdrawal from the drug. Other substances were occasionally used to promote abstinence in the withdrawal phase of treatment,

4 On the history of the medicalization of addiction and treatment, see Acker; Sarah W. Tracey and Caroline J. Acker, eds., *Altering American Consciousness: The History of Alcohol and Drug Use in the United States, 1800-2000* (Amherst, Mass: University of Massachusetts Press, 2004); H. Wayne Morgan, *Drugs in America: A Social History, 1800-1980* (Syracuse, NY: Syracuse University Press, 1981); Weppner; Nancy D. Campbell, *Discovering Addiction* (Ann Arbor, MI: University of Michigan Press, 2007); Jill Jonnes, *Hep-cats, Narcs, and Pipe Dreams* (Baltimore, Md: Johns Hopkins University Press, 1999); David F. Musto, *The American Disease: Origins of Narcotic Control*, 3rd ed (USA: Oxford University Press, 1999); David T. Courtwright, *Dark Paradise: Opiate Addiction in America before 1940* (Cambridge, Mass: Harvard University Press, 1982).

5 Acker, 23.

including sodium bromide, cocaine, cannabis, and alcohol. Physicians often prescribed a daily dose of morphine, maintaining a level of drug dependence. After the prohibition of narcotics in 1914, exorbitant prices for narcotics on the black market drove many addicts to resort to theft, forgery, crimes against property, and even prostitution to get their next fix.⁶ From 1919 until 1923, controversial "treatment" clinics could be found in various cities of the United States that dispensed narcotics to addicts in an attempt to prevent them from turning to crime and drug trafficking to fund their next dose.⁷ The clinics' dispersal of weekly supplies for self-administration to addicts proved politically unacceptable to city officials as well as the general public, and the clinics were quickly closed.⁸ Due to increased enforcement of the Harrison Act of 1914, narcotic law violators in the twenties increased to about one third of all federal prisoners. By 1928, the existing problem of overcrowding in many federal prisons, inflated by narcotic law violators, prompted the Superintendent of Prisons to recommend the establishment of federal institutions for narcotic treatment and rehabilitation. The result was the introduction of a bill by Pennsylvania Congressman Stephen G. Porter to establish two of these institutions.⁹

Popular opinion in the early twentieth century labeled narcotic addicts as "degenerates."¹⁰ Considered an immoral sin of society, narcotic addiction, like alcohol and prostitution, roused reformers to action during the Progressive Era. Progressives and social reformers believed a weak personality and poor morals led individuals straight into addiction, and this moralistic conception proved considerably durable. "It was thoroughly indoctrinated that addicts were the lowest form of creature..." said Marie Nyswander, a surgical intern at the Lexington Narcotic Farm, "they had some kind of wild, maniacal pleasure... for which they should be punished."¹¹ In her autobiography, Janet Clark, a narcotic addict sentenced to time at "Narco," wrote about protestors outside her trial for narcotic possession. "Throw them in jail!" they shouted. "Get rid of them, preying

6 The Prettyman Commission, "Report on a Study of the Narcotics Problem and the Public Health Service Narcotic Hospitals," July 1965, 7. Records of the Lexington, KY, Clinical Research Center, 511.2.3, The National Archives Southeast Region (hereafter cited as CRC MSS); Courtwright, *Dark Paradise*, 135-137.

7 William R. Martin, M.D. and Harris Isbell, M.D., eds., *Drug Addiction and the U.S. Public Health Service: Proceedings of Symposium Commemorating the 40th Anniversary of the Addiction Research Center* (Rockville, MD: U.S. Department of Health, Education, and Welfare, 1978), 218-219.

8 The Prettyman Commission, 7.

9 Martin and Isbell, 218-219.

10 Campbell, Olsen and Walden, 164.

11 David T. Courtwright, Herman Joseph, and Don Des Jarlais, *Addicts Who Survived: An Oral History of Narcotic Use in America* (Knoxville: University of Tennessee Press, 1989), 310.

on society!”¹² Drug addiction during the twenties and thirties was probably more misunderstood, hated, and feared than any other social vice. Society regarded addicts as law breakers and, therefore, saw the penal model as the best way to address the problem. For many, even the severe punishments often meted out were not enough for the “degenerates” involved in drug addiction.¹³ Harsh punishments, it was believed, would remove addicts from the streets and serve as deterrence to others.

This perception of addicts as crazed menaces clouded the imaginations of many visitors to the Lexington Narcotic Farm well into the 1950s. One patient who led tours through the treatment center in the 1950s recalled one of the visitors asking if they were going to get to meet some patients at the close of the tour. After the tour guide revealed his true identity, the visitors were incredibly surprised that this well-dressed and well-mannered tour guide was actually a patient. They were certainly not expecting to see a person just like them. A female patient who frequently spoke with visitors about her experience as an addict told the presentation coordinator, “Just once, I wish you would let me go in wearing a straight-jacket, struggling and behaving wildly. They expect that.”¹⁴

Medical and government officials overwhelmingly shared the perception of addicts as inferior beings. In 1918, health officials reported in a questionnaire that the majority of physicians regarded addiction as a debauchery within society as opposed to a disease.¹⁵ The American Medical Association’s Committee on Narcotic Drugs released a report in 1921, referring to drug addicts as “miserable wretches” who were involved in the “vice of drug addiction.”¹⁶ Government officials shared this belief in the inherent inferiority of addicts. The House committee debating the original legislation that established Public Health Service treatment of narcotic addicts stated that, “victims of narcotics are a social menace.”¹⁷ Even the legislation that authorized the two Narcotic Farms defined an addict as someone who endangered public morals.¹⁸ The Lexington Narcotic Farm opened in a time when the widespread perception of addiction

was the immorality of society and the solution to addiction in society was incarceration.

The legislature established the Lexington Narcotic Farm, which served as a pioneer in the medicalization of addiction treatment, on January 19, 1929. The Second Session of the Seventieth Congress passed the Porter Act to authorize the terms, funding, and purpose of two institutions for the “confinement and treatment” of “any person who habitually uses any habit-forming narcotic drug.”¹⁹ Officials chose Lexington, Kentucky, and Fort Worth, Texas, for their tranquil countrysides and the availability of arable agricultural land, an important factor in the proposed treatment regimen.²⁰ “A United States narcotic farm shall be designed to rehabilitate them, restore them to health, and where necessary to train them to be self-supporting and self-reliant.”²¹

Congress established the Lexington Narcotic Farm using a medical framework to address addiction to narcotics. With this shift, Congress initiated a significant first step in the medicalization of narcotic addiction and treatment. Construction began in the spring of 1932 along Lexington Pike between Lexington and Frankfort, about a half a mile from the highway (see Figure 1). The grounds included four large dairy barns, a greenhouse, a utility barn, railroad sidings, chicken hatcheries, and slaughter houses. Designed as a self-sustaining institution, it even included a sewage disposal and treatment plant.²² The total cost for constructing the Lexington Narcotic Farm came to about \$4,000,000 in 1935. The planned yearly operating cost came to around \$750,000 including employee salaries.²³ The main building accommodated 1,000 patients, and the grounds had quarters for about 250 more employees required to keep the institution operating.²⁴

The design of the Lexington Narcotic Farm, with both hospital and prison-like features, facilitated the new approach to treatment of addiction. According to Campbell, “It was a prison built to confine violators of federal drug laws, but its rural setting and architectural style reflected a rehabilitation philosophy.”²⁵ A high chain link fence topped with coiled barbed wire surrounded the facility, exactly as any other prison

12 Helen MacGill Hughes, ed., *The Fantastic Lodge: The Autobiography of a Girl Drug Addict* (Boston: Houghton Mifflin, 1961), 205.

13 Sidney S. Louis, “The Drug Dependent- What They are Like,” (an essay prepared for presentations of the Education and Training Section, ca. 1960s). The Lexington Narcotics Farm Collection, 1930s-1970s, 1998PH04, Library and Special Collections and Archives, Kentucky Historical Society (hereafter cited as Lexington MSS).

14 Louis, “The Evolvement of New Treatment Programs,” 3.

15 Martin and Isbell, 218.

16 US Treasury Department Bureau of Narcotics, *Prevention and Control of Narcotic Addiction* (Washington, D.C.: GPO, 1967), 17.

17 Earle V. Simrell, “Historical Background; Statutory and General,” *Sub-committee- Drug Abuse II*; Review of Programs, 1965, 2. CRC MSS.

18 *Porter Act of 1929, U.S. Statutes at Large 70* (1929): 1085.

19 *Porter Act of 1929, 1085*.

20 Campbell, Olsen, and Walden, 36.

21 *Porter Act of 1929, 1086*.

22 “Huge Farm Ready for Drug Addicts; Federal Government Will Dedicate \$4,000,000 Plant in Kentucky on Saturday,” *New York Times*, May 19, 1935. PHN; Weppner, 27-29.

23 “Huge Farm Ready for Drug Addicts.”

24 U.S. Public Health Service, “A Federal Hospital for Drug Addicts” *American Journal of Public Health* 25 (1935), 803.

25 Campbell, Olsen, and Walden, 36.

would have. Locking doors and barred windows characteristically marked the corridors of the patient quarters. Even its vast size was reminiscent of other federal prisons. Likewise, institutional rules required all patients to wear the government issued muslin uniforms and tennis shoes.²⁶

The Lexington Narcotic Farm had other features, however, that revealed its unique mission. The whole compound's architecture featured a modern art deco style. The entrance, decorated with columns and vaulted ceilings, looked more like a hospital than a prison.²⁷ The locking doors were thoughtfully concealed by the architecture surrounding them, and the recreational facilities differentiated it from other federal penal retention institutions. Such amenities earned the Lexington Narcotic Farm the reputation as being a "country-club prison."²⁸ The unique style of the institution surprised many; it inspired one incarcerated addict to write, "I'm struck by the freedom, the lack of restraint."²⁹ The overall design and location reflected its two-fold mission; first, to serve as a means to segregate the afflicted from society and ensure their containment in a guarded facility; second, to rehabilitate and regain the health of addicts through its hospital-like atmosphere.

Admission to the treatment program came in two forms. First, any person federally convicted who fit the criteria of a drug addict was eligible for transfer or sentencing to one the two narcotic farms. Federal prisoners were given priority; however, if space permitted, a person who fit the criteria of an addict could voluntarily apply for admission.³⁰ Officials consistently had to reject volunteer applications due to space limitations. The staff processed an average of 260 voluntary applications a month, but could accept only about a third of those.³¹ During the forty years of operation, only one-third of the patients at the Lexington Narcotic Farm came for voluntary treatment.³² The Lexington Narcotic Farm admitted patients east of the Mississippi River, while the Fort Worth Narcotic Farm received patients from the west.

Upon admission to the institution, the staff photographed voluntary as well as remanded patients, gave them an identifi-

cation number, issued a uniform of grey cotton pants and shirt, and strip searched them for contraband-procedures similar to those of traditional prisons. Patients often tried to conceal narcotics and drug paraphernalia in an attempt to smuggle it inside the institution. Staff found narcotics and paraphernalia in the soles of shoes, in hollowed-out books, as well as hypodermic syringes disguised as fountain pens.³³ Despite efforts by officials, patients still found ways to sneak drugs into the facilities. "I wasn't in Population for two weeks before I made a connection for Dilaudid," William S. Burroughs, Jr. wrote. "That's synthetic morphine, very fine, and with all the money

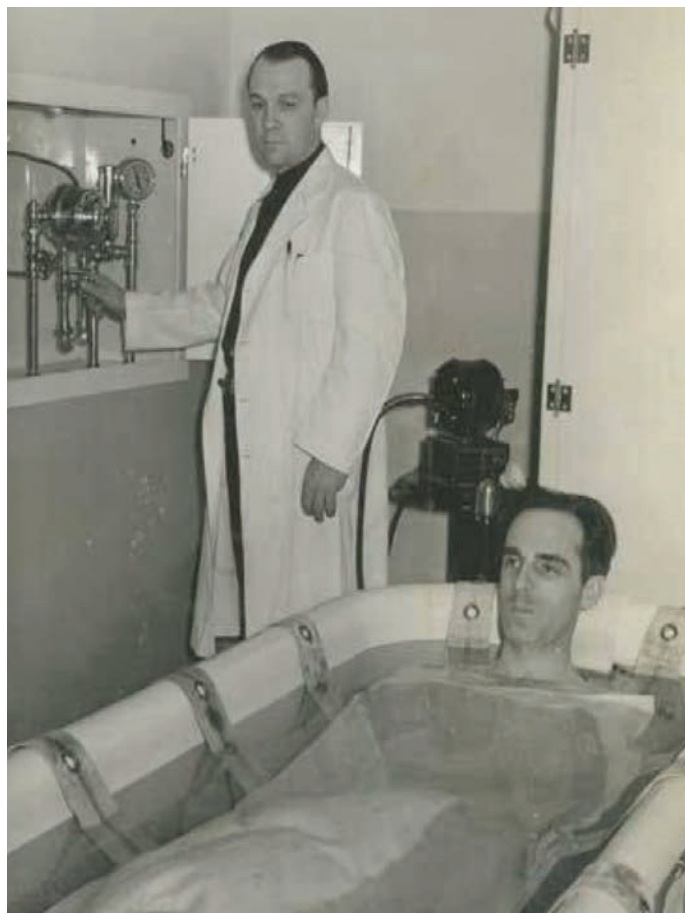


Figure 2: Flow bath used in the detoxification ward (Lexington MSS).

they are spending on the damn moon, you'd think they'd be able to keep junk out of Narco."³⁴ The problem of contraband remained endemic throughout the history of the Lexington facility.

After admission, a complete medical physical followed to evaluate the general health of the patient. Addicts often suffered

²⁶ Weppner, 27-29.

²⁷ Campbell, Olsen, and Walden, 43.

²⁸ Campbell, Olsen, and Walden, 15.

²⁹ Clarence L. Cooper, Jr., *The Farm* (New York: Crown Publishers Inc, 1967), 15.

³⁰ National Institute of Mental Health Division of Narcotic Addiction and Drug Abuse, *Lexington; The Clinical Research Center, Addiction Research Center*. (Washington, D.C.: GPO, 1971), 1.

³¹ National Institute of Mental Health Division of Narcotic Addiction and Drug Abuse, 43.

³² Campbell, Olsen, and Walden, 62.

³³ Acker, 164.

³⁴ William S. Burroughs, Jr., *Kentucky Ham* (Woodstock, NY: The Overlook Press, 1984), 85.

from many secondary side effects of their addiction as well as other unrelated ailments. A large percentage of addicts who injected their drugs contracted hepatitis, tetanus, and various skin infections from improperly cleaned needles or sharing needles with those already infected. Doctors at the facility frequently treated patients with venereal diseases, a common hazard of the drug subculture.³⁵ Other diseases that afflicted addicts included: tuberculosis, cancer, heart disease, high blood pressure and diabetes. Many of the patients had had little access to health care due to lack of funds to pay for a doctor, and most hospitals refused to treat addicts.

The initial medical examination was not the last for the patients. The Lexington Narcotic Farm maintained an extensive staff of professionals, including physicians, surgeons, psychiatrists, psychologists, nurses, social workers, pharmacologists, and dietitians, who constantly monitored patients' progress throughout their stay.³⁶ Several addicts resented this constant scrutiny, in particular the incarcerated patients. In 1967, Clarence Cooper, an addict sentenced to five years of federal incarceration for possession, sarcastically described these evaluations in his first few weeks at the Lexington Narcotic Farm: "Right down on the first floor, next to the hack's office, there is a bulletin board whose every dokie's duty it is to read each morning and noon and night because sometimes you'd be on call for tests on Branch-5, the Pysch level, or maybe they'd need to jack you off for some blood, or some unbelievable mad hatter of a social worker wanted to talk to you."³⁷ The constant formal and informal evaluations of a patient's progress by Lexington staff served as a significant part of the treatment program.

The treatment regimen for patients at the Lexington Narcotic Farm, consisted of three phases. The first stage following admission and evaluation was the withdrawal stage. Lexington's medical withdrawal program was unlike the prison system, which merely incarcerated drug addicts long enough to complete the process of withdrawal, forcing them into a cold-turkey method of withdrawal. Cold-turkey withdrawal, or the abrupt removal of the substance, was neither the safest nor most successful method.³⁸ Depending on the type of addiction, going cold-turkey could cause dangerous convulsions or even death.³⁹ One patient

³⁵ Sidney S. Louis, "Treating the Addicted" (an essay prepared for presentations of the Education and Training Section, ca. 1967), 5-6. Lexington MSS.

³⁶ "The Center; In Historical Perspective," 4

³⁷ Cooper, 29.

³⁸ Campbell, Olsen, and Walden, 74, 165.

³⁹ Linedecker, "Escape."



Figure 3: Patient participating in mandated vocational therapy (Lexington MSS).



Figure 4: Dr. Sidney S. Louis leading a group therapy session, ca. 1960s (Lexington MSS).



Figure 5: Patients presenting a musical theatre performance in the auditorium of the Lexington Narcotic Farm (Lexington MSS).

of the Lexington Narcotic Farm recounted her experience in a traditional prison going through withdrawal: “By the second day I was in very bad shape. They gave me nothing. I threw up all over myself, my hair, my clothes...”⁴⁰ Even hospitals often neglected to give addicts adequate medical care and observation required during withdrawal. “They gave me some aspirin,” a young man recounted of his experience in a state hospital near Detroit, “and locked me up for two weeks.”⁴¹

The process of withdrawal with its unpleasant symptoms began as the body readjusted to the absence of a foreign chemical upon which it previously depended on.⁴² Medical officials at Lexington used morphine or methadone as withdrawal drug

therapy. Other treatments for addicts going through withdrawal included “flow-baths” to help soothe patients’ nerves (see Figure 2).⁴³ In the care of the doctors and nurses of the detoxification ward, patients were constantly subjected to medical observation, including bed checks every half hour, during the process of withdrawal.⁴⁴ Medical professionals in the detoxification ward prevented patients from being dehydrated or malnourished during the process. The hospital environment also lowered the chances of addicts getting pneumonia or other illnesses due to weakened immune systems from the withdrawal process.⁴⁵

The second treatment phase took the remainder of a patient’s



Figure 6: Patient in the ARC preparing a dose of narcotics for research (Lexington MSS).

40 Courtwright, Joseph, and Des Jarlais, 305.

41 Bill Powell, “Winning the Drug-Abuse Battle; Young CRC Patients tell of Addicts Hell on Earth,” *The Lexington Herald*, October 14, 1970. CRC MSS.

42 Louis, “Treating the Addicted,” 1.

43 Campbell, Olsen, and Walden, 74, 82.

44 Jonathan D. Rosenthal, M.D., “The Management of Barbiturate-Sedative Drug Withdrawal,” 5. Lexington MSS.

45 Acker, 164.



Figure 7: Patient under observation in ARC for an experiment (Lexington MSS).

time at the institution. Bed times, meal times, therapy, recreational activities all had a set time each day. Assigned jobs and activities created a rehabilitative environment where patients “lived by the rules approximating those of society” and learned to respect the rights of others while learning personal responsibility.⁴⁶ Everyone within the institution held a particular job for twenty hours a week, considered “vocational training.” (see Figure 3).⁴⁷ The most common job assignment for male patients was the farm, caring for the animals or working in agriculture. The farm was symbolic of the institution, evidenced by its original name, “U.S. Narcotic Farm.” The working farm continually found success among the local dairy and agricultural industry. Other work assignments at Lexington included making clothing or furniture to be used within the Lexington facilities or in other federal prisons. Still others worked for the direct maintenance of the institution, doing laundry, working in the water treatment plant, maintenance, cleaning, or cooking. The automotive mechanics shop, the woodworking shop, and the metal working shop provided technical skills potentially useful to patients following their rehabilitation.⁴⁸

Beyond work assignments and training, the rehabilitation of addicts included extensive emotional therapy (see Figure 4).

⁴⁶ “The Center: In Historical Perspective,” 9.

⁴⁷ Weppner, 30-31.

⁴⁸ Acker, 165.

Psychologists and staff attempted to teach proper behavior through the routine of the program. Patients participated in group and individual therapy sessions. Initially, the high numbers of patients and shortage of staff limited the number of individual therapy sessions. At its peak in 1953, the institution treated 1,509 addicts with only about 250 staff members.⁴⁹ Therefore, most of the emphasis was placed on group psychotherapy led by a team of social workers and psychologists. However, patient therapy was integrated into every level of the administrative processes of the institution. All personnel, including vocational training staff, clerks, administrative assistants, technicians, and custodial staff, served as social and vocational training for the patients.⁵⁰ Personnel were encouraged to develop friendly, mentoring relationships with patients to assist in their social therapy. Becky B., a volunteer patient who wrote to Dr. Sidney Louis, a mentor of hers, exemplified this vital component to a patient’s therapy: “You have meant more to me with the redirection and rehabilitation that I would have never [sic] thought possible. This is certainly the type therapy [sic] that has helped me more than any other to shock me into realization.”⁵¹ The formal therapy and professional relationships with patients aided in their treatment process.

Patients also had opportunities to participate in recreational activities as a part of the rehabilitative program. Officials encouraged recreational activities during patients’ free time because they helped to build healthy interpersonal relationships.⁵² The handbook given to patients during their initial orientation to the Lexington Narcotic Farm stated that patients should make use of the recreational activities and opportunities to “make your hospital stay more pleasant.”⁵³ The auditorium was used for music, dance, and theatre, all of which were regularly produced and performed by the patients (see Figure 5).⁵⁴ An orchestra group, called the Ambassadors, even played for benefit drives and for other local institutions.⁵⁵ Patients also filled their time using the athletic field, mini-golf course, tennis courts, gymnasium, basketball court, bowling alley, and pool tables.

The third and final stage of treatment prepared patients for departure from the institution. Extraordinarily high addiction relapse rates made this final step the most important. Staff evaluated the patients in an effort to determine if they were committed to remaining sober once they were released and assisted

⁴⁹ Bromer, 30.

⁵⁰ *Annual Report United States Public Health Service Hospital*. 1957 18.

⁵¹ Becky B. to Sidney S. Louis, 10 February 1973. Lexington MSS.

⁵² “The Center; In Historical Perspective,” 11.

⁵³ Public Health Service, “Handbook for Patients,” July 1964, 20.

⁵⁴ Public Health Service, 20-22.

⁵⁵ *Report United States Public Health Service Hospital*. 1957, 24.

departing patients in securing employment and a suitable place of residence.⁵⁶ Since environment was believed to play a significant role in a former addict's probability of relapse, the staff did all they could to help patients return to the ideal setting, a good job and a welcoming family.

While rehabilitation of addicts remained an important goal, Lexington also served as a center for research on addiction. From its founding, the Lexington Narcotic Farm served as the home to the Addiction Research Center (ARC), a facility that established the foundation for the current scientific understanding of addiction and drug abuse (see Figures 6 and 7). With the development of a greater understanding of addiction and its causes, officials believed drug addiction could be "cured."⁵⁷ The field of addiction research and knowledge about narcotic addiction was in its infancy at the time of the ARC's opening. In 1934, the U.S. Penitentiary at Fort Leavenworth, Kansas, began clinical investigations of the addicting properties of drugs. When the Lexington Narcotic Farm opened in spring of 1935, these operations were promptly transferred to the state-of-the-art Addiction Research Center.⁵⁸

Over four decades, the ARC worked to understand the fundamental causes of addiction, research the biological basis of intoxication, and examine the effects of many drugs in a controlled setting. Researchers sought to discover new treatments and methods of prevention as well as to refine addiction diagnosis strategies.⁵⁹ The staff of the ARC pioneered a multidisciplinary approach to addiction, which included biologists, chemists, biophysicists, psychiatrists, pharmacologists, and psychologists.⁶⁰ Work in the research lab ranged from basic chemistry to animal and human research.⁶¹ Drugs tested on patients included heroin, morphine, cocaine, marijuana, LSD, tranquilizers, sleeping pills, and many more.

After WWII, many pharmaceutical companies developed and marketed a substantial number of potentially addictive drugs in the form of painkillers, tranquilizers, amphetamines, and barbiturates. The World Health Organization, the United Nations, U.S. and foreign governments turned to the ARC to test these new synthetic "wonder drugs." The ARC conducted research on over one hundred newly developed synthetic nar-

cotic analgesics and antagonists. The studies and pharmaceutical research conducted in the ARC helped develop drugs with lower abuse potential such as propoxyphene, pentazocine, nalorphine, and naloxone.⁶² Greater international drug controls, warning labels about operation of vehicles or heavy machinery, and more caution in writing prescriptions for addictive medications resulted from this valuable research and experimentation conducted by the ARC.⁶³ The ARC pioneered medical addiction research and promoted the medicalization of addiction and treatment.

ARC's privileged status in drug research relied on its relationship to the incarcerated population at Lexington. Incarcerated men with a considerable drug experience could volunteer for experiments conducted by the ARC. To reduce statistical error, the ARC used only men, and for follow-up study reasons, only those who had more than a year left of time to serve at the Narcotic Farm could apply.⁶⁴ Although ARC research relied on volunteers, there were significant incentives for patients to participate. "Little Joe," as he was called by fellow patients, explained one of these incentives for participation in ARC experiments in Clarence Cooper's autobiography, *The Farm*: "And they give me two days' good time for every test, and you see how this cut the 10 year bit down? Already I earned 288 days outside my statutory goodtime, just from goin on experiments."⁶⁵ Some addicts participated just to experience one more high; a desire that never drifted far from many former addicts' minds. ARC was the world's premiere laboratory in narcotic research precisely because it "had access to a captive population of highly experienced and knowledgeable drug addicts."⁶⁶ However, many of the ARC's practices were, by contemporary standards, highly unethical. Officials used former addicts' intense desire for a high to their advantage. Test subjects were often subjected to study procedures that adversely affected their health. For the studies that tested the effects of various narcotics on the body and the process of withdrawing from those substances, researchers purposefully re-addicted participants to narcotics, observed their intoxicated state, and documented the subsequent withdrawal. The ARC's usage of prisoner subjects in studies, although morally suspect, led to several breakthroughs and discoveries in the field of addiction.

Because the Lexington Narcotics Farm and the Addiction Research Center were the world leaders in the field of addiction research and treatment, the institution hosted hundreds

⁵⁶ Acker, 166.

⁵⁷ "NARA." (draft for a informational internal memorandum, ca. 1966), 7. Lexington MSS.

⁵⁸ Mary C. Gillis, "Research," *Subcommittee- Drug Abuse II; Review of Programs*, 1965, 75. CRC MSS.

⁵⁹ Simrell, 1.

⁶⁰ Gillis, 75.

⁶¹ National Institute of Mental Health Division of Narcotic Addiction and Drug Abuse, i.

⁶² "NARA," 8.

⁶³ Campbell, Olsen, and Walden, 164.

⁶⁴ Campbell, Olsen, and Walden, 164.

⁶⁵ Cooper, 191-192.

⁶⁶ Campbell, Olsen, and Walden, 164.

of professional visitors looking to learn from the facility, including many from foreign countries around the world. For example, in 1959, the Lexington Narcotic Farm welcomed professionals from Brazil, Belgium, Iran, Japan, New Zealand, Puerto Rico, Scotland, and Thailand.⁶⁷ In 1965, *The Lexington Herald* reported on visitors from Japan's National Institute of Mental Health, the University of Tokyo, Canada's Department of Health, and a Swiss doctor from the World Health Organization.⁶⁸ Staff received and filled hundreds of requests for information each year about the institution's methods of treatment, program design, and general information on narcotic addiction.⁶⁹ Requests for information and visitors from all around the world were "indicative of the continued recognition of this hospital as the source of expert information about drug addiction."⁷⁰

In addition to international visitors, guests came from every state to learn from the Lexington model. The institution received visitors from all walks of life: health professionals, students from many backgrounds, law enforcement officers, local and state officials, concerned laity, religious counselors, and military representatives.⁷¹ The Lexington Narcotic Farm provided an excellent place for visitors to learn about addiction because one could see an actual treatment center, talk with professionals providing care, and observe and meet with patients. The institution was a "living laboratory" that provided the opportunity to study and observe real treatment.⁷² The education efforts of the facility ultimately led to a fundamental change in the general perception of addiction and treatment in the United States.

By the 1960s, the perception of addiction and treatment among medical and government officials had transformed into the medical context that the institution had advocated for forty years. Dr. Howard Rusk, in 1951, concluded that the "prognosis for a cure is good" for young teen-aged addicts who were hospitalized and under treatment for their addiction.⁷³ That same year the Senate Crime Investigating Committee called

narcotic addiction a contagious disease, following the lead of Dr. Lawrence Kolb during Lexington's opening ceremony decades earlier.⁷⁴ A joint statement released by the American Medical Association and the National Research Council in 1959, concluded that "[s]uccessful treatment of narcotic addicts in the United States requires extensive post-withdrawal rehabilitation and other therapeutic services."⁷⁵ By 1965, Senator Jacob K. Jarvits remarked there was a "growing acceptance of the premise that narcotics addiction is a disease rather than a crime."⁷⁶ In testimony Senator Robert F. Kennedy before the House Judiciary Committee, expressed sympathy for addicts and their families for the emotional chaos and economic hardships the affliction inevitably brings.⁷⁷ By the seventies, even law professionals agreed with the sentiment that drug addiction was a highly communicable disease that spread rapidly, as opposed to just an illegal act requiring incarceration.⁷⁸ The assumption that addicts were genetically different and weak-minded inferior humans was generally discredited by government officials and professionals in the fields of medicine and law.

Similar to medical and governmental professional perception, the general public began to accept that addiction was first and foremost a medical problem. Society generally accepted addiction as a medical ailment and that the best treatment occurred in a medical context. An East Harlem Protestant parish wanted "narcotics addiction to be treated as a medical problem, not a criminal one."⁷⁹ Its reverend, Norman C. Eddy, travelled to the state capitol to push for legislation to change hospitals' current policy of rejection of addicted individuals seeking treatment.⁸⁰ The following year, the General Federation of Women's Clubs at International Convention adopted a resolution that, "strongly urges compulsory hospitalization for addicts...to cure, rehabilitate, and prevent further addiction."⁸¹ At a hearing in New York City to discuss combating narcotic addiction, witnesses appealed to city officials for greater research and more hospital beds for those going through narcotics withdrawal.⁸² In 1971,

67 "Scientific Leadership." *Annual Report United States Public Health Service Hospital*, 1959. CRC MSS.

68 "Foreign Medics Tour USPHS Hospital," *The Lexington Herald*, February 20, 1965. CRC MSS.

69 *Annual Report United States Public Health Service Hospital*. 1959.

70 *Annual Report United States Public Health Service Hospital*. 1957, 18.

71 "NARA," 10.; National Institute of Mental Health Division of Narcotic Addiction and Drug Abuse, 13.

72 "The Education and Training Section," (draft for an educational brochure, ca. 1970), 1. Lexington MSS.

73 Howard A. Rusk, "Headway Seen for Control Of Teen-Aged Narcotic Users; Alarm over Widespread Addiction Aids Development of National Problem," *New York Times*, May 20, 1951. PHN.

74 "Text of Conclusions and Recommendations of the Senate Crime Investigating Committee," *New York Times*, September 1, 1951. PHN.

75 US Treasury Department Bureau of Narcotics, 15.

76 *Congressional Record*, 89th Cong., 1st sess., 1965, 111, pt.1:12575.

77 "Congressional Hearings on Civil Commitments," (testimony released to parties involved, 1965). CRC MSS.

78 Judianne Densen-Gerber, "A Visit to Lexington." *New York Law Journal* December 29, 1971. CRC MSS.

79 John Wicklein, "Parish is Seeking Care For Addicts; East Harlem Group Wants Heroin Users to be Treated Medically," *New York Times*, February 23, 1959. PHN.

80 Wicklein.

81 US Treasury Department Bureau of Narcotics, 12.

82 Peter Flint, "City Bids U.S. Help it Combat Addiction," *New York*

in a *New York Times* article titled, “Addiction: Chemistry is the New Hope,” the reporter claimed that methadone treatment in addiction programs in New York (first experimented with and used on patients by the ARC) produced positive results for heroin users to stop abusing it regularly.⁸³

Despite the early optimism, Narco’s days were numbered. The eventual closure of the facility occurred for three reasons: continued recidivism, financial exigency, and political pressure. All resulted in the decision by political officials to close the Lexington Narcotic Farm.

First, the readmission rate due to patients’ inability to remain off drugs after their release from the CRC was alarming. Dr. Richard Stephens conducted a study in which addicts listed their reasons for reverting back to drugs after release from the Lexington Narcotic Farm. He found three general reasons for relapse: to alleviate interpersonal stress, craving or enjoyment of the euphoric effects, and the “magnetic” pull of the addict subculture. Researchers conducted several follow-up studies of former Lexington patients. One study in 1969 found a relapse rate of over 90% since their release from the Narcotic Farm.⁸⁴ A study published in *Public Health Reports* in 1970 that examined patients from the Narcotic Farm’s opening to the end of 1966 and found that for the 43,000 addicts admitted, over 77,000 re-admissions occurred. This means that a great majority of the patients were admitted more than once.⁸⁵ The revolving door of Lexington was not just a statistical fact; it pointed to the difficulties addicts faced after their return to their communities. Many addicts maintained that although their physical dependence was gone, their mental dependence was just as strong after their third year of sobriety as it was their first day of sobriety.⁸⁶ Brenda, an addict who frequented Lexington both voluntarily and by court mandate, became a victim of relapse as well: “When you’re confined [at the Lexington Narcotic Farm] its [sic] very different from when you hit the street. You have no direction when you come out of the hospital. While you’re in the hospital, you have something to do. It’s planned.”⁸⁷ Officials also knew from early on that enforced cures, like those mandated for the prisoners at Lexington were

less effective than voluntary ones.⁸⁸

Second, questions of cost-effectiveness surfaced prior to the CRC’s closure. Readmission to Lexington cost the federal government millions of dollars. Local treatment centers by the late 1960s became increasingly widely accessible and arguably more cost-effective. The Prettyman Commission, the advisory committee to the executive office on narcotic addiction, estimated that the net cost of treatment in a community clinic would amount to about three to four dollars a day per patient. Treatment at the Narcotic Farms cost taxpayers about twelve dollars a day per person treated.⁸⁹

The third, and ultimately precipitating cause, was political pressure. Two events caused an uproar in Washington and led to rapid efforts to keep them from becoming media frenzies. The first scandal involved the ARC and its participation in CIA experiments with LSD.⁹⁰ The CIA spent millions of dollars from the early 1950s through the late 1960s on Project MK-ULTRA, an attempt to find mind-control techniques by experimenting with substances like LSD. Many of the test subjects did not consent to participating in the experiments, some of which resulted in deaths, including Dr. Frank Olson and Harold Blauer. When information came out in the early 1970s about the CIA experiments, investigations ensued including the Congressional Church Committee and the Presidential Rockefeller Commission.⁹¹ Although the results of the investigations did not come out before the CRC closed, federal officials certainly knew that the ARC was deeply implicated in the program. The specific case of MK-ULTRA highlighted the government’s long term medical experimentation on unwitting subjects and the ARC was tarnished by its proximity to egregious cases.

From 1932 until 1972, the Public Health Service conducted the Tuskegee Syphilis Experiment, where over 300 African-Americans with syphilis participated in a clinical study researching the natural progression of the disease. When penicillin became available in the late 1940s as an effective cure for the disease, the researchers withheld information about the treatment and failed to treat patients with penicillin to cure their ailment. The

Times, May 17, 1960. PHN.

83 Richard Severo, “Addiction: Chemistry Is the New Hope,” *New York Times*, March 19, 1971. PHN.

84 John A. O’Donnell, *Narcotic Addicts in Kentucky* (Chevy Chase, MD: Department of Health, Education, and Welfare, 1969), 1-4.

85 John C. Ball, William O. Thompson, and David M. Allen, “Readmission Rates at Lexington Hospital for 43,215 Narcotic Drug Addicts” *Public Health Reports* 85, No. 7 (July 1970): 610-11.

86 Prescor, 5-6.

87 Courtwright, Joseph, and Des Jarlais, 301.

88 Prescor, 5.

89 The Prettyman Commission, 9.

90 Campbell, Olsen, and Walden, 165, 186.; Richard Ashley, “The Other Side of LSD,” *New York Times*, October 19, 1975. PHN; “Private Institutions Used in CIA Effort to Control Behavior,” *New York Times*, August 2, 1977. PHN.

91 “The Select Committee to Study Government Operations with Respect to Intelligence Activities, Foreign and Military Intelligence.” Church Committee Report, no. 94-755, 94th Cong., 2nd Sess., Washington, D.C.: United States Congress. 1976. P. 392. <http://www.aarclibrary.org/publib/church/reports/book1/html/ChurchB10200b.htm>.

experiment became infamous in the early 1970s, right around the same time the CIA experiments became known by government officials. Although the experiment took place in Alabama and did not have direct involvement with the ARC, it was another instance where the Public Health Service conducted unethical experimentation on patients.⁹²

In a memorandum to the Director of the Clinical Research Center on January 18, 1974, the CRC received formal notification of the transfer of the facility to the Bureau of Prisons. The CRC began “reduction-in-force proceedings...in preparation for a February 17, 1974 transfer date.”⁹³ Unfortunately, many of the records were destroyed or thrown out, amounting to the loss of invaluable research on addiction.⁹⁴ With haste and secrecy, the transfer of facilities to the Bureau of Prisons ended four decades of a sanctuary for narcotic addicts to recover from their addiction.⁹⁵

Although the haven for narcotic addicts in Lexington, Kentucky, closed in 1974, the legacy of the half century experiment remained. It served as a pioneer in the transformation of the perception of narcotic addiction and treatment from the view is addiction as a moral weakness to a medical problem. In the first half of the 20th century, the public believed narcotic addiction was a vice, perpetuated by biologically and morally inferior, weak-minded humans. From its initial establishment, the Lexington Narcotic Farm maintained the principle of addiction within a medical context. Eventually, the common perception followed suit, resulting in the overall acceptance of the medicalization of addiction by the general public, medical professionals, and government officials.

The institution initially served as one of the only places a person could turn to seek treatment from the lowest depths of their addiction. The Addiction Research Center provided the base of scientific knowledge of narcotic addiction as the premiere laboratory of its kind in the world. Researchers and the medical staff of the Lexington Narcotic Farm agreed that addiction was a chronic, relapsing disease, long before it became widely accepted as a mainstream belief.⁹⁶

The decentralization of addiction treatment to community-based programs marked the end of an era for the Lexington

92 James H. Jones, *Bad Blood; The Tuskegee Syphilis Experiment* (New York: The Free Press, 1993).

93 Elmore S. King to Chief, Clinical Research Center, January 18, 1974. CRC MSS.

94 Louis, “The Closing,” 3.

95 Nancy D. Campbell, *Discovering Addiction* (Ann Arbor, MI: University of Michigan Press, 2007), 135; Courtwright, Joseph, and Des Jarlais, 298.

96 Campbell, Olsen, and Walden, 166.

Narcotic Farm. The shift to decentralized programs ultimately resulted from the successful efforts of the institution to educate the public that addiction was a medical ailment. Once the perception changed from the earlier belief of addicts as crazed criminals, the centralized, isolated facilities of the narcotic farms were no longer needed. The closure of the Lexington Narcotic Farm marked the success of the medical model but an end to institution that made the medicalization of addiction possible. Regardless of its name, “Narco,” “Lex,” or “U.S. Narcotic Hospital,” its patients and doctors knew exactly what the institution stood for: the medicalization of narcotic addiction and treatment. 🌀

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Erin Weiss

Erin Weiss, from Woodbridge, Virginia, graduated summa cum laude from Virginia Tech with a bachelor's degree in History and interdisciplinary studies in May 2010. She is currently pursuing a master's degree in Secondary Social Studies Education and in History at Virginia Tech. Her project "A New Deal for Junkies" began as a senior seminar history class with Dr. Robert Stephens. A large part of her success is owed to his thoughtful and challenging guidance, encouragement, and his confidence in her abilities. Named an ACC Scholar in spring of 2010, Erin received funding to conduct archival research in Lexington, Kentucky, and Atlanta, Georgia. Erin presented her work at the annual ACC Meeting of the Minds at Georgia Tech last April and at the Virginia Social Sciences Association Conference and the Virginia Tech Undergraduate Research Conference.



Adapting the Historical Wedding Dress

Examining the 1900s, 1920s, and 1930s

Article by Keri Butterfield & Allison Donohue

Researcher: Megan Carey

The evolution of the wedding dress has changed significantly since the early years of the 1900s, changing not only in design but also in fabric and the process of construction. Megan Carey, a recent Virginia Tech graduate with a degree in Apparel Design and Theatre Arts, chose to examine this evolution in researching and designing three wedding dresses centered around the turn of the century; she concentrated on adapting the original style by adding modern influences, all while preserving the historical element of the era. Out of the three dresses, the 1920s dress named Lacy Dame, was entered into the 2010 ITAA Conference and chosen to be presented at the Live Gallery runway show in October 2010.

Carey, who has been designing clothing and costumes since high school as well as working on costumes with

Photos courtesy of Megan Carey

the Theatre Department, created her first wedding dress, inspired by the 1930s, in Spring 2009 as an assignment for one of her classes. With the encouragement of professor, Dr. Jihyun Kim, Carey decided to expand her project into undergraduate research by creating two other dresses to represent the first decade of the 20th century and the 1920s. These three eras have very distinct styles that make them recognizably different and yet linked.

In completing the project, Carey had to intensively research the time period, design the dress based on this information, and finally construct the dress. She admits that the initial research of the piece is hugely rewarding, especially with a project centered on the elements of a specific time period. “I look at everything,” Carey states, “from books, to online sources, magazines, and photography.” It was this research that led Carey

to create a design that mimicked the 1920s flapper era, with a significantly lowered waistline and cowl neckline while introducing the modern element of the detailed cut-out of the lace.

Dr. Kim, the primary mentor during the project, claims that the design was created by Carey’s ability to “push the envelope to create a one-of-a-kind design by going beyond inspirations from the 1920s.” Carey’s extensive research allowed her to understand the elements of the era that she wished to include while altering others to mirror her own personal style.

Once the initial research was completed, Carey began construction on the dresses. The 1900s dress focused on corsets, layers, and textures, while the one from the 1920s was heavily influenced by the flapper style. Lastly, the 1930s dress was greatly inspired by old Hollywood glamour. “Megan paid close attention to detail and spent endless hours on this piece... From lace appliqué with pearl beading to perfecting the architectural lace overlays at dropped hip level, I love every aspect of the piece,” explained Dr. Kim. In order to go beyond simply recreating a piece, she added unique modern elements, involving many changes and adjustments throughout the process. According to Carey, these small adaptations “transformed this dress from ‘just another wedding dress’ to a true ‘modern adaptation of a historical wedding dress.’”

To begin, Carey used techniques that she had learned in one of her Apparel and Design classes, Draping and Pattern Making. To form a working pattern, she draped the dress on a form with muslin. This gave her the ability to visualize the overall design and make changes before continuing on with fashion fabric. Even while working with the final fashion fabric, Carey admits that she continued to make minor changes until she was completely satisfied with the piece. “This piece [Lacy Dame] speaks for itself what it would be like to be a lady in the 1920s and how it can be worn by a modern lady who can bring the 1920s beauty in the contemporary nuptial setting in the 21st century,” added Dr. Kim.

Lacy Dame received much acclaim upon its completion; it was first showcased at the 2010 ITAA Conference and then selected for the Live Gallery runway show the following fall. In addition to paperwork, applications, and customs forms—the runway show was held in Canada—Carey had to make sure her garment was in perfect condition to compete. “The construction of the dress has to be top of the line. If the garment’s construction does not look acceptable, the judges will not allow the garment to be shown in runway show,” said Carey. While she was not able to attend the show, the pictures demonstrated that the work was a complete success. “There is nothing more satisfying than seeing your finished garment stylized and strut-



Carey’s intense historical study and iterations of vintage-inspired dresses led to the design of the Lacy Dame dress.

ting down the runway,” she claims. In addition to the thrill of seeing the photographs of her work displayed, the competition also offered helpful comments. For all entries, the judges offered feedback and constructive criticism to help the designer to continue to develop and grow in their abilities.

In addition to the rewarding feedback received from the judges on her design, Carey claimed that having her work showcased in the window display in Wallace Hall was hugely gratifying, for it allowed her “to showcase the work she had done.” The display included *Lacy Dame*, as well as the other two dresses from the collection—*Edwardian Pearl* and *Vintage Gardenias*—allowing one to recognize the dresses as a cohesive unit as well as individual looks.

While Carey’s success at the ITAA Conference is highly regarded, her own determination in completing an undergraduate research project is greatly admired. Dr. Kim notes that she advises “the student to be an independent researcher and an owner of his or her research project,” thus allowing one, with minimal guidance, to creatively design one’s own project and “make final decisions through problem-solving.” It is in this way that Carey was able to design all three dresses with a twist to the historical designs.

Vintage Gardenias was the first wedding dress that Carey designed for Dr. Kim in her Senior Studio course on Draping, sparking her inspiration. It was this dress that led Carey to, “give a re-birth to the 1920s by re-interpreting the era and personalizing the design piece with her signature,” stated Dr. Kim. Carey claims, “I wanted the dresses to be my designs and not just recreations.” With the completion of the collection, and the success of *Lacy Dame* in the runway show, it is evident that she succeeded in doing just what she aspired to do. 🌀



Right: Carey’s 1920’s inspired wedding dress, Lacy Dame, at a live gallery runway show in Canada.



Linux Laptop Orchestra

*Article by Ryan Prest & Karen Spears
Researcher: L2Ork*

Combining computer programming, musical ingenuity, and rousing performances, the Linux Orchestra at Virginia Tech has been making the best kind of noise since 2009. As the brainchild of Ivica Ico Bukvic, assistant professor of music, the so-called “L2Ork” utilizes Nintendo Wii videogame console motion technology and Linux-based software to create sounds that can be skillfully blended into music. The huge range of sounds produced by the technology is an indication of the platform’s potential to produce a rather unusual but fascinating kind of music.

In simple terms, each motion or button on the Wiimote and Wii Nunchuk controllers results in a different sound depending upon the instrument programmed into the personal laptop stations each performer utilizes. The L2Ork can produce the sound of any classical instrument and enables the composer to create music on a limitless canvas. Classical composition can be created by using the L2Ork. Consequently, the platform offers those who may otherwise

never have the opportunity to perform to be immersed in the creative music creation process.

The L2Ork has its beginnings in Bukvic's enthusiasm for Linux and the work done at Princeton and Stanford Universities, where researchers created laptop orchestras. Utilizing the free, open-source Linux operating system, Dr. Bukvic envisioned the L2Ork as an affordable form of the laptop orchestra that would still be able to function easily and efficiently. Working alongside Dr. Tom Martin, associate professor of electrical and chemical engineering, Bukvic began to seek funding for the L2Ork and managed to secure support from a number of diverse groups and organizations, including the College of Liberal Arts and Human Sciences, other university departments, and corporate sponsors. From there, the orchestra began to firmly take shape. The project first took off in May 2009, when faculty and student researchers began to work out the technological aspects of the orchestra including constructing hemispherical speakers for the L2Ork, constructed by seven undergraduate researchers to interface with the Linux Orchestra software.

Some may see the L2Ork and deem it simply an upgraded version of Guitar Hero, but it is more akin to traditional ensembles than a video game. Each person involved must work in conjunction with other performers or the musicality of the piece is compromised. It sounds difficult—and it is—but the software benefits from the vast customizability of Linux. The difficulty level of the system can be adjusted—first-timers can perform complex pieces with help from the computers and veterans can turn off all assistance. For example for a new user, the program can complete cues or simplify the input sensitivity. The beginner might only need to simply move the Wiimote controller, whereas an advanced user would control every nuance of the instrument to perform the same piece, given that they have had a lot of practice.

Since its inception, the L2Ork has enlisted the skills of a large number of undergraduates in academic disciplines ranging from the predictable—computer science, music technology, or theater arts—to majors such as chemistry and political science. Some serve as programmers, some as dedicated performers, and some as both. The result of these talented students' efforts is a cohesive group that is constantly developing and improving.

This opportunity also serves as a medium for the L2Ork students to engage with the community and bring music to the Roanoke Valley area. Last year, for example, the L2Ork worked with ten enthusiastic and focused fifth-grade students in the Boys and Girls Club. Virginia Tech students instructed the fifth graders in the basics of the Linux Orchestra, slowly allowing the children more and more freedom in composition and experimentation. Bukvic felt that his engagement with the

Boys and Girls Club was “one of the most rewarding experiences” of his career, also noting his experience with L2Ork at last year's spring Digital Interactive Sound and Intermedia Studio (DISIS) event. L2Ork plans to do another round of the program with the Boys and Girls club for the spring 2011 semester and will perform with them again as a part of the Spring DISIS event.

L2Ork has been busy traveling to universities all over the country. In 2010, the Linux Orchestra visited universities including Purdue, Duke, Indiana, and North Carolina Chapel Hill. They also performed in the National Society for Electro-Acoustic Music in the United States (SEAMUS) Conference in Miami, Florida, and will be performing at DISIS in the spring. The L2Ork hopes to go international as well and share its unique sound. In May 2011, the L2Ork plans to tour Linz, Budapest, Ljubljana, Berlin, Utrecht, Amsterdam, Hamburg, and Paris. In addition, to keeping up with practicing and touring, L2Ork even plans to record a new CD.

Considering the youth of the organization, the Linux Orchestra has seen impressive growth thus far. Within two years the faculty and student members of the L2Ork worked to build a vague idea into tangible results: recording opportunities, sold out venues, and engaged children in the Boys and Girls Club. Considering the low cost, wide range of options, and refreshing depth of musical possibilities, L2Ork appears set to continue innovating music and entertainment as the creative musicians behind it push the traditional boundaries of ensemble further. 🎧



Lap top orchestra group L2Ork performing in the hallway of Squires Student Center.
Facing page: “Hemispherical Speakers” of the Laptop Orchestra.



Quinta da Regaleira

*Article by Carol Davis & Jordan Keeney
Researcher: Mikhelle Taylor*

Perusing the clearance table at a University of Arkansas bookstore five years ago, Mikhelle Taylor stumbled upon a coffee table book titled *My House, My Paradise*, which contained pictures of unique houses from around the world. Included in it was a section about an unusual Portuguese mansion constructed in the decades that bookended the turn of last century: Quinta da Regaleira. António Augusto de Carvalho Monteiro, a well-to-do Brazilian capitalist whose family was from Portugal, constructed the estate in the Sintra region of Portugal as a summer residence for close friends and family. The rich ornamentation, labyrinthine passages, and otherworldly appearance of the site piqued Taylor's interest, but it wouldn't be until years later that this serendipitous discovery would yield a fascinating project of study.

During her initial investigation of the site, Taylor began learning about Portugal's nationalistic epic, *Os Lusíadas*. Some researchers suspected that Monteiro may have, in fact, constructed the Regaleira as a physical, artistic depiction of the

16th century poem. *The Lusíads* was written by Luis Vas de Camões as a cultural epic capturing the mythological identity of Portugal, much the same way the *Iliad* and the *Odyssey* had for ancient Greece. Taylor believed this site embodied many of the same intentions found in this epic: an attempt to define both the past and the promised future of the Portuguese people as well as to provide a “prophetic understanding of their place in the world.”

Taylor’s interests in architecture and the impact of the built environment on both individual and collective human experience were informed by her prior studies in social work, classical studies, architectural philosophy, and the traditional arts. The blending of these experiences prepared her for the challenge of researching Quinta da Regaleira as a cultural representation of Portugal’s identity. Specifically, Taylor wanted to delve into Carvalho Monteiro’s intentions behind the architecture and gardens of this site.

Monteiro’s house spoke to an area of particular academic interest to Taylor: phenomenological architectural theory. This theory deals with how man-made spaces evoke meaning and communicate ideas to those who encounter and inhabit them. A building and its surroundings are a performance space, where the occupants serve as both “actor” and “audience.” Just as a dramatic set designer evokes mood and meaning through lighting, backdrops, and the form and placement of set pieces, an architect can achieve similar ends with a building. Using design and site, the architect can create spaces to guide the observer’s experience while simultaneously defining the symbolic role the observer plays in the building’s “plot.”

Quinta da Regaleira looked like the perfect subject for research in this theory. For Taylor, two classes—one with Dr. Max Stephenson’s “Nonprofit Leadership and Governance” and the other, Dr. Matthew Gabriele’s “Warriors and Saints” proved to be the catalyst for her project. As a part of his course on leadership in nonprofit organizations and NGOs, Dr. Stephenson presented some of his work on the collective myths and stories of a society—that is, cultural imaginaries. He discussed the power of cultural stories to motivate leadership and public participation. Dr. Gabriele’s class similarly focused on how cultural memory is created, particularly by tales of heroic figures and their mythic quests. These quests, often referred to as city-founding, frequently result in the creation of a culture or nation and are deeply rooted in a society’s consciousness—Aeneas and Rome, Abraham and Israel, George Washington and America. For Taylor, these classes illustrated connections between Monteiro’s Quinta da Regaleira and the mythical power of the *Lusíads* in Portuguese society. She spoke to Dr. Gabriele about becoming her research advisor for her idea, and the project began to take shape.



The mansion and chapel viewed from a lush overlook on the 10-acre estate.

Facing page: A statue of Hermes guides the path to the mansion.

Dr. Gabriele encouraged Taylor’s initial interest in the topic by providing the necessary guidance to help her discover available resources. His expertise in multidisciplinary research also helped craft the project into something different than most highly focused projects. Taylor’s research instead combines a number of different elements, all of which relate to each other in a sophisticated, highly engaging manner. Dr. Gabriele was able to hone the project’s focus by limiting its ambitious scope, while expanding Taylor’s knowledge on the subject.

The lack of research done in English on Quinta da Regaleira necessitated personal experience to supplement the project. In order to do this, Taylor would need to travel to Portugal to

view the house firsthand. To help finance the trip, Dr. Gabriele encouraged her to apply for an ACC research scholarship and assisted her in developing a detailed proposal to submit.

The ACC Undergraduate Scholars program recognizes unique undergraduate research projects in the twelve institutions of the Atlantic Coast Conference and awards \$2000 grants to fund winning projects for materials—in Taylor’s case, travel. The grant allowed her to explore Quinta da Regaleira and add a level of depth and personal interaction not possible for many projects.

Her trip allowed her to better understand local perspectives and attitudes towards the mysterious house. Quinta da Regaleira was built during a time fraught with political upheaval and a loss of national identity. It is vital, then, to accurately understand the placement of this architectural epic in its cultural context.

By exploring the mansion personally, Taylor was able to experience the fascinating statues, the winding staircases, and the eerie and mysterious aura of a house steeped in cultural mythology. Part of her exploration included simply seeing parts of the house not pictured in books.

In an interview Dr. Gabriele mentioned the importance of visually and spatially understanding the estate and how it painted a clearer picture of its possible uses. He gave a parallel example from his own field of study: the daily tasks of medieval monks become much clearer when one has seen their living quarters, the church in which they worshipped, and the garden in which they grew their food, all in relation to each other.

Carvalho Monteiro’s partnership with the scenographer Luigi Manini brought together a vision—the theme of the initiatory journey expressed in the *Lusiads*. He also brought a means to achieve that vision—Manini’s expertise in visual creation and knowledge of how dramatic scenery can enhance a story. Monteiro’s vision was multidisciplinary by its very nature; understanding the Regaleira, then, requires an interdisciplinary approach. Taylor’s background in IDST allowed her to approach the subject from a number of different angles and from those angles to see the broader significance of the mansion in its totality. History, literature, anthropology, architecture, visual storytelling, the stickier sub-disciplines of cultural memory and mythology, not to mention Portuguese language were all essential to her study of this Cultural Heritage site itself.

Dr. Gabriele emphasized the importance of interdisciplinary problem solving when faced with any question. In Taylor’s case, the question dealt primarily with the estate’s Masonic and Templar iconography—iconography that frequently overshadowed its connection with Portuguese literature and culture in the public’s mind. From there, her research branched out to disciplines such as a biographical investigation of Carvalho Monteiro, a cultural analysis of 19th century Portugal, the



The “Initiatic Well,” a spiral staircase descending nine storeys into subterranean passageways.



Lusiads from the perspective of literary theory, even 19th century interpretations of medieval culture—Dr. Gabriele’s specialty.

As Dr. Gabriele put it, “topics aren’t disciplinary.” Rather, they provide methods, which themselves provide ways to think of a problem. In this, Taylor was forced to be flexible in her approach to her initial problem, not relying solely on any one method, be it literary, cultural, or historical. The true beauty of interdisciplinary research, however, lies in its synthesis of various perspectives. The conclusions drawn from examining a number of different approaches are greater than the sum of their parts.

In addition, Taylor had to allow her expectations and conclusions to shift with new findings. She began with an image of Carvalho Monteiro as wealthy eccentric, whose esoteric obsessions were far removed from mundane concerns or worldly affairs. Further research, however, revealed him to be instead a deep nationalist and respected leader in the public sphere, focused above all else on preserving Portugal and its national and cultural identity. His nationalism was expressed through the Portuguese cultural and political landscape, which was torn between the stable but ineffective monarchism and the volatile popular republicanism. Quinta da Regaleira reflected this as an architectural interpretation of his Portuguese identity. Thus, an accurate image of Monteiro’s role in society is needed to fully understand his intentions with the site.

In short, Taylor’s research on Quinta da Regaleira combined not only academic disciplines, but a broad range of interests and experiences, including learning more about the professional research process and how to translate “I wonder…” into an academic thesis. Taylor’s project soars: it is in its variegated components and the unique blending of those elements that she truly captures the essence of the undergraduate experience. Rather than specializing, Taylor used curiosity to examine a fascinating cultural piece of Portuguese history. 🌀



*Above: Towers and turrets create diverse “stages” throughout the garden.
Below: The artificial lagoons, waterfalls, and tunnels are a marvel of late 19th century engineering.*



Millennium Man

Article by Lauren Ruiz

Researcher: Michael Jernigan

As a non-traditional student, Michael Jernigan has taken a non-traditional approach to undergraduate research. It all began with a dream in 1995. While working a full-time job as a Corrections Officer at the Rappahannock Regional Jail in Fredericksburg, Virginia in 2006, Jernigan first began inking over ten years of research. In what he had originally envisioned as a graphic novel, Jernigan soon expanded his project to develop his first full-length novel. The resulting story, *The Millennium Man*, is ten years' worth of Jernigan's research, hard work, and fine-tuning.

The novel's plot follows Jeremy Noble, a rough and tumble guy whose life has been hit by tragedy twice: first with the loss of his fiancée in childbirth, then seven years later with the loss of his daughter to leukemia. In the narrative, Noble has been chosen by the "Spear of Destiny"—the

spear that pierced the side of Christ—to be the next savior of mankind in the struggle of good versus evil.

In an additional twist, Biblical figures Adam and Eve, who have been given another chance by God to make amends for their past indiscretions, end up on opposing sides of the novel's central conflict: Eve works as an agent for the devil—Hell—while Adam joins forces with a Counsel—Heaven—made up of a werewolf, vampire, and an undead U.S. Marshall—among others—all of whom have vowed to protect the Millennium Man and guide him on his journey to fight evil.

It is often a misconception that works of fiction are solely borne of the imagination of the author. With the Millennium Man's creative adaptation of traditional Biblical narratives, research formed an integral part of the creative process for the author. "I can't place repercussions of religious events and history in today's world without knowing the story and history behind them," Jernigan notes.

Having absolutely no background in research, his initial forays into trying to find accurate and relevant information were slow. "What can I use that people will know and relate to? The story has to be grounded in reality in order for it to work," Jernigan says. "I may have wanted to put in a character based on a religious figure, but then after doing some research, you realize they are from a different time period [from your other characters], so you don't use that."

His first source was the Bible itself. With many of the characters repurposed for the novel—including Adam, Eve, Deborah, and Adam's third son, Seth—Jernigan used the text as a foundation from which to flesh out the characters' histories, their relationships with each other, and the effects their actions might have in his novel's modern setting. From there, he began searching the Internet for additional sources, then seeking out reputable books and other publications to corroborate and elaborate upon much of the information found online.

Jernigan credits the development of his research ability to Virginia Tech and his wife, a Ph.D. student at LSU. "It is a type of art form to be able to get information and to research and develop those ideas into your own article or your own story," he says. "You can't know the research until you do it, and anyone thinking [J.K. Rowling] sat there and made all that up without doing any research is really doing a disservice to the writer."

Research was particularly important for Jernigan as he attempted to frame the setting of the novel within realistic parameters. At one point in the book, for example, the characters find themselves in London, a place Jernigan has not personally visited. "The London Eye is this big Ferris Wheel [in London]," Jernigan explains. "How many people do the compartments

hold? How high is it off the ground? People that have been there have seen this, so if they read it in the book and it's realistic, they can feel as if they are right there again."

For the remaining aspects of the novel, Jernigan noted the creative freedom he was allowed in applying research to a work of fiction. Supernatural elements grounded in myth turned up various opinions, thus permitting him to pick and choose which aspects worked best for the story. In these instances, Jernigan chose to incorporate mythological material based on relatively practical interpretations. "If werewolves scratch or bite you, and you become one, why isn't the world overrun with werewolves?" he says. "That didn't make sense, so I didn't use that."

Faced with the daunting task of finding an agent and publisher for his now-finished work, Jernigan is thankful his experience has made him a better researcher. "I can filter things out and decide what valuable information is . . . being able to narrow research down and know specifically how to tailor your searches, it helps."

Although his experience might fall outside normal academic conceptions of undergraduate research, it will likely continue to be invaluable in the author's writing projects and overall goals. Jernigan has plans to turn *The Millennium Man* into a trilogy in order to fully tell the story as well as stay open to offshoot stories based on specific characters. "The research will evolve and broaden with each story, but still stay grounded in the religiosity, supernatural themes, and modern reality that it is set in through the first novel." 🌀



Artist Jesse Cutler depicts Ezra and Warbeast, ancient enemies in the novel *Millenium Man* by Michael Jernigan. Opposite page: Another Cutler digital drawing shows Fagan, a lone werewolf sent to kill the Millennium Man.



Searching

by Holly Kays

I walk toward the steep grassy hill, each meeting of my leather boots with the mist-softened earth pulsing the message that something is missing. I push open the familiar wooden gate at the trailhead and walk past the large-lettered sign forbidding hikers from feeding or “harassing” the wild ponies that live along this trail. The feeling stays with me, though I try to ignore it, and I catch myself looking over my shoulder, half-expecting to see Mom, Dad, and James passing through the gate behind me.

James. His name is like a punch to the gut, paralyzing my senses as the shock of his death overwhelms me yet again. Suddenly I don't see the bushes and wildflowers that surround me, don't even feel the steep slope burning my legs, because the sound of his name has taken me somewhere far away from Grayson Highlands State Park. It has taken me back to that night, that summer visit to my parents when the jarring ring of a midnight phone call woke me from my last peaceful sleep. I feel the soft-

ness of the quilt on my parents' bed as I sit close to Mom, straining to hear the precise English of the African voice on the other end of the line—Ajani, the man who James lived with during his mission in Nigeria. I hear Ajani tell Dad something I cannot comprehend: that James is dead, killed in a senseless outburst of violence.

I remember how certain I was that I had misheard. How I waited for Dad to laugh uncomfortably, tell Ajani how horribly the underwater phone line had twisted his words, ask what it was he had really said. But he didn't, and my legs automatically moved me to James' room, its walls still hung with the same basketball posters he had loved in high school. I opened the desk drawer where he always put all those things that he didn't know what to do with or want to sort through—pay stubs from his first job selling French fries at minor league baseball games, souvenir postcards, unused key chains, old birthday cards, and photos. My fingers wandered through these tokens of my brother's childhood, grasping each item as proof of his existence, evidence that Ajani's words were a cruel joke. A lie.

But grief had already permeated the house, coloring everything in the room with tragedy. I remember how, before my eyes, the lively grin James wore in his senior picture, which sat on top of the debris in his drawer, faded to a mere shadow of itself, to that indefinable tint that affects everything associated with the dead, the tint that makes it clear that the smiling young man on the news is gone, even before the anchor says a word. I looked away, focusing on the opposite wall. A Terps basketball poster hung there, but even its bold reds and blacks had faded to the color of tragedy. It was that spreading and overpowering color that convinced me that James was really dead.

Birds flutter and chirp in the sunny meadow, but I do not hear them. Though I manage to tear my mind away from that night in June, I cannot tear it away from James. I travel back fifteen years in time to the day that James and I hiked this same trail amid the songs of a different generation of birds living under a younger sun.

It was the most unusual of the many times we had hiked this

path together; we didn't talk at all, pouring all our effort into moving as quickly as possible. The rocks we normally stopped to climb and the wild blueberries whose tangy sweetness we could never ignore did not distract us that day; we didn't pause until at least twenty minutes separated us from our more reasonably-paced parents. We stopped at the border between forest and sunshine, leaning against twin smooth-barked trees as we waited for our breathing to slow to normal.

Finally, we were ready. James swung the black daypack off his shoulder and pulled out an old wooden-handled trowel and a large Tupperware container that he had "borrowed" from the kitchen—our time capsule.

The capsule had been his idea; at 13, James was fascinated with history and genealogy. "Because they last," he had explained to me earnestly many times before. The time capsule—he had corrected me firmly when I had accidentally referred to it as a piece of Tupperware—would last too, he said.

I remember how, before my eyes, the lively grin James wore in his senior picture, which sat on top of the debris in his drawer, faded to a mere shadow of itself, to that indefinable tint that affects everything associated with the dead, the tint that makes it clear that the smiling young man on the news is gone, even before the anchor says a word.

"You put photos and stuff in it, Katie," he had explained knowledgeably. "Stuff that represents what your life is like and what people in this time period do. Someday when we grow up and have kids, we can show them where we buried it and they can add things, and they can show their kids, and one day in the future scientists will discover it and we'll be in

history books and stuff."

"Why can't we just bury it in the backyard?" I had asked him. I had seen no reason to haul the thing halfway up a mountain when the soil in our yard was probably deeper and a good deal less rocky.

"Because then Tucker would dig it up and think it was a bone," he had replied, sighing slightly at being asked to explain the obvious. "Besides, we don't want just anyone to be able to find it."

James set the capsule down beside him as he knelt to dig. He had covered the interior with black construction paper, to keep the contents secret, he said. Secret from me, even—he had only laughed teasingly when I asked him what he was putting in the capsule. James loved to have a secret.

I had shown him everything I planned to put in: a small red stone that I had found by the river once, a plastic elephant figurine my aunt had brought me from India, a miniature wooden cross replica I had made at summer camp, and my favorite picture of James and me. I had taken it the summer before, right after getting my first camera for my ninth birthday. In the photo, James and I stood in front of the giant oak tree that shaded half our yard, our faces close together to fit the frame. As usual, my brown hair was flying out of its twin braids in all directions while James' peeked from the sides of his worn Terps baseball cap, his smile wide and sunny. I was glad that Mom had developed doubles for me; I wanted people in the future to know what made me happy.

I sat and watched while James punctured the mat of needles beneath the spruce tree, turning up a thin, sandy soil, which soon proved to be studded with firmly entrenched rocks. Each turn of the trowel yielded only a small pile of loose soil, and tiny beads of sweat lined James' forehead as he struggled to make the hole big enough for our time capsule. I watched in silent sympathy after my offer to help resulted only in a grunted, "I'm fine," and a spurt of extra-vigorous digging.

Finally, a pile of salt-and-pepper soil rested beside a hole large enough to conceal our Tupperware time capsule. James reached over to pick it up, delicately, as though it were made of glass rather than plastic. He placed it in the hole and jiggled the edges to settle it in.

"You can cover it up, Katie," he said graciously.

I scooted over to the capsule's burial place and pushed the mixture of sand, dirt, rocks and needles back into the hole. It covered the container, trickling down the sides, and I pressed down on the spot to make it as firm and flat as it had been before. But no matter how I arranged the soil, a little bump always rose above the natural contours of the ground. I finally gave up, carefully covering the disturbed soil with red needles before stepping away.

At the thought of that buried container, of being able to touch something of James' that had escaped the reach of a grieving household's sorrow, I begin to walk faster, ignoring the burn in my quads as I reach the crest of the hill. I climb up one of the wooden stiles that regulate the movement of the park's wild ponies and enter a sparse stand of windswept spruce and birch trees, their trunks covered with multi-colored splotches of lichen. I remember, smiling, how I used to love ripping the lichen off the tree trunks when I was little—it had given me the same satisfaction as peeling dried glue off my fingers in art class. But I didn't do that anymore, because James told me not

to. The lichens do an important job, he explained. They take nitrogen from the air and change it into a form that plants need to survive. When it rains, the nitrogen goes into the soil and helps everything in the forest grow better.

James had always understood things better than I, and not just when it came to nature, either—when it came to life, too, and ideas. Like the day he told me he was going to Nigeria. We had made plans to get lunch that Saturday at The Black-Eyed Susan, a little sandwich place we both loved. I opened the deli's white-painted door that Saturday in an irrepressible mood, knowing that lunch with my brother would be the best way to end a week of crisp November days and incredibly good behavior from my second grade class.

So at first, I didn't notice James' slight edginess or the absence of his usual intense investment in my words as I rattled on and on about my amazing week. He just waited patiently, turning his aluminum fork over and over but not touching his sandwich, until I finally finished talking about myself and asked him about his week. Then he took a deep breath, and I noticed that his usually wide smile had smoothed into a serious expression. I was suddenly paying close attention.

"Katie, I just made a big decision," he said, in a tone so solemn it scared me. "I'm leaving for Nigeria this summer, to be a missionary." The secret out, he began to relax, a tentative smile growing on his face as he waited for me to return it. But I just stared at him, my mind a balloon of floating, untethered questions.

"It's this professor I knew from undergrad," he said to fill the silence. "When Purina Mills laid me off I emailed him to see if he had any ideas for me. And he told me about this congregation that wants someone to start a church in Nigeria. They wanted someone trained in agriculture, too, to teach farming techniques that could help people feed themselves better. So I contacted them, and the door just opened."

By the end of his explanation, James' uncertain smile had transformed into an expression of sincere enthusiasm, and he looked to me to share his excitement. But I couldn't. My head started to spin, as though the rest of my world was preparing to leave me, too.

"C'mon Katie, isn't that exciting?" he asked, his smile dimming somewhat. "What's wrong?"

I didn't quite know how to answer him, because I knew that whatever I said would reveal how little I shared James' altruistic spirit. I knew that James, with his training in agricultural sci-

ence, could help the local Nigerian community tremendously. I believed that churches should send missionaries overseas to tell people about Jesus. But I didn't see why my brother had to be the one to go there. It would be dangerous, and he would be far away. Wouldn't it be enough for God if he just stayed here, went to church, and gave money for other people to go to Africa?

But I didn't know how to express any of this to James without exposing my own small-mindedness and eliciting his disappointment. So I forced out a smile and told him that nothing was wrong, that the idea just took some getting used to, and that it was great he was going. Now I wish that I hadn't lied. Maybe if I had warned him of the dangers, made him see that he needed to stay here, maybe then he would still be alive.

"How about if we say a prayer," he suggested. I agreed, but as he thanked God for the blessing of having each other and for the opportunity to tell other people about His Son, I looked down at the green-and-white checked tablecloth and my untouched BLT. I had my own talk with God, asking Him why James had to go so far away and praying that He would bring my brother home quickly.

Pain in my lower back returns me to the present as my backpack presses down hard on my hips. I emerge from the patch of trees onto a ridgeline meadow, where I finally stop to take a break, sitting down on one of the many large boulders that dot the grassy field. When James and I were kids, this section of the hike always exasperated our parents. There was a boulder every ten yards at least, and we always had to stop and climb each one, decreasing our progress four- or five-fold. Dad had timed it once—we went half a mile in ninety minutes.

The bare ridgeline reveals an endless horizon of mountain waves, hazy color fading from green to blue to purple. On a clear day, James told me once, you could see all the way to Kentucky from this place. But compared to Nigeria, Kentucky is practically just around the corner. How had Mom and Dad been okay with him leaving? They were so composed, saying all the right things as we saw him off at the airport: I'm so proud of you honey; write every day; don't worry about calling collect; we'll be praying for you.

I picture myself circling the area for years, never finding the place where a piece of my brother's 13-year-old self lies buried, untouched by tragedy. It has to be here, I tell myself, and my legs move faster.

But I hadn't known what to say. No matter how much I had told myself that it was good he was going, I still wanted him to stay. I needed him to be there for me, to talk me through my problems, to make me laugh when I needed it, to remind me that a half-empty glass is also half full. So I hugged him and told him I was proud of him, all the while swallowing the half-formed pleas that struggled to escape. I stood on the tips of my toes to reach around his neck, and his muscled arms nearly squeezed my breath out as we hugged goodbye. An image of skinny 13-year-old James floated across my mind, his red t-shirt hanging from his spare frame like a curtain, his body perpetually off-center, arms and legs moving like out-of-sync windmills as he balanced on rocks while crossing a stream. I wondered where that James had gone, how he had so suddenly changed into a man.

I had changed too, though I never fully realized it unless I was looking in a mirror. To one of the airport's suited passersby, I probably looked polished and grown-up in my floral sundress and matching cardigan. But I felt small.

Small and selfish, unable to be happy about the experiences my brother would have, the lives he would touch.

The forest canopy closes over the trail again, immersing me in birdsong and filtered light. My throat suddenly constricts—the spruce tree marking the time capsule's resting place should appear soon. Assuming that the tree still stands, that it still marks the edge of a clearing. What if the tree is dead, or the clearing overgrown? I picture myself circling the area for years, never finding the place where a piece of my brother's 13-year-old self lies buried, untouched by tragedy. It has to be here, I tell myself, and my legs move faster.

The trail straightens and I see it, a towering spruce marking a sunny overhead gap, standing only slightly taller than I remember it. A white-and-brown pony grazes in the center of the clearing, her chestnut foal beside her. They see me coming, and the mare guides her foal to the far edge of the grass. She isn't too alarmed; hikers are common along this trail. I shed my backpack and open one of the side zippers, pulling out an old, wooden-handled trowel I borrowed from my parents. I wonder if it is the same trowel that buried what I am about to dig up.

I kneel down and scoop away layers of decaying needles and dusty dirt, dig out the loose sand that lies below and keep go-

ing, extracting rocks and sifting the soil. My arms begin to ache, but I don't stop. I dig deeper, waiting to hear the thud of metal on plastic. Nothing. Maybe I misjudged the place. I shift over slightly and begin a new excavation to the left of the first. My arms burn and my back aches; I need a break, but even more I need to find the capsule, need to open it and touch the objects that James put there, that were special to him.

But I dig deeper and find nothing. Where could it have gone? Scenarios float through my clouding mind. Some kid dug it up for show-and-tell. An overzealous park ranger noticed the mounded soil and took it away, a violation of the "take only photos and leave only footprints" code of outdoor ethics. The pile of dirt grows higher, and I grit my teeth. I don't stop digging until I have fully excavated a semi-circle around the side of the tree that faces the clearing. The empty hole forces me to admit the truth: our time capsule is gone. It will never be a giant scientific discovery like James had promised. It didn't last even one generation.

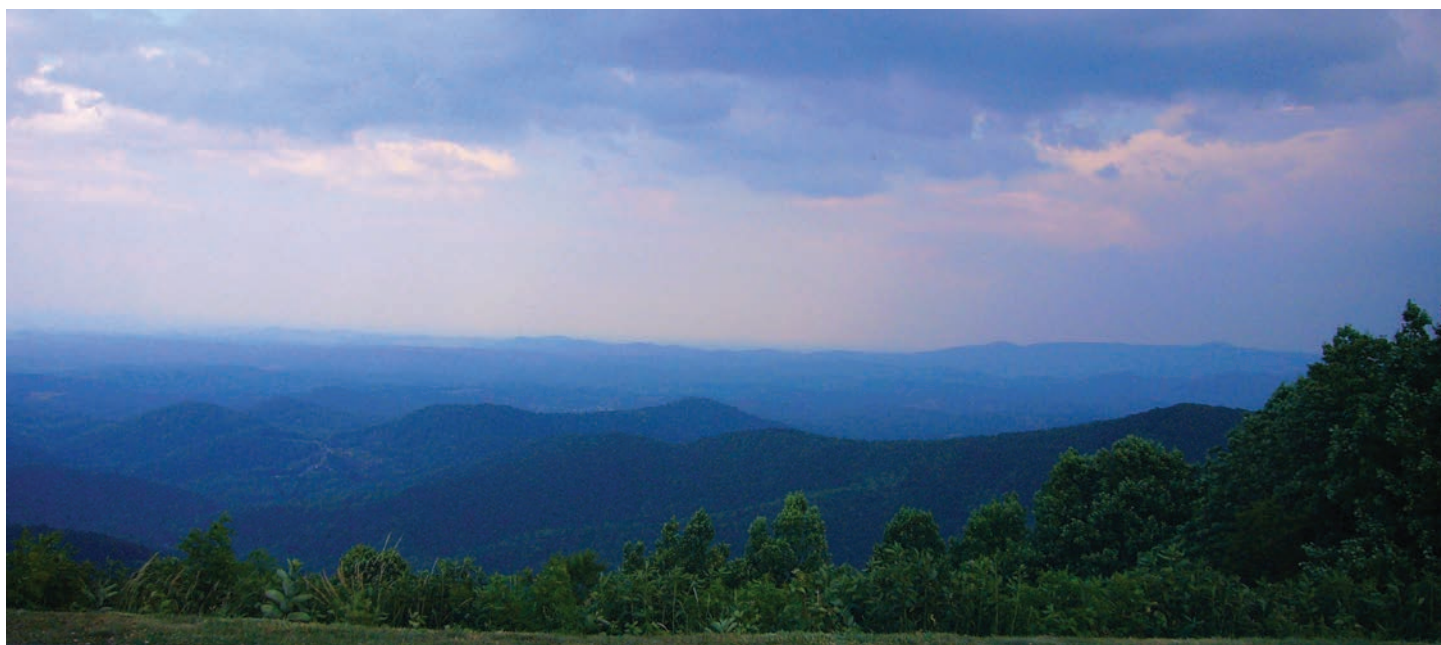
My body folds at the realization, and I find myself lying face down on the grass, unable to comprehend that the time capsule is gone. Gone, and with it my chance to recover a piece of James untainted by the pain of his death. A piece that wasn't there that night when the world changed, that didn't hear the phone ring or see my dad cry or smell the heavy perfume of a million flowers, a sickly sweetness that couldn't begin to erase the truth of an open casket.

For the second time today, time spins backward, stranding me in the darkness of that same June night. But instead of sitting disbelieving on my parents' bed, I stand phantomlike by James'

side, fully there but powerless to change anything, do anything. Boots strike packed dirt as uniformed men fling open doors on shelters made of corrugated metal, raising machetes over sleeping children and screaming parents. They come faster, louder, and the flimsy door of Ajani's shack falls to the ground as two men enter, blood dripping from their machetes, hate pouring from their eyes. Ajani's terrified wife huddles in the shadows, attempting to shield her four young children, make them somehow invisible. But in the midst of fear, James' grey eyes are steady and calm as he walks forward weaponless, standing between the intruders and Ajani's family. Speaking words of love. "Please tell me, friends, why are you doing this?" he asks. "Does it make you happy to hear children scream?" But the men understand only James' words; his meaning penetrates as deeply as bullets on an armored car. They raise their weapons toward him as my brother speaks for the last time, calm and unhurried still: "I want you to know that I forgive you, and so does the God who brought me here."

They go for him then, and I see my brother sink to the ground in a pile of his own blood, his jugular a river of scarlet, his intestines spilling from an open abdomen. I cannot see his eyes.

The grass beneath me is suddenly wet, and I realize then that I am crying for the first time since James' death. Crying because my big brother is gone. Crying because it is unfair. Unfair that he had to die, so painfully, so far from family, at the hands of people who hated him without knowing him, when James never hated anybody. Unfair that God would let him die, when God was the reason he was in Nigeria to begin with. Unfair that he could never tease me again, never amuse both of us by sneaking up behind me when I least expected it, never call in



Photography by Holly Kays

the afternoon to relate some interesting fact he had just read. Unfair that the time capsule was gone, that I would never know what portion of himself James had added to it. Unfair that all my memories of him, all the pictures, everything, were all tainted with that horrible glaze of death, that I could never think of James with a smile, that the gut-wrenching sorrow of his loss would always intrude on the pleasant memories, on the truth of who he was.

I grab onto a fallen spruce cone and pull away its wafer-like scales one by one. “Houses for seeds,” was how James had explained cones to me. I feel a wobbly smile form as I remember how it used to annoy me how often he had explained things like that. “Just because you’re in Boy Scouts doesn’t mean you know everything, James!” My nine-year-old self says, her hands on her hips.

And suddenly I realize that everything in this forest connects back to James somehow. I look at the sky and remember lazy summer days spent identifying the shapes of clouds, how we could somehow name even the most ambiguous form as a rabbit, or a turtle, or, if nothing else, as a cotton ball. I stare into the grove of trees on the opposite side of the clearing and remember the evenings we spent playing hide-and-seek with our neighbors in the woodlot behind our house. I see the ponies grazing on the edge of the clearing and remember the first time I touched one, how James spoke softly to it, holding out a bouquet of wildflowers till it came near enough that I could stroke the fine fur of its nose and run my fingers through its coarse mane.

I lift my face from the grass and sit up, causing the mare to cast a watchful glance my direction, and I smile my first real smile in weeks. I imagine him that final night, and for the first time since Ajani called, I don’t picture blood or pain or the murderers’ eyes glinting demonically. I just see James, serious but secure in the knowledge that he is doing the right thing. Willing to love, willing to die, trusting that it is all for a purpose. I wonder what it would be like to have that confidence, that absolute sense of purpose that eliminates fear.

I pick up the trowel and fill in the holes I’ve created, smoothing needles over them when I am done. I look over the ground, bumpier than before but whole again, and I feel a fluttering of peace, the beginning of a prayer. It falls away too quickly though, and I wish that James could come back, just for a minute, just long enough to show me whom to trust. 🌀



Holly Kays

Holly Kays is a senior from Williamsport, Maryland, who is pursuing dual degrees in English and Natural Resources Conservation. An avid writer since childhood, she hopes to produce fiction while using her natural resources background at magazines within that field after graduating. Holly has had nonfiction articles published in Virginia Tech Research Magazine, The Christian Chronicle, and College of Natural Resources and Environment News. Her short story, “Second Grade in a Chrysalis,” has also been published in Silhouette. Holly often finds inspiration for her writing from the outdoors; “Searching” began with the setting of Grayson Highlands State Park. Advisors and professors from both her majors have encouraged her to pursue her interest in writing and helped her find opportunities to do so.



The Vultures

by Christian Harder

Outside of Tuzantla, the Tierra Caliente Desert gets comfortable and stretches out. Mountains break the horizon, but they are desert, too. Chayo drives with his eyes closed. As the teacher, he has done this many times. I'm sweating through my open-neck shirt. The truck is not sure about all this and goes slowly. The vultures follow us. Mother told me their eyes are *del Diablo*. They're upset at our intrusion, the early hours being theirs. It's like the movies; the demons want a sacrifice.

The two men in the truck bed, *los cautivos*, are silent. I pity them because you've at least got to make noise. In movies, the captives always make noise. Before sunrise, we broke their doors and shoved past their wives and took them by the wrists. We tied them in the truck bed, and the wives cried but did not touch us. There was a lot of excitement. It was new and fun, like visiting a strange place.

We drove through town with them, past the *zócalo* and its markets; the early hagglers pinched pesos and maize. Chayo wanted to go through town so the people would see. See and understand, he said. Some people waved at us. I felt the

sadness of our *cautivos* when no one looked at them. A policeman flagged us down on the outskirts. Turn back, I said. Chayo rolled down the window.

Hello Chayo.

Hello.

My rent is getting bad.

I'll call Marco.

Thank you. Good day.

The policeman waved as we started towards the desert. He didn't look at our *cautivos*, but he must have known them; the department isn't big. He must have seen the eyes. I wanted to ask. If they planned to jump, they should've done it then, but they didn't even lean towards him. They'd heard about the rent. The sadness felt like cotton in my mouth but no one else noticed. Now we are in the desert, where only the vultures—*con ojos del Diablo*—notice us.

The truck rattles over the rat dens and snake holes while our *cautivos* hope we crash. It is something to drive through a town with two bound men. It is something else to drive through an empty desert with them. The vultures ask us to stop.

Chayo begins on romance movies. I say they don't have good characters and that the audience only likes them because they're captive for two hours. No one would care for me like that, my life being a series of inconsequential snippets. But maybe if I were around long enough. Chayo says romances aren't supposed to have good characters, only distracting ones, and then points ahead.

See the mountain? That is where.

I wonder if the *cautivos* see the mountain. They are turned around trying to make out the town that betrayed them. They don't talk about it—they haven't said a word since we took them. I taste tequila in the folds of my tongue.

Big day, Chayo says. You're almost family.

I think about the sour tequila and our small mothers warming sausages in the muddy Mexican morning. When I was ten I would not eat, so my mother brought me to Chayo. Chayo said, Leave him here with *La Familia*. I imagined we were literally relatives. Three or four men stood with Chayo. They held me while he talked about pride and duty with a stick in his hand. He never touched me, but I ate with no complaints afterward. It was a thick stick.

The truck stops and Chayo opens his eyes. We are beneath the mountain. The process seems automatic. Our *cautivos* do not move. Chayo wipes his forehead with his wrist and rubs his chin. I tighten my belt. The vultures are happy that we have stopped. They ride the thermals and scream at the truck. It looks like a metal skeleton.

Come on, Chayo says to the desert.

It's too cold.

I'm used to it, Chayo says. He leaves the open door behind him.

The truck bed gate is sleepy and I put my weight on it. With a terrible yell, it snaps open. Our *cautivos*, unflinching, look beyond us into the horizon where our mothers prepare breakfast.

They worry about their wives worrying. Their children are too young and are still happily tucked away, asleep. The men don't worry about themselves—no point, the vultures have made their decision. They should've jumped with the policeman.

Get out.

They get out without help. Chayo takes the first one under the armpit and goes ahead. I take the second one the same.

The men walk quickly, and ahead it seems el cautivo is holding Chayo instead. Chayo keeps up, even with his bag. My man is still warm from his bed. He smells of his wife's perfumes, fresh from the market. He does not look at me. I let him direct me after Chayo, stepping gingerly around the razorweed. I blink my eyes under the mountain's shadow and look for remains—I'm not sure how things last out here. Chayo stops and drops the bag at his feet.

The truck rattles over the rat dens and snake holes while our cautivos hope we crash. It is something to drive through a town with two bound men. It is something else to drive through an empty desert with them.

Kneel, he says.

They kneel as if in church. They have the dirty colored faces of *los Aztecas*. Their people sat in the wrinkles of the great mountain ranges: Sierra Anchas, Sierra de la Giganta, Sierra Mixteca. They built Aztec towers and roads here. My people imperialized them with disease. Now these *cautivos* will be left behind with the others.

Wait, wait, my surprise, Chayo says.

He runs back to the truck that is very bright outside the mountain's shadow. I am silent and our *cautivos* are silent. Their eyes are on the vultures, teasing them. Tourists do not know that vultures can hiss like feral cats. Last week a cat hissed and bit at me in my alleyway and Chayo drowned it. That is *La Familia*, he said.

They have the dirty colored faces of los Aztecas. Their people sat in the wrinkles of the great mountain ranges: Sierra Anchas, Sierra de la Giganta, Sierra Mixteca. They built Aztec towers and roads here. My people imperialized them with disease. Now these cautivos will be left behind with the others.

The vultures are silent. Chayo is back with two toy cowboy hats. He fits them tightly. The hats, red with brown embroidery, sit atop the men's heads like thimbles on apples. Not even silence can preserve their dignity. Chayo digs into his pocket and pulls out two shiny pieces. They look like coins.

Sheriff's badges. Get it?

Plastic badges cannot humiliate prostrated men. I believe they're thinking about their sons and not their jobs. Chayo pins the badges on and says, You live and die the same pigs. It is silent while we think about that. I expect Chayo to explain, but there are no movie conversations about justice or valor.

Crack, his gun says. It is sudden and his man drops.

I didn't know we were finished joking about the badges. Finally I see surprise in my man's face. He expected a movie conversation too.

Now you, Chayo says.

If *La Familia* will drown my feral cats, then good. I can think nothing else about it. If I consider my man, I am heartbroken. But like his people, he will die in this desert regardless. It is sad

that he kneels, pinned with a plastic badge and toy hat. It is sad his boy doesn't know he's gone.

Think of the people, Chayo says. Come on.

Chayo means the marijuana and cocoa farmers we protect. But I can't consider them because they aren't kneeling in front of me. My man jeopardized their welfare, but he's a victim of similar forces. This desert isn't big enough for the sadness. But I realize I can either shoot or not shoot.

Crack, my gun says.

It is meaningless and I don't understand the force of it, like cursing in a foreign language. These men, dead in La Tierra Caliente, are two beans in a frying pan. It doesn't matter at all.

Now the shirts, says Chayo.

We take blank shirts from the bag and spread them out on the ground next to our men. Chayo has the magic marker. He is the oldest and does the writing. He writes about the supremacy of *La Familia* and insults these dead men. The marker bleeds through the shirt. I'm uncomfortably crowded on my insides, like I ate too much.

Wesqueezetheshirtsoverourswollen*cautivos*.Thebodiesareheavy soweavetheshirtshalfon,halfoff.Thebloodblotsoutsomewords. Chayo laughs. I can't be blamed, coming from this place. I ask if we untie them—I'm worried about the hungry vultures.

No, Chayo says. They won't eat the shirts. Back to the truck.

The truck is bright and hot in the risen desert sun. Chayo has removed his shirt and tied it around his head. It's deep over his eyes so he doesn't look at the mountains or the town. There are mustachioed men on his back, the leaders. I do not have a tattoo. We start off and finally Chayo drives away.

As we drive, I think about my house. I remember our broken well, its insides turned up and watery. The car is sluggish, mad because we took our time back there. The sun is in full swing. The drive back is quick and I look for the outskirts policeman. There are people everywhere on the streets, selling and dancing.

They wave.

You're my man now, Chayo says. He speaks as if it's only safe now that we're finished. *El hombre de La Familia*.

I light a cigarette. The townspeople smile and hold out their hands as we pass. Their children run along the streets, barefoot. Chayo says something about the economy. We are the heroes. We keep the business running. The people are paid, and the oppressors are dead. We supply the town with food. When our government betrays us and sends its colluding tyrants to our sleepy muddy town, we defend the town. The town is grateful. It is good to be liked.

My house is first, but the truck resists the stop now that it's going. I still hear the market behind us.

Good job today, Chayo says. He musses my hair with his fist. See you tonight.

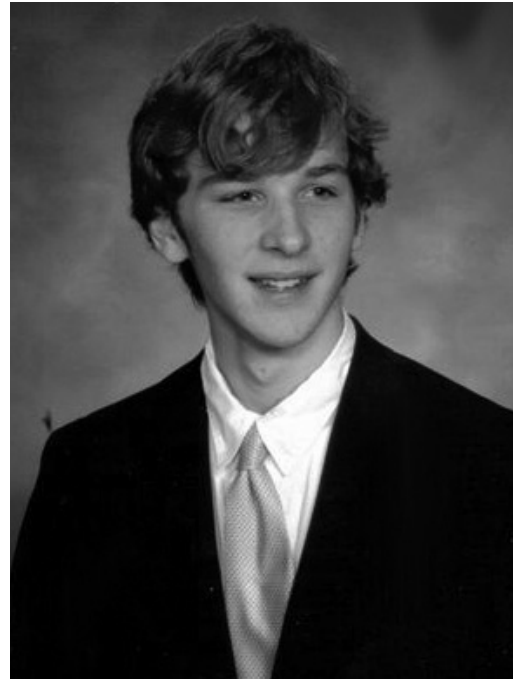
The truck goes off and I see how poor it is. I wonder if it can stand more trips to the desert. I smell smoke and salt from the windows of my house. Inside, the dark walls make my outside eyes blind. I call Mother. She runs and hugs me. She says I smell of cigarettes and liquor but doesn't ask where I've been.

No breakfast, I say.

She calls me a bad child and threatens me with La Familia. It worked last time, she says. She smiles.

It works every time, I say.

She mentions a great discount Chayo's father gave her this morning at the supermarket. I pretend she'd been standing with us, over the men. The whole town is my mother. Out the window, I see the mountains cutting the deadpan sky. The vultures look on with me. 🌀



Christian Harder

Christian Harder is a Junior English Literature major with interests both in poetry and prose. His inspiration for "The Vultures" came from an article in the New Yorker, which chronicled the violence plaguing much of northern Mexico, strikingly portraying the complex network of drug-motivated gang activity. He hopes "The Vultures," despite its relative simplicity and brevity, will also speak to the lasting implications of Mexico's drug-related difficulties. Christian plans to apply to a Master of Fine Arts program and pursue a career as a creative writer.



Seams

by Chelsea Gillemwater

Marlie Steiner was sixteen when she found the edge of the world in her backyard. She lived in a tiny house on the east side of the Clinch River, folded between a grassy hill and a sharp outcropping of rock. The house itself was little more than a wooden shack, with creaking floors and a sloping roof. All were held together only by hope and a few ten-penny nails. There was a tree growing right at the edge of the house with branches that looked like they were about to break through the second-story windows. Wild weed-flowers grew in patches along the front porch. Beyond the backyard fence was a forest so deep she couldn't tell where it ended.

Marlie lived with her insane Aunt Ketchie and two younger twin sisters, Toddie and Jenalee. A year before, her parents had died in a car accident on the interstate. Afterwards, social services had taken a flurry of "investigative measures." Men and women who were suddenly worried about their living conditions had come pouring into their house. It wasn't until Aunt Ketchie stepped in as their guardian that everything settled down. Only, it

didn't. Taking responsibility for them was apparently the only responsible thing their aunt was capable of.

Aunt Ketchie had always been odd. She spent most of her time collecting bits of glass from junkyards or along the side of the road. After Marlie's parents died, she seemed to have spiraled deeper into her own world. She rarely spoke, and when she did, it was only to mumble random phrases until she ran out of breath. In some ways, Ketchie needed more looking after than the children did. She probably belonged in a hospital, where someone could take care of her. But, if she left, they would all be taken away. They had barely found her in time to avoid becoming wards of the state. And so, crazy or not, Ketchie had to stay.

Marlie had quit school soon after Ketchie arrived. With Ketchie incapacitated, it was Marlie's job to pay the bills and keep them all fed. She worked weekends at a little general store down the road and had a little vegetable garden in the backyard she tended with painstaking care. At the end of each month, she squeezed all the produce into neat little jars old ladies would buy at the farmer's market. It wasn't much, but they got by.

Most evenings, with Toddie and Jenalee for company, Marlie sat on the porch with a bucket at her feet and shelled green beans, methodically stripping away the soft, yellowing skin. The sky was pink or orange or some other sun-soaked shade, and Marlie watched until twilight stripped the rest of the color from the world. The twins eventually went back into the house, but Marlie stayed outside, a half-peeled pod in her hand, watching the stars blink their way into the sky. Just a little while longer... she always thought.

As she sat there, she searched for the edges of things. Marlie had long felt the world was made up of seams, scars left where the earth had folded and rearranged itself. There were fault lines that ran for miles and miles, places where the continents had met and split, where you could trace the evidence of their being together with your fingertips. Those boundaries were everywhere. They were in the cracks in the sidewalk, where one block pressed against another, between squares on a checkerboard, in the curious separation between water and air. She liked the idea of a mottled world, all those different things piled together to make it stronger.

She'd started hunting for seams when she was very young. Finding them seemed to make sense of the world, as if it was possible to arrange everything in its appropriate place. Even the sky was broken into planes which knocked into one another—the stars, the clouds, the darkness beyond them. She thought

her family was like that sometimes, just bits and pieces thrown together that somehow managed to stick.

When all the beans were shelled, Marlie went back into the house, locking the door behind her. Toddie and Jenalee were too young to remember their parents' deaths, or much about their parents at all. When Marlie came to tuck them in at night, she was their mother. She was perhaps a little young to fill the role convincingly, but she filled it all the same.

Her sisters always asked for stories about dragons and knights and elves and all the strange magic of the world. Sometimes, they wanted her to play guessing games, and sometimes they fell asleep before they could think of anything at all. But mostly, they wanted to know if Marlie would be there when they woke up.

Marlie always promised she would.

When Aunt Ketchie had moved in, she brought two suitcases full of nothing but shards of glass. In her room, she had one full-sized bookshelf lined with broken cups and tiny figurines. Marlie didn't like the idea of Ketchie being alone in there with all those sharp objects, but Ketchie seemed happiest when she was picking up some trinket or another and spinning it through her fingers. So, her collection stayed.

Sometimes, Marlie caught herself counting the edges of those pieces of glass or finding the places where the prisms split and scattered the light. It was only when Ketchie came back into the room that Marlie shook herself out of it. She always hated to think that she and Ketchie had anything in common, despite the fact they were both obsessed with broken things.

During the day, the twins walked with some of the neighborhood boys to preschool and stayed most of the day. Marlie stayed home with Ketchie and cooked and cleaned and gardened and did whatever else needed doing. It was too much sometimes. Occasionally, she just needed to get out of the house, even if that meant leaving Ketchie alone.

"Bye, Ketchie!" Marlie called through the open screen door. "I'm going for a walk!"

Ketchie mumbled a reply, nodding her head vaguely in Marlie's direction. Marlie eased the door shut, spun on her heel, leaped off the back porch, and hurried toward the edge of the yard.

Marlie was fairly certain she was the only living soul who had ever been inside the woods behind their house. The branches were so thick and twisted they were impossible to get through without receiving a few scratches on her arms and hands. She crawled through them and landed on the other side of the fence, breathing in the sharp scent of wood.

The forest seemed to have changed since her last visit. Dead leaves skittered along the ground, most of them dried out by the summer heat. Bright red berries grew between tree roots, and occasionally she spotted clusters of tiny, yellow flowers. The canopy overhead was lit by a tired, green light, which filtered down through the leaves, speckling the tops of her arms and cutting shadows across her legs.

Being outside made her feel alive, free, reckless and all the things she wasn't allowed to be when looking after two little girls and a senile aunt. She made sure to keep herself together around them, but out here she could slough off her responsibilities like an old skin.

She pulled a long strip of bark off the nearest tree and began to chew on it, a mindless habit she had picked up as a child. It tasted slightly bitter, quite unlike the sugary grass that leapt up around her mailbox. The woods seemed quiet, she thought, as she continued to walk. No birds swooping through the trees, no animals shuffling in the undergrowth. It made the world seem empty.

The air felt heavy with the threat of rain. The sky grew darker by the minute, but the humidity hadn't quite broken. Marlie's shirt clung to her skin, and she absently brushed her damp hair off her neck. She wished God would stop shaking his fist and hit something already.

Her eyes hunted out edges instinctively—the spot where the green of the leaves faded into the brown bark, the light and dark threads of a bird's nest lying on the ground. She breathed in a gulp of wet air and thought about all the seams she had crossed to get there—the barbed wire fence, the neat rows of frail, little vegetables she'd planted in the garden. She kept walking, allowing her mind to wander aimlessly. After about fifteen minutes, she stopped and bit down hard on the bark,

looking around to see where she was.

In front of her was a fallen tree, its surface dark and damp, propped up at eye level against other living trees. Moss spilled off its side like some kind of spongy waterfall, so thick she couldn't see the ground beyond it. The tree stretched a good fifty feet in either direction, too far to go around easily. She reached up, hooked her elbow around the trunk, and hauled herself over. Her arms started to ache as her feet scrambled for a foothold.

Just as she was about to swing down on the other side, she froze. The blood slowly drained from her face. She flung herself down on the tree, her stomach flat against it. Her fingers tore at the slippery moss, desperately searching for a better grip. Adrenaline surged through her body, locking her muscles into place. Her breath came out in small, strained gasps.

There was nothing on the other side of the tree. A vast, blinding, incredible expanse of nothing. The ground was gone. The trees were gone. It was like the earth had just suddenly unraveled, leaving a bright, white light flickering in time with her pulse.

Marlie grasped the tree tightly, the left side of her face stuck firmly against the moss. She stared straight ahead into the woods she'd just come through. She had to memorize it, hold it in her mind, convince herself it was real. She pulled the piece of bark through her teeth, letting the taste of it fill her mouth.

As Marlie clung to the tree, her eyes fastened hungrily on what had been ordinary only moments before. Only one thought entered her mind. The world ended at the edge of the woods.

It took her several minutes to work up the courage to look back. God, it was still there. Or...not there. A white stillness, a horrifying empty space was as far as she could see. She thought she could hear a sound coming from it, a low humming noise. But at other times, she couldn't hear anything at all.

She wondered if maybe this really was the edge of the world.

The air felt heavy with the threat of rain. The sky grew darker by the minute, but the humidity hadn't quite broken. Marlie's shirt clung to her skin, and she absently brushed her damp hair off her neck. She wished God would stop shaking his fist and hit something already.

Maybe Columbus had been wrong. Maybe the earth wasn't really round but spiraled, and this was the place where it plunged back into itself. Or maybe this was the seam of the world that finally broke under its own weight.

The longer she stared at it, the more uncomfortable she felt. It seemed wrong in a way she felt all the way down her spine. Looking at nothing—scape hurt, deep on the inside.

She found it was almost impossible to stop.

When Marlie was sure her muscles were working again, she ran.

She didn't slow down, not even when she tripped and skidded on her elbows. Not even when she had to thrash her way through the branches. Not even when she couldn't draw any more air into her lungs. She scrambled over the barbed wire fence, dashed through her yard, and slammed into the house. Finally, she collapsed on the warped wooden floor.

Thoughts crowded inside her head. She had to get dinner ready. She had to go out into the garden and find some potatoes big enough to eat. But she couldn't bring herself to move. The house was too empty and still, too much like the seam. It was an emptiness that grew, filling the hollows between the walls and inside her lungs. She coughed. The silence swallowed it up. After that, the only sound she could hear was the clock ticking. A few moments later, she heard the soft shushing of rain against the roof. She listened intently, head tilted up to the ceiling, as it grew to a roar, blanketing the world outside.

She tried not to think about the seam. But, it burned in the corners of her eyes, no matter how much she tried to shake it off. Maybe she needed to do something else, just to clear her head.

She got up slowly. Her hands instinctively found a worn dust rag. She began to clean the tables, the chairs, the sink, the floor, every square inch of the place. She counted the regular seams as she went—cracks between floorboards, dark outlines around nails, holes in drains, Ketchie's door...

Ketchie.

Where was she?

Marlie ran toward Ketchie's room. She imagined Ketchie collapsed on the floor, with broken, bloody bits of glass all around. When she stepped inside, everything was as she'd left it. The glass collection was lined up on the mantle, untouched. The room empty.

"Marlie?" a voice said behind her. Marlie jumped, her heart pounding. Ketchie stood behind her, a half-smile on her face.

"Ketchie! You scared me. Where were you?"

Ketchie's eyes shifted to the floor as she mumbled something under her breath. Marlie sighed and guided Ketchie into a small, wooden chair in the corner of the room.

"Just sit there for a second, okay? I'm gonna dust for a minute." Marlie shook out her dust cloth and began dusting the tables, bedposts, and bookshelf edges. Somehow it seemed normal to be worrying over Ketchie and not world-edges that appeared in otherwise ordinary forests. With Ketchie, at least she had an idea of what she was dealing with.

When she looked around, Ketchie had disappeared again. Marlie let out a sigh of frustration and did a quick turn on her heels.

Ketchie had started moving toward the bookshelves, her bony hands stretched toward one of the glass pieces. Before Marlie could stop her, she had picked up a long shard of green glass and was sliding it across her hand.

"Ketchie, stop it," Marlie said as firmly as she could.

Ketchie ignored her, poking the sharp edges of the glass into the tips of her fingers.

"Ketchie!" Marlie grabbed the broken piece. The glass pierced her hand and a line of red suddenly appeared across her palm.

"Look what you did, Ketchie," Marlie snapped, the glass slipping from her fingers. She rushed to the bathroom adjacent to Ketchie's room to rinse off the blood. "You can't play with these things anymore. They're too dangerous."

"They're pretty," Ketchie said, as if that was all there was to it. She bent over to retrieve the glass from the floor.

"I know you think so, but they could still hurt someone. Look, they already hurt me."

But Ketchie didn't look. She only looked at the shiny, broken thing in her hands.

"I'm gonna get more," Ketchie murmured, spinning the blood-stained piece on her lap.

Marlie sighed, wiping her hand one last time on a towel. It was still a little pink, but there was no more blood gushing out. Marlie glanced in the mirror, watching Ketchie's reflection as she toyed with her glass.

Marlie usually didn't have the time or inclination to study her face in mirrors. Today though, she couldn't help but wonder if she would look different somehow, after staring into the grave of the world. Maybe she had finally grown into her too-large nose, or maybe her ears lay flatter against her head. Neither was true, she found as she looked into the mirror's foggy surface. She had the same stick-thin hair and washed-out gray eyes. The same nose, same ears, same crooked smile.

Maybe it would all stay the same forever—her face, the slumped house, the sun hanging in the exact middle of the sky, gravel dust billowing behind car wheels on the road. Three mouths to feed and nothing to feed them with but a garden of skinny vegetables. An aunt who liked to stick sharp things into her skin. Maybe this was it. For a moment, she felt like collapsing in on herself until she was too useless for anyone to rely on.

No, Marlie thought. The world did change and it had seams where you could see the changes. Sometimes, those seams broke and the world fell inside them. Not everything stayed the same.

For a while, she thought she must have hallucinated the seam. Maybe she'd just eaten something bad that morning, or maybe it was sleep deprivation or stress or some other kind of disorder that had an impossibly long name. People just didn't stumble into the end of the world.

A few days later, while Ketchie was safely napping and the twins

were away at school, Marlie pulled on an old pair of sneakers and crawled back into the woods. The forest looked the same as before, only now she could hear the faint rustling of birds flitting through the branches. She felt somewhat cheered by their presence.

She was hoping she wouldn't find it again. But somehow she did, as though her feet knew exactly where to go. When she climbed onto the fallen tree, the world was still washed with that bright, bleached light, like someone had taken an eraser and rubbed it out. For a moment, she just stared at it, and then she kept staring and staring, waiting for it to move or something. But the only thing that moved was the sun in the sky, and it wasn't until

hours later that she finally stumbled out of the woods, unsure of where she'd been.

When she got home, Toddie and Jenalee were sitting in the kitchen together, their blond heads bent over a pair of stuffed animals they shuffled silently across the floor.

"Hey, guys," Marlie said. The memory of the seam vanished from her mind as soon as she saw them. "How was your day?" She didn't have time to worry about a hole in the world when she had real people to look after.

"We made paste-it people," Toddie said proudly. She dug in her pocket and pulled out a little paper doll with ragged, glued-on clothes.

Marlie smiled. "Looks great. Will you make one for me?"

The twins' eyes grew wide. "Yes!" Jenalee screamed, and they both jumped up in unison, ready to make a whole army of paste-it people if she asked.

"Not right this minute," Marlie laughed. She paused, frowning. "Hey. Where's Aunt Ketchie?"

Both girls shrugged, their minds already on other things. Mar-

She was hoping she wouldn't find it again. But somehow she did, as though her feet knew exactly where to go. When she climbed onto the fallen tree, the world was still washed with that bright, bleached light, like someone had taken an eraser and rubbed it out.

ie's stomach seemed to plunge all the way down to her toes.

Marlie didn't allow herself time to think. She checked all the rooms in the house—the bedrooms, the kitchen, the den, even the little crawlspace beneath the stairs—wrenching doors open and looking under beds. She flung open the door to Ketchie's room and found nothing but the little glass pieces catching sunlight in the window. Her throat began to tighten. Each breath she took felt sharp in her lungs. She staggered into the kitchen and slumped down in the floor, pulling her hands through her hair.

She had to find her.

"Girls, can you please go upstairs and stay there for a while?" Marlie said, her voice almost too soft to hear. "I'll lock the door so no one can get in."

"Did you find Ketchie?" Jenalee asked. Marlie shook her head.

"I don't know where she is. So I have to go look for her. Promise me you'll stay here until I get back."

They both nodded, their large blue eyes trusting, and hurried up the steps. As soon as she heard their bedroom door close, she grabbed a jacket and ran out the door.

She searched for hours. She went to all the neighbors' houses and asked if anyone had seen her. She went into town and checked the stores. She walked along the road, looking for Ketchie and her bits of glass. Marlie tried very hard not to think about the woods or the seam or the possibility of Ketchie finding her way into either of them.

The sky began to darken, the sun slipping beneath the mountains. Marlie felt like her entire body grew heavier with each step. She kept calling Ketchie's name, but her voice barely carried past her lips. If she didn't find Ketchie soon, she'd have to report her missing. If that happened, they would take "investigative measures" again. Ketchie might be dead somewhere. They'd take the twins away and then she'd have nothing left but her own tenuous sanity.

She was about to turn around when she saw something up ahead—a small, bent figure with short brown hair that curled in the wind. Ketchie.

"Ketchie!" Marlie cried. She started running, her legs shaking with each step. As Marlie got closer, she made out another figure beside Ketchie, a tall man in uniform. He held a small

flashlight in his palm, and his cruiser was parked a few feet away.

Oh no.

"Marlie?" the man said, squinting in her direction. She recognized him now—Deputy Hall. "That you?"

"Yes, sir," she mumbled. She staggered forward and took hold of Ketchie's hand.

"I was just cruising through the neighborhood and found, uh, your aunt here. She—"

"Yes, thank you, I appreciate it," Marlie said before he could continue. "We should probably be heading home, actually."

He hesitated. "Well... here, then, let me give you two a ride home."

Marlie paused, then nodded curtly. She pulled Ketchie toward his car, helped her into the backseat, and slid in beside her. She made sure to buckle Ketchie's seatbelt, which was difficult since Ketchie refused to loosen her grip on the little broken bottle she'd found. Marlie resisted the urge to tear it out of her hands.

Deputy Hall climbed in the driver's seat, casting wary glances over his shoulder. They rode in silence. Marlie's eyes followed the beam of the headlights, watching as the world briefly lit up and skidded back into darkness, out of existence. Marlie wondered if the seam was just a part of the world that the sun had failed to touch. She shook the thought out of her head. No matter how hard she tried, she kept thinking about it. She and Ketchie were both slipping.

The cruiser pulled into their front yard a few minutes later. Marlie unbuckled her seatbelt before the car had stopped moving.

"Thanks," Marlie said flatly. She opened the door for Ketchie and eased her out of the car.

"You wanna tell me why I found your aunt collapsed in a ditch, Miss Steiner?" Deputy Hall asked, getting out of the car.

Marlie gritted her teeth. "She was just feeling sick. She'll be fine soon."

He shook his head. "I'm afraid there might be more to it than

that..."

Marlie frowned. "I've got to get her inside. Maybe you could come back later... please?" Her voice broke a little on the last word. She felt too tired to argue. Too tired to do anything, really.

He sighed. "All right, sounds good. Make sure she gets her rest."

"I will."

Marlie took Ketchie's hand and walked beside her all the way to the house. Once inside, she took off Ketchie's shoes and tucked her into bed. With some effort, she pried the broken bottle out of her grasp and set it on the shelf.

"Ketchie?" she whispered. Ketchie's eyes opened a crack. "Ketchie, look at me. You can't go wandering off on your own like that. If they don't think you can take care of us, they'll take us away. Do you understand?"

Ketchie gave a slow, almost imperceptible nod.

"I'm...sorry, Marlie," she whispered. Her eyes were wet with tears. She reached up to stroke Marlie's hair, tucking a few strands behind her ear. "I can't find you sometimes. I can't find...me."

Marlie blinked, fighting the sudden burning in her eyes and throat. She'd cry later, if she had to. Now she just smiled slightly and kissed Ketchie on the forehead.

"That's why you have me to find you," she said.

Marlie didn't sleep at all that night. Ketchie had had lapses in memory before, but never quite like this. It might be only a matter of time until someone else found Ketchie, until some-

one realized there was no way this woman could take care of three girls. Marlie stared at the ceiling, her muscles tense and aching. Something had to change. She kept trying to think her way out, find some kind of solution. An escape. But all she could really think about was the clicking of the fan overhead and a humming that never seemed to leave her ears. She stared at the ceiling fan as it rotated slowly above her, the dark blades giving way to a white ceiling, over and over and over.

She went to the seam the next day, after giving the twins careful instructions to keep Ketchie inside. She didn't know why she kept going back, except it no longer felt strange to her. True, the very sight of it made her stomach lurch against the back of her spine, but it felt somehow familiar. Here it was—

the ultimate boundary, something wholly unconnected to anything else. The world, unraveled. Or was it more clinical than that? Had something simply sliced the universe into two perfect halves? Pruned away the bad from the good, giving the earth a fresh, new start?

Which side was she on?

The world, unraveled. Or was it more clinical than that? Had something simply sliced the universe into two perfect halves? Pruned away the bad from the good, giving the earth a fresh, new start? Which side was she on?

She never really thought of any answers.

She never really thought of any answers. Something about the seam made it easy for thoughts to slide away, unrequited.

The next day, there was a knock on the door. Deputy Hall stood outside, his uniform pressed into neat, perpendicular lines. Marlie's heart dropped down into her stomach.

The cop cleared his throat. "Miss Steiner, think we can have a little chat now?"

Marlie nodded. The deputy motioned her outside until they were both standing on the porch. The summer air hummed with heat and cicadas.

He wouldn't look her in the eye.

"You know your aunt's kind of in a bad way..." he began, then

cleared his throat. "I was thinking maybe you oughtta think about putting her somewhere with... professionals."

Marlie didn't respond.

"Things'd be better for ya," he continued. "They'd take good care of your aunt up in New Haven. That's not too far."

Marlie stared at a button on his shirt but not at his face. "And Jenalee? Toddie? What about them?"

"I'd say foster care," he said. "Course you don't need to get too worried about that, either. There's some real nice families out there. They'll be taken care of, and so will you. You'd only be there for a couple of years, anyway..."

Marlie bit her lip. "We won't be together, though."

He ducked his head. "Well, you could be. It's just not likely. Hard to find a family willing to raise three kids at once."

Marlie nodded. The humming in her ears grew louder.

"You're not gonna have much of a choice, though, you know?" The cop said, rolling his shoulders. "Your aunt's your legal guardian, but she's just not fit to look after y'all right now. I mean, this is just my impression, but we'll have to get some people out here to say for sure. If your aunt's sick, you have to tell someone. You need someone to take care of you. You can't do all this on your own."

He was right, Marlie thought, her throat tight. She couldn't. Not anymore.

"I promised them, though," she finally said. "Toddie and Jena...that we'd stay together."

Deputy Hall sighed. "It's the law, Miss Steiner." He tipped his hat in the direction of her shoulder and walked back to his car. "I'll be coming back in a day or two, and we can get some more people in here to talk to you about it. I just wanted to let you know..."

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As he drove away, Marlie imagined the pop of gravel in the road was actually the splintering of the world.

As he drove away, Marlie imagined the pop of gravel in the road was actually the splintering of the world.

When Marlie walked back into the house, she found the twins gathered around Ketchie in her rocking chair. They were playing with dolls on her lap, twirling paper feet across Ketchie's knees. Ketchie had a wistful smile on her face, and she laughed as the twins made little sound effects to go along with the dolls' movements. Marlie's eyes suddenly clouded over with tears. She pressed a fist against her mouth to keep herself from making a sound. She had worked so hard to keep them all together. None of it mattered now. She was beginning to think nothing was meant to be whole.

Marlie ran forward, leaned down, and wrapped her arms around all three of them. She suddenly felt like if she let them go, it would be for the last time. So she held them tighter and tried to find the words to say I love you, don't leave, just a little while longer, but she couldn't make a sound.

The next day, the house was full of newly concerned citizens—policemen, lawyers, and social workers, all pretending to care. They wrapped their arms around Marlie and the twins, and they clucked and petted and said how very, very sorry they were things couldn't work out.

Once all that was finished, they crowded into the den. A woman from the foster agency, Rebecca something, pushed the twins' toys off the small coffee table, clearing a space for several large stacks of paperwork. Aunt Ketchie sat on the couch with a slightly dazed look on her face. Rebecca pressed a pen into her hand and helped her swirl her name over line

after line. Marlie watched from the kitchen door, her thin arms folded around her.

Another social worker stood beside Marlie, patiently explaining all the details to her. She assumed he was trying to be reassuring. The foster agency had already worked out a plan for them. There were two families interested in taking Toddie or Jenalee; the agency would try to keep the girls together, but it seemed unlikely. They were having trouble locating a place for Marlie. Until something turned up, she'd have to stay in a group home with the other undesirables. Ketchie would go to New Haven, the assisted living facility in the next town over. The lawyers thought they could declare all four of them wards of the state to take care of expenses.

Whenever Marlie asked a question, the man answered in the same quiet, syrupy voice.

Yes, you'll be able to stay in touch with your sisters and aunt. You can visit once a month, at least, if everything goes well.

Yes, there's a possibility this could be temporary, if your aunt gets better.

No, we don't think she will.

No, you'd have to be 21 before you could be a foster parent. It's better if we get your sisters in good families now and hope for the best.

Yes, we're sorry about this. We're really, really, very sorry.

They weren't, though. The whole situation was routine for them. As far as they were concerned, the Steiner family had already broken apart, and only the agency knew what was best for them now. They were concerned, but they weren't sorry. The twins were crying and Ketchie was scared and none of them seemed to care. They just kept their eyes on Ketchie and her shaky signatures.

"When will we go?" Marlie asked, her voice soft.

"Today," the man said. "You can't stay here anymore, that's for sure. Hear me?"

Marlie nodded, but she wasn't sure she had heard him. The voices in the next room were starting to spill over one another until they no longer formed words. She could see the man's mouth moving, but she couldn't understand him. She felt trapped behind a wall of glass, empty air bubbling up around her. There was a familiar humming in her head that seemed to come from inside her ears. She pressed her hands against her forehead, trying to wipe the noise away.

She didn't ask any more questions.

The rest of the day passed strangely. The social workers were cheery, bobbing from room to room, spouting optimistic predictions about how wonderfully everything was going. One of the workers took the twins by the hand and led them out to her car. Marlie just stared after them, frozen where she stood. Her ears buzzed. Distantly, she heard Ketchie wailing for them to give her glass back. Then, the humming grew louder and sucked Ketchie's voice away.

The next thing Marlie knew she was sitting in the backseat of Rebecca's car, the edge of a seat belt digging into her neck. She twisted her head around to stare out the window just as they pulled away, her gaze lingering on the little wooden shack.

She hadn't heard anyone say it was time for goodbye.

The group home, a long one-story building, was just a short distance from their house. Rebecca parked on top of the hill, squashing a few small flowers.

"Wait here. I'm going to get your papers, and then we can come back and get your luggage."

Marlie didn't remember bringing any luggage. It didn't matter, anyway.

Her hands were already on the door handle. As soon as Rebecca disappeared inside, she threw open the door and ran.

At first, she wasn't sure where she wanted to go, but that question resolved itself fairly quickly. She headed for the seam.

It took her twenty minutes to find her way back to the house, weaving as far away from the road as she could to prevent anyone from spotting her. She paused for just a moment in the yard to catch her breath. The hope-and-nails house was empty now, the windows dark and silent. She flew past it angrily and ducked under the barbed wire fence, pushing her way through the forest until she found the seam. She needed time to think. It was only there time seemed elastic enough to fit all her thoughts inside it. But once she sat down, she found it hard to concentrate on anything but that warm, buzzing sound.

She wondered if this was how Ketchie felt all the time, so ready to accomplish something but unable to do anything but sit, stare, and wait for something to happen. Marlie smiled ruefully

to herself. The seam was her roadside glass, her shiny, broken thing. She didn't quite feel like letting it go.

And she suddenly understood why Ketchie closed her door and played with her pretty toys. It was so much safer than living. Those dirty shards couldn't hurt you unless you wanted them to. Life didn't give you that option.

She stared at the seam, letting the familiar humming wipe away her thoughts. What would happen if she just walked into it? Would she fall, or float, or simply fizzle out into the emptiness? Would she be able to feel it?

She thought about the other seams of the world, how she used to think they kept the world in one piece. She knew better now. The things patched together were the weak points, the places that could shatter with any delicate touch.

And she thought about the sun hanging in the exact middle of the sky and the gravel dust and the hungry mouths and the skinny vegetables and the sameness-sameness-sameness that followed her like a second shadow. She'd wanted something to change. Now everything was different.

And here was an end to it. The end of the world.

The idea of escape suddenly burned itself into her mind.

Could she do that? Could she really just leave them all behind, everyone who needed her, everyone who had lost her already, and walk off into the ether?

She took off her shoes and stood up slowly, wobbling on the balls of her feet. Her body balanced on a question. The void suddenly didn't feel like a void at all but something that was full and alive and changing. She inched closer, her toes hanging off over empty space.

She needed to find a place that was whole again, not broken, or wrong, or held together only by hope and nails.

She took a step. 🌀



Chelsea Gillenwater

Chelsea Gillenwater, from Gate City, Virginia, has a double major in English and Communication with concentrations in creative writing and print journalism. In the future, she hopes to obtain an MFA in Fiction Writing before going on to become a novelist, continuing to write in whatever capacity possible. The inspiration for "Seams" came from a single image of a girl standing on the edge of the world. Like Marlie, Chelsea found the idea irresistible. She thanks Robin Allnutt for his thoughtful comments and his help in revising the piece.

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