

# LOGOS

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*Essays and Art by*

*Missouri State University*

*Undergraduate Students*



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U N I V E R S I T Y

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# The Language That Binds Us: Second Language Acquisition in a Monolingual Context

Stefan David Bellm

## Abstract

This article presents a sociolinguistic analysis of the current situation between native and nonnative English-speakers. First, the article provides a theoretical study of the commonly overlooked, intrinsic functions of language, particularly those cultural aspects that vary from one language to the next. Then, the author argues that the lack of cultural awareness in the English language has affected second language acquisition among native English-speakers. The age of globalization has seen an influx in the number of nonnative English-speakers, and with that influx, there has been a subsequent decline in second language acquisition among those native English-speakers. This inverse situation is changing the way native and nonnative speakers are viewing one another. Therefore, this author urges that the cultural aspect of a language play a more central role in second language education, as well as that the attitudes toward bilinguality and biculturalism be analyzed in the largely monolingual context of the natively English-speaking inner-circle.

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## Introduction

Language has always served as the medium for human communication and interaction. However, the importance which society gives to different languages has always been a subject of great concern. In the case of English, the language has emerged in the last several centuries as a global *lingua franca*—or common language—and while sociolinguists debate the advantages and disadvantages of this phenomenon, Marshall McLuhan would have described this change as inevitable—an “overheating” of the medium of language (“Reversal” 33). Beginning with language in its simplest form, several linguistic and communication theories aid in explaining the function of language in the mind as well as its societal development. A strong analysis of these theories will allow us to more thoroughly explore the situation of English as a growing world-language and the subsequent implications that this phenomenon has on both nonnative and native English-speakers. In effect, this essay has two goals: first, to examine the deeper meaning of language beyond its communicative value, and second, to observe how the deeper meaning of individual languages affects second language acquisition (SLA), particularly among native English-speakers.

## Language: The Medium Shaping the Mind

It goes without saying that language serves as a form of communication—or as Stuart Chase describes, “competence [in a language] as a vehicle for meaning” (qtd. in Whorf v). However, there are many multifaceted implications of language that often go unlooked. McLuhan famously stated, “The medium is the message”—that all mediums are simply extensions of our own senses as human beings (“Medium” 7). Thus, nearly every form of communication, spoken or written, broadcasted or printed, is language, and furthermore, if every message has an underlying medium, McLuhan implies that language is the medium of *thought*. For thought, as Benjamin Lee Whorf states, is inseparable from language (vi).

Whorf, discovering his passions for linguistics later in life, concerns himself specifically with the link between language, thought, and reality. His prior research studies allowed him to explore and analyze the differences between languages, concluding that these differences can be more than just lexical—that they can shape the speakers’ views of the world. This conclusion is Whorf’s theory of linguistic relativity, “which states, at least as a hypothesis, that the structure of a human being’s language influences the manner in which he understands reality and behaves with respect to it” (23). Whorf’s theory assumes that every language offers a different perspective of the world to its respective speakers, some very similar to one another, and others quite different.

Whorf takes particular interest in the holistic principles of the mind presented in Gestalt psychology, a contemporary German school of thought in philosophy and psychology. He praises the ideas of Gestalt theories regarding mental configuration, or rather how the human brain is set up and how it adapts and configures itself. He then extends upon those principles stating, “When we attempt to apply the configurative principle to the understanding of human life, we immediately strike the cultural and the linguistic (part of culture), especially the latter, as the great field par excellence of the configurative of the human level” (41). Therefore, he claims that there is a linguistic component built into our mental configuration that is shaped by our culture and language, giving humans their culturally specific views of the world.

The problem, then, is realizing the limits that each individual language has in relating to others, especially outside of the Western world. Whorf emphasizes, “The very natural tendency to use terms derived from traditional grammar, like verb, noun, adjective, passive voice, in describing languages outside of Indo-European is fraught with grave possibilities of misunderstanding” (87). In the wake of these linguistic and cultural differences among languages, the question becomes how best to approach SLA in the classroom. James L. Citron of the University of Pennsylvania further elaborates on Whorfian ideology with his hypothesis of ethno-lingual relativity. Citron’s theory advocates that, because “languages reflect the cultures of their speakers, . . . having a mind that is open to other ways of looking at the world might help one to learn a new language” (105). He bases his theory of ethno-lingual relativity upon two ideas: the first being that languages are not a mere translation of one another and that no single language is more right than another, and the second principle being that one must be able to understand that which is culturally linked to



one's mother tongue—that is to say, those ideas and concepts that could change from one language to the next (106).

### **English: The Decentralized Language of the Global Village**

These many cultural differences that exist from one language to the next enable us to now look at English as a particular case. As mentioned previously, to philosopher and communication theorist McLuhan, the true “boom” of English would seem quite a natural occurrence with the coming of the electric age. He would contribute the English shift to the “retribalizing process wrought by the electric media, which is turning the planet into a global village,” elaborating, “The instant nature of electric-information movement is decentralizing—rather than enlarging—the family of man into a new state of multitudinous tribal existences” (“Playboy” 71–73). The electronic age offers a point of reconnection, a global village in which virtually anyone can take part no matter the location, whereas the written age and its printed word was exclusive and offered independence, separating the individual readers. McLuhan describes that despite expansive physical distance, new technologies are connecting people who were previously estranged in new ways that allow them to take on an interconnected, neotribal aspect. This retribalizing of society can help explain the current trend of moving towards one single, more global language; with increased interconnectivity comes a need to communicate more freely.

English, being at the center of technological and media development, has exported itself as a new global standard in international communication. In the midst of this exponential growth, native English-speakers have subsequently attached themselves to a strong monolingual ideal. However, even from the beginning of British colonialism and imperialism, as Robert Phillipson describes, “Monolingualism has a long pedigree” (“Dominant” 19). In fact, Phillipson dedicates an entire chapter to the spread of English entitled “English, the Dominant Language” in his book *Linguistic Imperialism*. The title itself implies that English certainly still imposes a strong linguistic pressure, despite the fact that the colonial and imperial sense of physical imposition has passed in our globalized society. In another article, Phillipson argues, “The role of English in post-colonial societies has served to maintain western interests, and . . . the education systems of independent states have continued the language policies of colonial times virtually unchanged” (“Globalisation” 187). This imposition can result in cultural identity issues among nonnative speakers of English. These cultural issues are nonetheless reminiscent to those caused by colonial and imperial imposition.

As Phillipson describes, “The representatives of the English-speaking dominant group seem to be unable to appreciate that linguistic and cultural diversity, bilingualism, and biculturalism are assets to the individual and society” (“Dominant” 20). One could contribute this lack of appreciation of multilingual and multicultural diversity to the pragmatic viewpoint (in the Whorfian sense) that is part of the English language. This hypothesis would assume that native-speaker English inherently gives its speakers the idea that language serves little more than a communicative purpose, a statement that James Crawford affirms, stating that “language has seldom functioned as a symbolic identifier in the United States, as an emblem

of national pride or a badge of exclusivity" (6). Furthermore, McLuhan tells that "in a culture like ours, long accustomed to splitting and dividing all things as a means of control, it is sometimes a bit of a shock to be reminded that . . . the medium is the message" ("Medium" 7). According to him, being at the center of the current exported culture, per se, the monolingual English-speaker forgets that the message he or she is giving is, in fact, English. With this in mind, we can now explore more deeply how SLA in English-speaking countries is affected by the strongly monolingual message it extends to the world.

### **The Dangers of English-Only Ideology**

After exploring Whorfian theory as well as further ideology linking language and culture, we can infer that there is an implicit relationship that links languages and the view that languages give to its speakers—a collective cultural understanding of the world. Going back to Citron's theory of ethno-lingual relativity, which states that an increased cultural-awareness can aid in learning a foreign language, we must look at the current situation in America, as well as other English-speaking countries. Phillipson notes the continual spread of English, stating that its "dominance . . . is also being consolidated in other dimensions of globalization such as military links (NATO, UN peace-keeping operations, the arms trade), and culture (Hollywood products, BBC World, CNN, MTV)" ("Globalisation" 187). Because English has become the most-used language of international communication, the native English-speaker is confronted much less frequently by outside languages than speakers of other languages, and even less frequently is that contact on a continual basis. Citron makes the claim that, in general, Americans have more difficulty learning a second language because of their lack of exposure to that which is foreign, whether it be culture or language; he even goes so far as to say that many Americans are trapped by their "culture cages" (105).

As English finds more and more uses in official international contexts, its use, it seems, becomes ever more implied to native English-speakers. Phillipson criticizes this complacent mind-set stating, "Critical scholarship ought to analyze the strong forces that are at pains to create the impression that English serves all the world's citizens equally well, or those who uncritically assume this is so, when this is manifestly not the case" ("Globalisation" 188). English-only movements have changed public opinion on bilingualism. According to Sander Gilman, there are two starkly different views toward bilingualism in the United States: the negative opinion of native bilinguals with lower prestige languages, and the positive perception of a learned bilingualism through education; "the common wisdom is that immigrant children in urban areas should be moved as quickly as possible from their first language to English so they can join the mainstream and become 'real Americans,'" whereas, "bilingualism is a good thing in the suburbs," affirms Gilman (1032).

This negative perception of bilingual immigrants goes hand in hand with the importance, or lack thereof, that is given to bilingualism. When looking at bilingualism and English-only policies, it is important to know the underlying goal of its supporters, as well as the façade its policy-makers put in front of it. As Crawford explains,

When Americans are asked simply, “Should English be the official language?” the idea seems extremely popular. . . . On the other hand, when pollsters ask whether government should restrict minority language use or terminate bilingual services to those who depend on them, support for English-only policies falls off significantly. It appears that declarations about the primacy of English are more broadly endorsed than edicts to enforce it. (5)

The unfortunate circumstance, however, is that the lawmakers behind English-only proposals fail to mention the latter intentions with which the general public disagrees, and there is often little research done by voters in light of such language laws.

The complacency with which native English-speakers have embraced English-only policies paired with their growing disregard of SLA has led some linguists to warn that the world is developing new relationships with the English language, relationships that may soon render its monolingual native speakers as inferior in global contexts. Although globalization may presently be seen as advantageous to English native speakers, James Coleman warns that as more and more countries adopt English, the linguistic standard veers from those natively English-speaking countries, and that “native speaker English [could] become a sociolinguistically marked variety, no longer automatically acceptable in international contexts” (11). This warning urges Americans to adopt stronger foreign language policies in order to remain competitive, and accepted, in the world market and to question its goals for foreign language use. Additionally, Richard D. Lambert notes that the U.S. “current prevalence of short-term language study reflects the low level of importance given to the mastery of a FL [foreign language] in the larger American society” (350). The challenge, then, is not only to target the current curriculum and modify it to emphasize language mastery, but also to prove its value and usefulness in an increasingly global society.

### ***Foreign Language Policy in the United States: Adapting and Updating***

It seems that while English has become an international lingua franca, foreign language curriculum standards have taken a backseat in natively English-speaking countries. Coleman finds the United States to be a large contributor to this occurrence of English implementation in its abandonment of required foreign language study as early as the 1960s (6). Many linguists have pointed out America’s incompetence in foreign language proficiency; however, little has changed in curriculum standards, and it is questionable how much will change as Lambert claims that “the devoutly monolingual persuasion of the general American public is legendary” (350). Nevertheless, many linguists and foreign language instructors have given numerous suggestions to improve the foreign language curriculum as well as competencies in the American classroom. Much of this research goes back to the idea that language is implicitly linked to culture and that current teaching methods detach cultural aspects from language, considering language instruction as merely “skills transfer” (Gilman 1034).

Gilman states that after World War II in the United States “language was reduced to a means of communication, and speakers did not need to claim any deep knowledge,” an attitude

that came to “haunt the teaching of language and culture in American higher education” (1033). As other linguists and pedagogues might agree, this post-war mindset still plagues SLA policies in the United States today. Lambert criticizes that the difference between American language policy and European policy is that language instruction in the United States has not provided a clear use of language for its learners and that the United States lacks comprehensive standards to measure proficiency. He advises, “We have much to learn from the Europeans. They do not share our belief that a generalized proficiency in a language is all that needs to be measured” (349). Gilman echoes Lambert saying that, in higher education, “graduate students are taught to teach the language as an end in itself” (1034).

Gilman furthermore advocates, “Language is a tool of analysis but also the best object for analysis” (1034). He mentions a second trend that is common among linguistic scholars, that of language across the curriculum. The notion that students pursue their studies in a bilingual situation seems fairly extreme in our monolingual society, but it only emphasizes the idea that determining language use breeds successful language learning. The study of a myriad of subjects in a target second language can offer insight as to how one particular language views certain subjects differently. This inherent connection between language and culture, as Citron notes, is a vital part of successful language instruction.

Many scholars have suggested similar language across the curriculum methods such as the one proposed by Gilman. In fact, outside of the inner circle—thus, the group comprised of those for whom English is their native language or those who are fluent in English—many European universities and higher education programs are beginning to offer more and more programs taught in English with efficacy. However, although this trend does prove successful in creating fluent speakers, it affects native English-speakers negatively. These programs are increasing the number of fluent English-speakers and concurrently decreasing language programs in English-speaking countries, causing a sociolinguistic phenomenon. Therefore, while the Bologna Process (the unifying and streamlining process of the European Union’s universities) touts the motto, proclaiming “*Many Tongues, one family*” (Coleman 11), could the opposite be said of the cultural “melting pot” of the United States—*Many people, one language?*

In effect, these English higher education programs lack reciprocity; as countries are implementing English language acquisition, they are not in turn exporting their own native language (Coleman 11). And although “study abroad . . . has been a central element of European policy and its implementation for two decades,” the United Kingdom is experiencing an increasing disinterest in language studies as well as a lack of students choosing to participate in European exchange programs (9). Although now, with the exponential growth of English taught courses, Coleman notes, “At student recruitment events in the UK [and America], study abroad is touted as a selling point, but with the added attraction that students do not need to study a foreign language” (9). This phenomenon leaves one to speculate the effectiveness of a “cultural” exchange in which neither language nor culture need be learned. Although “[m]ost people in the world now develop a *bicultural identity*, in which part of their identity is rooted in their local culture while the other part stems from an awareness of their relation to the global culture,” as noted by psychologist J. J. Arnett (Coleman 11), there is the native

English-speaker who could eventually be seen as sociolinguistically inferior outside of his home country (11). This is a scary proposition for native English-speakers considering the current sense of dominance their language has as well as the comfort English brings them in international situations.

## Concluding Remarks

After viewing theories of linguistic development, the realization language's deeper, cultural functions become more accessible. In turn, these theories give more clear-cut ideas about how to best approach SLA. It seems that, in the case of English and its exponential spread, many of these theories have been overlooked when considering SLA. Coleman describes that "function determines use, so language and cultural practices are intimately connected" (2), and even though many native English-speakers may be unaware of the cultural impact that English carries, we must not forget that language does indeed include a strong cultural characteristic, which, once realized, can aid in SLA.

The ratio of nonnative to native speakers of English, according to Coleman, is nearing five to one (3). It is not hard then to imagine that the growing number of people using English in a di- or multiglossic relationship with their native languages could, in fact, view monolingual English-speakers differently, especially because they are part of the growing minority. It is important to recognize these changes in the spread of our own mother-tongue as well as adapt our own SLA programs to meet this change in an adequate manner. Globalization, viewed as a broad, encompassing term, has contrarily become limited to English; however, as Phillipson describes, "English being referred to as a 'universal' lingua franca conceal[s] the fact that the use of English serves the interests of some much better than others" ("Globalisation" 188).

Further research into the di- and multiglossic nature of English in different regions in the world is necessary to better grasp just how the native/nonnative speaker relationship is evolving. And in particular, research continues to analyze the breakdown of the Latin language in to the present Romance languages, and if, in fact, a similar breakdown could be occurring within the English language and its developing dialects and standards.

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# Haircut

Jessica Boykin

## Abstract

Jessica Boykin is a junior English major and German minor at Missouri State University. This story was inspired by conversations Boykin has observed and participated in with men and women concerning beauty and by questions Boykin has asked herself about the importance of beauty and the standard of beauty for women.

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## Haircut

Every six weeks, Margaret returned to the salon for a trim, just to keep the ends soft. “Just a quarter-inch trim, please. No more.” She would say each time, though she always returned to the same stylist at the same time every sixth week. The stylist would snip at her hair, and Margaret would read a magazine or pick at her fingernails. Every haircut made her nervous, every time. She felt like she was losing a part of herself that would later be swept up, along with the dust clinging to the tile floor of the salon.

Margaret rolled the soft curlers out of her hair, and covered her head with a fine mist of hairspray. She grabbed her brown jacket from the coat hanger in the foyer and left her house. The sky was gray and the clouds above her head looked heavy, and Margaret pulled her jacket tight around her waist, preventing the cool air from seeping into her ribcage. She walked along the driveway and got into a steady rhythm: left, right, left, right. Leaves crunched under her feet, browned and dry, soaking in the water from the street. Margaret neared the bus stop and took a seat on the bench. At the other end of the bench, sat her neighbor from five houses down the street, reading the paper and tapping his foot. When her neighbor looked up at her, his dark gray hair appearing pale against the dull sky, Margaret looked away.

“Oh, hello, Margaret,” he said, smiling and folding his newspaper. “It’s been a few days since I have seen you, hasn’t it? I’ve been meaning to stop by. You’re looking wonderful, you know.”

“Thank you,” Margaret smiled and sifted through her satchel, as the bus arrived at the stop. Her neighbor stood and entered the bus before she had looked up. As Margaret saw the school through the bus window, she remembered how she had promised her students that she would have a final schedule for them ready by today. She had forgotten the schedule.

The bus stopped in front of the Rose Building and the students filed out of it, followed by Margaret. Margaret walked to the Ellis building—a large, concrete rectangle building with few windows—holding her umbrella, though she knew it was useless. The rain blew up

under the umbrella, drenching every inch of her body except her face. She arrived in her classroom completely soaked, her skirt, heavy with water, sinking below her waist.

Her students were as drenched as she was, some even more so. The moment she entered the room, a blonde girl with several piercings but a friendly smile asked her if she had brought the revised schedule. Margaret shook her head, smiling, blaming human err. The students exchanged looks, which she skillfully ignored, as she began to write on the board the names of the early Impressionist painters. At the end of class, one of her students handed her a blue envelope with Hallmark imprinted on the seal. "We all signed it," she said, and smiled at Margaret and walked away. Margaret slipped the envelope in her bag, not thinking of it, and went to her office.

After her last class of the day, she called a cab to take her downtown to a salon she had seen advertised in the paper. The salon's name sounded edgy to Margaret: Sharp Shears. She had called the number in the paper and scheduled an appointment for that day, Monday, at 3:30, with Kathleen. Kathleen sounded like an ordinary name, Margaret thought.

Margaret handed the cab driver cash as she lifted her school bag from the backseat of the taxi and glanced both ways down the sidewalk. Students filled the sidewalks in droves, with their concert tees, their short skirts and baggy pants, and their headphones drilled into their ears. The shop signs on the street were dim, and the neon tubing looked cheap against the glass frames of the buildings. Margaret saw the salon, just a few feet away, with a painting of a pin-up girl, tan and leggy, with a pink and purple streaked bob painted over her original hair. Margaret hesitated for a minute, standing still on the sidewalk, people passing her on both sides.

"Did you have an appointment?" the receptionist asked, as Margaret opened the salon door. She was a large girl, in height and weight, with black braids falling from her scalp in every direction. Her eyelashes were thick and long, and her eyelids shone with glitter.

"Yes at 3:30. With Kathleen." Margaret looked around her at all of the twenty-some-things, both men and women, sitting in plastic chairs against the wall, reading magazines. She glanced back at the door.

"Margaret? If you'll just have a seat, Kathleen will be with you shortly."

Margaret sighed and sat in the most distant chair from the youths in the store. She sat, without headphones and without a magazine, in thought. Was she really going to do this? She had always wanted to cut her hair very short, above chin-length, but she could never convince herself to go through with it. She worried that people would mistake her for a man, which was somewhat likely. She wore little make-up, and her body was thin and tall, with very few curves. Her stylist at her regular salon often encouraged her to cut her hair shorter. "You have the perfect bone structure for it," she would say each time, making Margaret nervous that she would cut beyond the agreed-upon quarter-inch.

Every time she watched a Meg Ryan movie, every time she traveled to Europe, every time short hair was considered "in style" in the fashion magazines she perused at the supermarket, she was convinced that now was the time to cut her hair. But as soon as the thought entered her mind, she was filled with a sense of dread. What would her father think was always the first thought to come to her. Usually, this idea filled her with so much anxiety that she couldn't continue the train of thought any longer. She would brush her hair that night



and roll it into curlers, grateful to have her senses back. And yet, the urge to cut it all off kept coming back to her.

Margaret's eyes darted back to the door. A couple was coming in, both wearing tie-dyed clothes from head to foot and sporting henna-colored hair. Margaret smiled. What she was doing was really not all that outrageous. She was cutting her hair shorter. She wasn't getting a piercing or a tattoo. A haircut was hardly permanent. Margaret wondered if it was strange that she was already thinking of how her hair could grow back before she had even gotten it cut. Suddenly, she remembered the gecko her childhood friend had shown her when she was ten. She admired the beautiful skin of the lizard, but then she noticed its tail. "Why is its tail so plain?" Margaret had asked, looking at it sadly. "Oh, well, the pet shop owner said it had lost its tail, but it grew back. So that's why it looks funny." Margaret grabbed the ends of her hair, hovering just inches above her elbows and wondered if her hair would grow back as lustrous as it was. After all, she was getting older, and hair was destined to dry out and regenerate more slowly, along with the rest of the body. Margaret leapt out of her chair and strode toward the door.

"Margaret?" A woman with large green eyes and chestnut hair that was puffed out around her head in tight curls approached her.

Margaret only smiled back, her hand on the door handle.

"I'm Kathleen. Are you ready now?" Kathleen smiled at Margaret; the pale brown freckles on her cheeks framing her smile.

"Sure." Margaret responded, following Kathleen to the salon chair, while gazing back at the door longingly.

Margaret sat in the white vinyl chair, and Kathleen pumped her foot against the lever, lowering the seat. "Have you been here before?" she asked.

Margaret sensed the other questions from her over-polite tone. "I sure haven't. You probably don't see many people my age in here."

Kathleen looked confused. "What do you mean? You can't be over 30."

Margaret smiled. She was 30, almost to the day.

"So what kind of cut would you like? A trim? Maybe some long layers?"

Margaret let out a deep breath. "Actually I was thinking of going shorter."

"How short?" Kathleen inquired.

Margaret shuddered. This was the question she had not wanted to answer. She shut her eyes and lifted her fingertips to her cheekbone.

"Wow! Really? I wouldn't have guessed you'd be so daring. Especially with such long, beautiful hair. Do you want to donate it?" Kathleen smiled, her mouth open, revealing a chunk of pink chewing gum.

"Oh. Of course. Yes. Donate it. Sure." Margaret let all of these sentences out in the next long breath to escape her lungs.

Kathleen examined Margaret's face, gently placing her hands on Margaret's jaw and turning her head slowly in different directions to see it from different angles. She stopped, looking Margaret straight in the forehead. Kathleen grinned. "You've got the perfect bone structure for this cut, you know."

Kathleen turned the white chair so that Margaret was facing the mirror. She stood behind Margaret, and draped a black cape over Margaret's chest, clasping it together at the back of her neck. She then grabbed the shears from off of her desk and began to cut.

Margaret felt the weight of her locks dissipate as the scissors snipped. Finally, the scissors were silent. Kathleen held what had been Margaret's long, flowing mane up to Margaret's face. "That's a lot of hair." She said, anticipating Margaret's expression.

Margaret started to cry. She felt embarrassed as high-pitched sobs escaped her throat, but she managed to keep adequately quiet. Kathleen hugged Margaret and said, "It's just hair. When I'm done, you'll look beautiful, believe me."

She patted Margaret on the back, and Margaret eventually lifted her blotchy face and wiped away tears. She smiled, resolutely. "Okay," was all she said.

Kathleen circled the salon chair, lifting Margaret's hair in different angles and calculating carefully, then snipping it quickly. Margaret looked down at her knees, which were shrouded in the cape, as she avoided the mirror. Kathleen stopped and turned the chair away from the mirror. She ran her fingers softly through Margaret's tresses, fluffing parts in the back and smoothing it in the front. "Do you wanna see it?" She asked, an enthusiastic smile sweeping over her face.

"I guess so," Margaret replied anxiously.

Kathleen rotated the chair toward the mirror, as Margaret continued to stare at her knees. "Come on, Margaret. I think you're really going to like it," Kathleen smiled, and Margaret couldn't help but feel like she was sincere.

Margaret lifted her head to the mirror. She touched the strands that were strewn across her forehead, and tucked them behind her ear. "It's perfect," she said as she felt her cheeks heat up.

That night, she threw away the curlers that had always disagreed with her. She was amazed by how little time she spent brushing and blow-drying her hair. She had never considered herself seriously vain, but she wondered how she could have spent so much time in front of the mirror each night, trying to get her hair into a style it didn't like, trying to force it into something it didn't want to do.

The next morning, she got dressed, and merely ran a comb through her hair. She had not used any product to fluff or slick her hair. She hadn't curled, twisted, or braided it. She put on her coat and walked out of the door, the icy wind biting her neck. She took a deep breath of the crisp air. Margaret noticed that the buds on her magnolia tree were already beginning to swell, and it was not yet March. She smiled at the premature buds, hoping the magnolia tree would bloom early.

Margaret's walk was different somehow. Something was unfamiliar. She tried to realize what it was, but she could not remember. She looked around her, but she felt that she must have already passed the object that had been missing in the sequence. She sat on the bench at the bus stop beside her neighbor from five houses down the street. Margaret waved hello to the man.

He looked at Margaret and smiled. "Well, hello there. Are you new to the neighborhood?" Margaret laughed. "I can't believe you don't even recognize me," she said, grinning.

The man lifted his hand to his forehead, mopping back the bangs that the wind had spread out onto his face. “Oh, wow, Margaret. I *didn't* recognize you!” He chuckled.

“Well, I cut my hair. I guess it is a pretty dramatic difference,” she turned her face away from him modestly.

“Why did you do that?” he asked her, shaking his head. “You had some of the most beautiful, long hair I’d ever seen!”

When Margaret got home from work that night, her mom was waiting for her in the kitchen. “Why are you coming home so late?” her mom asked her, as she stirred a pot of stew.

“I’m just so behind,” Margaret answered, sighing. “I’ve got to catch up. It isn’t fair to my students if I don’t.”

Margaret’s mom looked up from the stew to look at Margaret. “Oh, Maggie!” she said, dismayed. “What have you done to your hair?”

“Well, I had it cut, Mom,” Margaret responded, setting her bag on the counter and taking off her coat. “I don’t really think it looks that bad.”

“No. No, of course. It’s not that it looks bad, that is not what I meant. I just—” her mother hesitated. “I know this is a difficult time for you, Maggie. It’s just so drastic. I don’t want you to feel like you did something rash, once you’re on the other side of this. Besides,” she frowned, “your hair was just so beautiful.”

Margaret avoided eye contact with her mother the rest of the evening. She described her day at the campus, how many of her students had complimented her hair, which was not entirely true. Only one student had complimented her hair, while the other students stared at her with a curious look. Margaret made an attempt to eat the stew her mother had made, taking spoonfuls of chunked vegetables and only drinking the broth from the spoon. She tried to convince herself that her mother had not noticed, though she saw her mother eye the bowl of vegetables and beef that was nearly drained of broth.

Margaret took a long shower that night, letting the warm water pound against her skin, as she stood motionless. When she finally came out of her daze, the water had turned cold, and she had to quickly soap and rinse, leaving soap bubbles on her skin and in her hair. She pulled the large, tattered t-shirt over her head, the one she had been wearing to bed the past two weeks. She got into bed and lay staring at the vaulted ceiling of her bedroom a long time. Half of the ceiling was painted a deep blue, with lighter patches where the paint was thin. They had been surprised by how tiring painting a ceiling could be. They had bought extra long paint rollers to reach the highest part of the ceiling, but the work strained their backs as they arched their necks to see the job.

He had promised to finish the job that Thursday after he got home from work. “As long as you promise to help,” he said, smiling, as Margaret rubbed the back of her neck, which was still sore. He had rubbed her neck while they lay in bed the night after they had first attempted to paint; she could remember that. He had brushed her hair aside, and gently squeezed the back of her neck between his fingers. Margaret had nearly fallen asleep, she had been so relaxed.

She stared up at the ceiling from her bed, and she realized the ceiling would never be finished. When she sold the house, people would ask why the ceiling was only half painted. The realtor would just shrug and tell the people, “Painting a ceiling isn’t easy,” and laugh.

She could remember how she had been making lasagna that Thursday evening. She had just put the lasagna in the oven when the phone rang. She wiped her hands on the towel that hung from the stove handle, and answered, her voice distracted as she adjusted the oven temperature. She had dropped the phone. The car was totaled, they said, and his death had been quick. She couldn't remember anything that she did before the fire alarm went off, feet away from her. The noise pierced through her coma, and she looked around the room in panic. The whole room was filled with smoke that was flowing from the seams of the oven door. She had merely turned the oven off and gone to bed.

She lay there now, clenching the shirt in her fists, sobbing. She rolled over and buried her head into the pillow beside her, out of habit. The pillow was cool, and it smelled like him. Margaret writhed on the bed, clutching the shirt and tearing it. She kicked the covers off of the bed and threw her pillow against the half-painted ceiling. She rolled back on her side and seized his pillow, pulling it against her body and taking in deep breaths of his scent. Finally, she was still. She could feel his fingers twisting through her hair how he had each night as they lay in bed. His hands turning her long locks and pulling them to his lips. How he had softly kissed her hair and breathed in its fragrance. Margaret tried to grasp his hands in the darkness, to pull him to her, but his hands were not really there, and neither were her long, flowing strands.

# Rethinking Art's Place in Plato's Republic

Lisa Dennis

## Abstract

The purpose of my paper is to argue against Plato's Allegory of the Cave found in the *Republic* Book VII. First, I'm attempting to invalidate his philosophy that all art is referential and therefore deceiving and useless by juxtaposing a painting of his Allegory of the Cave against the written work itself. I read once that "Those who live near waterfalls cannot hear the water," and so I'm also attempting to show that maybe Plato himself was too close to his philosophy to see that, because language is based on individual references, it might be just as deceiving as art.

Characters:

Plato

Isaac

Scene: A Coffee Shop in Kansas City circa 2008

ISAAC: Plato! How very good of you to meet with me. I . . . I'm nearly speechless!

PLATO: Yes, I can see that.

ISAAC: Have a seat. Would you like anything to drink?

PLATO: No, let's just get on with it. I only have a short while in the future and I heard of you and well, your theory. Let's just say I am only here to help a young and perhaps lost philosopher.

ISAAC: I'm flattered that you would even consider me a philosopher.

PLATO: Not in the strict sense, but I heard you were a bright student and full of ideas. I just hope this is worth my time.

ISSAC: To start, I just want make sure I understand some basic concepts.

PLATO: Understanding the soil is the first step in growing a mighty oak. What would the mountains be without the stones beneath the earth?

ISSAC: I understand that when we are born, our minds are deep in a cave. In this cave we see only reflections of images.

PLATO: (Looking a bit distraught) Yes, everything is so far from the truth at this point.

ISSAC: We are *in chains*, as you put it?

PLATO: Indeed, prisoner's boy! I do believe that is what I said. Did you bring me here only to remind me of what I have already written?

ISSAC I don't mean any disrespect. I just need to make sure we understand everything in the same way before I begin.

PLATO: Go on then . . .

ISSAC: This man in the cave is now released from his chains. He stands up, turns around, and, although the sight dazzles his eyes, he steps toward the exit of the cave. As he walks by, he sees a puppeteer and cardboard cutouts of dogs, horses, and men. He then notices the fire behind the puppeteer and realizes the images he has been seeing are only shadows; they aren't real dogs, horses, or men.<sup>1</sup>

PLATO: Yes, yes. Spot on!

ISSAC: Once outside the cave, the released prisoner can initially see shadows most clearly. He then sees, in a body of water, reflections of real dogs, horses, and men standing around the pond. This is the stage of discursive thinking. It's only after the man looks up to see the actual dog and the sun yielding its light and illuminating everything that he can finally gain true knowledge. He now can think and reflect on the sun and how it produces the seasons, and begin to build a store of knowledge that is based on truth and not on shadows.

PLATO: Quite right. Once he sees the sun, he realizes what a pitiful existence he had when he was inside the cave.

ISAAC: Do you believe he learned anything while inside?

PLATO: I don't understand. Everything he learned was false, just shadows. If any thought or image came into his mind, it was a mirage.

ISAAC: A mirage? A mirage of an oasis may perhaps include imagined images of real water and trees. They are *based* on real trees, outside of the cave. Therefore, isn't viewing the mirage more of a step toward knowledge than simply staring at complete darkness?

PLATO: What do you think you are getting at?

ISSAC: Well, do you think the prisoner who saw the shadows of the dogs is better off than a man who sits next to him blindfolded?

PLATO: No, I wouldn't say that.

ISAAC: Why is the blindfolded man better off?

PLATO: He is better because he isn't being fooled. Any man who sees the shadows knows nothing about dogs, their colors, their sounds, their breeding habits, their different species; he is confused and ignorant. While the blindfolded man sits in ignorance, his mind is in equilibrium. Once he is lied to by the shadows, he falls further from the truth. I thus believe it is better not to be fooled by the shadows.

ISAAC: I think I understand now. What would you say of poetry?

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<sup>1</sup> Plato. *The Republic*. Trans. Desmond Lee. Middlesex, UK: Penguin, 1974. 260–316.

PLATO: Are you mocking me? I heard you were a wise student, so surely you have read Book X of *The Republic*?

ISAAC: I've read it and I didn't mean any disrespect. I'm just a bit troubled by its subject matter and was hoping you could clear things up.

PLATO: (Annoyed, he nods his head for Isaac to continue.)

ISAAC: You state that poetry is thus injurious to the mind?

PLATO: Indeed it is! The poets will babble 'til the shadows draw long over things they do not understand. Their time would be better spent in contemplation than in creating these poems to distract others as well from thinking. A poet is a craftsman of words. He distracts us from the forms.<sup>2</sup>

ISAAC: If a poet is a craftsman of words, is the artist a craftsman of material objects?

PLATO: *Hmpf!* The artist is a craftsman of futility. He only renders what the craftsman has already built. Artists are liars. We would be better off without them. You still have these poisonous characters in 2008, I assume?

ISAAC: Yes, we do. Art can be found everywhere.

PLATO: The more art there is, the more people will look to it for truth and inspiration.

ISAAC: Can one not look into a beautiful painting and feel pleasure and find a truth contemplating the pleasing color patterns, the textures, and the subtle brushwork?

PLATO: No. You see, there are the Forms and then there are the craftsmen who create many objects based on these ideal forms. Take this table, for instance. Somewhere, there is an ideal form of table and here we see "table" once removed from the truth. Now, if an artist came along and painted a picture of this table, would it not be twice removed from the truth?

ISAAC: It would be.

PLATO: So, what is the point of the painting? The representations you see are so far from reality. There is no knowledge involved. The painter of this table knows nothing of how to build it. Why would I look at something that is so far from the truth? The divided line does not come full circle! A man will never experience knowledge after imaginings.

ISAAC: Are you saying that a painting can never be good in any circumstances?

PLATO: I'm not an aesthetician, so I am not one to say yes or no. But, I will say there could never be a useful painting.

ISAAC: Imagine yourself walking into an art gallery. Inside there are dozens of people gathered around a certain painting hanging in the middle of the longest wall. You can't see the painting, but you are listening to dozens of others huddled in groups throughout the room discussing the implications of this painting. One man says, "I have never wanted more to

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<sup>2</sup> Plato. *The Republic*. Trans. Desmond Lee. Middlesex, UK: Penguin, 1974. 421–436.

seek what is true and to do away with the distractions in my life.” Another person says “I feel so free! I’m so glad I came.” Although you can’t discern all the things these people are saying, you get the sense there is a great deal of contemplation and discussion on the topic of betterment and of truth. Would you say this is a positive reaction to a painting?

PLATO: This is all too idealized. Are you trying to contradict my teachings with this fictional nonsense? Anything can be proven or disproved in this manner. I could tell you an anecdote of a man who claims the sky is red. Does this mean the sky is red? No, it means I am a poor writer of fiction and should stick to philosophical teachings. Perhaps you should do the same. Moreover, I think you are forgetting one important detail in your story that doesn’t line up.

ISSAC: What is that?

PLATO: There could never exist a painting that would spark such conversations. Art is, indeed, twice removed from the truth and so nothing anyone would paint could spark such contemplation.

ISSAC: Cast your mind back to the gallery. As the crowd starts to thin, you glimpse the painting. You notice a man in the far left corner of the canvas chained to the ground, behind him another man, and then a fire. You realize you are looking at a painting of your own Allegory of the Cave. No detail is missing or out of place: the shadows being cast, the man outside the cave seeing the water, and the man observing the sun for the first time. Throughout the painting, there are boxes with arrows with the entire contents of the *Republic*, Book VII. Everyone is learning about the cave and, because of this, they are prompted to discuss what the painting means. Is this not bringing them closer to the truth? If it isn’t, you must admit your metaphor is useless as well.

PLATO: Isaac, that is clever—using my own pride against me. I do believe this particular painting could lead to a worthy discussion.

ISAAC: And eventually to a truth?

PLATO: Anything that causes one to think deeply about how to get further from the cave is a thought process that, if left undeterred, would eventually produce a truth in the individual’s life. [Pauses] How can this be? [Rubbing his head] If an image produces a truth, then the divided line is bent into a circle. There is no point in moving forward if the quest for knowledge is cyclical nonsense!

ISAAC: That’s what I’ve been realizing. Truth is only perceived as factuality because we base facts on references we have perceived to be true. The sun will rise tomorrow is a truth only based on our repeated observations and we therefore reason that the sun rising tomorrow “must be the case,” instead of a seeing it as a reality dependent on what we consider to be true.

PLATO: I see your point, but I do believe the sun rising is a fact that is undeniable. It would be easy to “disprove” all knowledge by setting its opposite as a possibility. In this case, only a madman would think the opposing circumstance was remotely plausible.



ISSAC: A madman? A man who cannot be trusted because he opposes commonly held knowledge? Is this your definition of mad?

PLATO: Without a doubt that is what I believe.

ISSAC: What of the confused man?

PLATO: Stuck in the cave! Obviously, confusion is analogous with darkness.

ISSAC: Imagine a man who has stepped into the light and has seen the sun and daily involves himself in deep contemplation. His name is Veritacious. A philosopher. A seeker of knowledge. But he is not an Athenian. In fact, far from it. He was born of a people that have never had contact with Greece. These people are isolated, yet they have all the same technology and have advanced similarly in language, the arts, and philosophy. One day, Veritacious boarded a ship and, because of a terrible storm, ended up in Greece. Here, he met a man named Eris. Eris found that this man spoke only gibberish and was obviously mad. He seemed Greek in every way except the nonsense he kept repeating. For his part, Veritacious felt the same way about Eris, as well as the rest of the Athenians he met. When Veritacious said "ship," Eris heard "sun" and when Veritacious muttered "storm," Eris heard "rise." The same confusion happened with the words "wreck" and "morning," as well as "help" and "won't." So when the sentence "Help, a storm wrecked my ship" left Veritacious's mouth, Eris mistook this for "The sun won't rise in the morning." Confused, Eris decided Veritacious must be a madman because all he said was the opposite of what the Greek knew to be factual.

PLATO: I'm a bit confused. If the language developed similarly how could there be such confusion?

ISSAC: The rules, structure, grammar, and pronunciation are identical. The only difference is, each word has different meaning than the Greek version. "Sun" for Eris is defined as a heavenly orb, a giver of life. In Athens, where Eris grew up, this was always the case because when someone spoke of "sun," they were referencing the heavenly orb. This was not the case for Veritacious where "sun" is used in reference to a ship; a man-made vehicle for the sea was the mental allusion everyone using the word understood. Would you agree that although "The sun will not rise tomorrow" has two different meanings to these men, neither is mistaken or confused but both interpretations are true?

PLATO: They are both true indeed, but only in reference to each man.

ISSAC: Do you mean in reference to each man and the interpretation he has for a particular work in his own mind? Independent of others, the reference in the individual's mind alone renders a statement verifiable?

PLATO: Yes, the story proves language can be referential in this way.

ISSAC: So language is an imitation, a representation of the meaning to which it refers, to the image it conjures in the mind. What a word refers to has no intrinsic meaning but is a matter of agreement. An agreement about a picture of the world. Plato! Your entire philosophy is

taught through language, and therefore requires collective comprehension of words. Your very own *Republic* necessitates the use of language and contemplative discourse to gain truth. Not meaningless, but a matter of convention, not “essence.” There is no “essence” of the world, only pictures (or games, à la the later Wittgenstein) embodied in and through language. Language’s relationship to reality is equal in distance to that of pictures and therefore I don’t see any difference with your own metaphors and artistic representation. It seems to me language is just as imitative as art and therefore synonymously deceiving.

PLATO: It looks to be so.

ISSAC: If this is true, philosophy is just as deceiving as art and perhaps even more so.

PLATO: More so . . . ?

ISSAC: Art does not live under the facade of proclaiming truth and loving wisdom. Art understands its place in the universe, and it seems it is philosophy’s time to understand her place as well.

# Ðæt Wæs God Gewrit: Parallels and Connectedness in the Telling of Tales

Kurtis Foster

## Abstract

The Anglo-Saxon belief in the kinship of past and present is explored through an analysis of four works from the Corpus of extant Old English Poetry: *Widsith*, *The Battle of Brunanburh*, *Beowulf*, and *The Prose Genesis*.

Time is an ethereal concept that is experienced, recorded, and perceived in vastly different ways in various cultures. To the descendants of Angles and Saxons living in England during the eighth, ninth, tenth, and eleventh centuries, history repeated itself quite frequently. Allusions to historical exploits and even past works of fiction ever on the tongues of bards and pens of poets show that the Anglo-Saxons viewed history not as a series of isolated points on a timeline that began, ran their course, and subsequently ended in the past, but as a continuous flow of events, causes, effects and lessons that not only endures into but also closely parallels and reflects the nature of the present. Secular poets and monks alike filled their works with references to the heroic Germanic lineage of the English-speaking world and the splendor of great men who once walked the earth in order to create a context in which their words could impact the world and impart to the audience the fact that they too reside in the unbreakable chain of history.

The poem *Widsith* is perhaps the oldest work of verse in the English language. As such, it is interesting to note that *Widsith* is entirely composed of references to the past, and even incorporates material that seems to have been written before it. Scholar and author of a thoroughly explained translation of *Widsith*, R. W. Chambers asserts that although the manuscript of this poem comes to us from an English monk around the year 1000, the poem itself was probably originally composed in the seventh century in Mercia (Alexander 10). That the poem survived the four centuries between its composition and finalizing transcription is a testament to the Anglo-Saxons' belief in the importance of history to contemporary society. Of the 142 verses that tell the story of the poet *Widsith*, meaning "wide traveler," a few seem to have been tacked on rather than composed originally by the same poet. The list of Germanic rulers and their tribes starting with Attila found near the beginning of the poem, for example, was probably compiled and canonized long before the writing of *Widsith* and simply added into the mix as a means of placing the poets' (both the actual composer and the figurative poet *Widsith*) words into the unending flow of history. As the aim of this poem is not to give a precise account of historical events, but to ignite in the audience a spark of wonder and reverence for the Germanic experience, some of the figures seem to be placed

anachronistically. The poet Widsith's assertion that he traveled with Ealhild into the land of Goth's on her errand to marry the Gothic ruler Eormanric seems more a means of developing a plot that would allow for the description of movement through and witness of many lands than an actual believable account, as the Eormanric of history had died two hundred years before the time of Ealhild (Alexander 10). However, this seemingly glaring historical error should not cause the poem to be discounted and marginalized. As a telling of Germanic history, it is accurate in conveying the pride and sense of kinship to these figures felt by the Anglo-Saxon. Lines seventy-five through eighty-seven show Widsith to be a visitor of not only the Germanic lands and peoples but the entire world:

Among Saracens I was, and among Serings I was, among Finns, among Creeks, and with Kaiser I was, who was the wielder of wine-filled cities, and rent and riches, and the Roman domain. I was with Picts and with Scots and with Sliding-Finns, with Leons and with Bretons and with Langobards, with heathens and with heroes and with Hundings, with the Israelites I was, and with the Exsyringians, and with Ebrews, with Indians, and with the Egyptians, among Medes I was, and with Persians. (Alexander 18)

Widsith's travels as described in this passage span time and space completely, so that it becomes obvious he is not a literal *scop*, or poet, but all poets, the spirit of tale-telling that thrives in the Anglo-Saxon heart. Chambers believes that this passage was added long after the original creation by a scribe seeking to augment the geographic and cultural scope of knowledge found within the poem. This too should be viewed as a manifestation of the Anglo-Saxon desire to infuse the past and present. That a scribe would consider writing his own knowledge into an already complete work shows that the culture of the Anglo-Saxon world encouraged the integration of the contemporary individual into the stream of antiquity.

The final lines of *The Battle of Brunanburh* invoke the memory of the Anglo-Saxons' first arrival on the British Isles as a reflection of a war with invading Vikings intent on claiming England for themselves. The poem speaks of many Viking earls being slain, how men of Mercia and Wessex fought hard and defended the land, letting not one inch fall under Norse sway. At the end, the poet describes the fighting and bloodshed as more profound than any battle throughout the entire island since the Anglo-Saxons invaded:

“Never, before this, were more men in this island slain by the sword's edge—as books and aged sages confirm—since Angles and Saxons sailed here from the east, sought the Britons over the wide seas, since those warsmiths hammered the Welsh, and earls, eager for glory, overran the land.” (Crossley-Holland 21)

It is ironic that the poet should choose the instance of a successful invasion of Britain and the slaughter and defeat of her inhabitants as a parallel to the successful defense of Britain and expulsion of invaders. Perhaps it is tribute to the forefathers who won the land, showing them that their descendants did not falter, but remained strong, heirs continuing the same fight for the land their ancestors had secured.

Because of its relatively late date of composition, having been written sometime in the eleventh century, *Beowulf* has a rich history of poetry and prose from which to draw. The poet of *Beowulf* was a master of inclusion, using stories and speeches given by main characters and songs and poems sung and recited by court *scops*. One such case of a preexisting story appearing in *Beowulf* can be found in the “Finn lay” given by Hrothgar’s *scop* at the feast celebrating Beowulf’s victory over Grendel. The lay, slightly under one hundred lines, details a feud between Frisians and Danes, beginning with death of the Danish King Hnaef at the Hands of the Frisian Leader Finn, and ending with the carrying out of vengeance by Hengest, Oslaf and Guthlaf, followers of Hnaef, upon Finn. The inclusion of this lay nearly one thousand years ago actually helped modern day scholars to identify a fragment of a story that survives only as a copy in an anthology by George Hickes. The Finnsburg Fragment begins in the middle of a sentence spoken by a Dane guarding Hnaef’s door. The forty-eight lines that remain of an unknown number end, as they begin, abruptly in the middle of a sentence. The brevity of the fragment and its relatively scarce use of names and lineage, mentioning only Hnaef, Sigeferth, Eaha, Ordlaef, and Guthlaf, without any reference to their country of origin or kin, would have made deciphering the overall story impossible, if not for the appearance of a similar tale in the lay given at a feast in Beowulf’s honor. The lay makes mention of the same Hnaef, Guthlaf, and Ordlaef (*Oslaf* in *Beowulf*), as well as the ambush chronicled in the Finnsburg Fragment:

Then Hildeburh ordered her own son’s body be burnt with Hnaef’s, the flesh on his bones to sputter and blaze beside his uncle’s . . . Thus blood was spilled, the Gallant Finn slain in his home after Guthlaf and Oslaf back from their voyage made old accusation: the brutal ambush, the fatye they had suffered, all blamed on Finn.” (Heaney 77–81)

In this case, the literary work *Beowulf* not only placed itself in the context of continuing time, but actually rescued the story from the past to which it alluded, thus demonstrating the connectedness of past and present in both myth and reality.

Sacred works make use of the Anglo-Saxon view of connected time as well. The Prose Genesis is one such work, using abridged verses, chapters, and even entire books from the Latin Vulgate to make the Old Testament Heptateuch accessible to an Anglo-Saxon audience. Aelfric of Eynsham composed a portion of text found in the Prose Genesis between the years of 992 and 1002 (Withers 113). The story of Joseph contained within Aelfric’s text is perhaps one of the best examples of the Anglo-Saxon penchant for reconciling the past and present. In the story, Joseph, an Israelite, is exiled into Egypt. God makes a covenant with Joseph that he will return to the Promised Land. In the Prose Genesis text, Joseph dies and is taken by Israelites to be buried back in his homeland: “Joseph died when he was one-hundred and ten years old, and they buried him with spices. He was taken to his homeland from the land of Egypt into his own kind, and he was buried in the midst of his own kin, where his body rests until the present day” (Withers 129). The statement that Joseph’s body remains in his homeland, “in the midst of his own kin” even now in the present forges a link between the events of the Old Testament and the life of the Anglo-Saxon reader. God’s

promise to Joseph is seen as continually fulfilled, even at the very moment the reader discovers this passage, conveying the message that God's work in the past still affects the current state of affairs. Upon reading this passage, the Anglo-Saxon reader can feel connected to what translator of the Genesis Prose Benjamin C. Withers calls "the infinite spiral of Christian history" (Withers 131).

Time is ethereal. Its definition, importance, and very nature are subject to interpretation. The modern English-speaking world, which has far surpassed in size and prestige its Anglo-Saxon roots, runs on schedules; beginnings and endings are necessary to facilitate punctuality. In English's past, however, time was considered the vehicle of one never-ending story. In the Anglo-Saxon culture, an occurrence that took place long ago was intertwined with the present unfolding of events. With such an outlook, a work might not ever necessarily be complete because history itself has not ended, is not set in stone. And if it is, it can be copied onto velum and improved.

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# Vps1 Functions in Intracellular Trafficking During Endocytosis

Chad A. Highfill and Dr. Kyoungtae Kim

## Abstract

The purpose of this research was to find out if Vps1 (protein) is involved in the intracellular trafficking of endocytic vesicles (endosomes), which are internalized via early endocytosis. To this end, we used a lipid binding dye called FM4-64 to label the endosomes so that we could track their movement using a fluorescence microscope.

We measured the degree of movement of the vesicles in wild type (WT) and mutant cells with a formula called mean squared displacement (MSD,  $\mu\text{m}^2$ ). First, our results demonstrate that Vps1 is required for endocytic motility to the vacuole. Second, the C-terminal GTPase effector domain (GED) and the N-terminal GTP binding/hydrolyzing (GTPase) domains are both needed for the function of Vps1. Third, the GED domain is critical for GTPase activity. Representative endosome tracks revealed that WT endosomes move in a relatively linear fashion, while mutant endosomes move in a relatively random fashion. Finally, we show here that the intact cable structure is a prerequisite for endosome motility *en route* to the vacuole. Our results obtained in this research provide some insights for the role of Vps1's in endocytosis.

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## Introduction

The dictionary's term for *endocytosis* is "A process of cellular ingestion by which the plasma membrane folds inward to bring substances into the cell" (American Heritage Dictionary, 2004). The budding yeast (*Saccharomyces cerevisiae*) is one of the best experimental models for the study of endocytosis due to easy genetic manipulation. Dozens of endocytic proteins are known to regulate the dynamic process of endocytosis.

Many studies have shown that the mammalian dynamin family plays a critical role in the early stages of endocytosis. They are involved in reorganizing actin cytoskeleton to enhance the membrane pinching-off process, a prerequisite to membrane internalization. Yeast contains three dynamin-related proteins: Vps1, Dnm1, and Mgm1. Only Vps1 displayed endocytic functions: (1) The loss of Vps1 resulted in the delay of an endocytic marker protein from the membrane to the vacuole. (2) Vps1 interacts with Sla1, an endocytic protein that is required for assembling endocytic vesicles at the membrane (Yu and Cai, 2004).

Vps1 is composed of the N-terminal GTP binding/hydrolysis domain, the middle domain, and the C-terminal GED domain. The GTPase and the GED domains are both

required for the function of Vps1 in vacuolar protein sorting (Vater et al., 1992). Historically, the importance of GTP hydrolysis in endocytosis has been tested by introducing point mutations into conserved amino acid residues. Dynamin GTPase mutants exert a dominant-negative effect on endocytosis in mammalian cells, supporting the notion that energy released by hydrolysis is required for dynamin's role in vesicle scission at the membrane (Yu and Cai, 2004). The physiological role of the middle domain in endocytosis is yet to be understood. Dynamin's ability to self-assemble is attributed to its GED domain by which the GTP hydrolysis activity is positively regulated.

Though the molecular mechanisms of endocytic vesicle formation on the cell membrane and their subsequent internalization are well known, endocytic vesicle (hereafter, endosomes) trafficking to the vacuole is poorly understood except that cytoplasmic actin cables help guide endosomes to the vacuole. Previously, Dr. Kim's lab at Missouri State University demonstrated that endocytic vesicle transit from the membrane to the vacuole was significantly delayed in the absence of Vps1. Two plausible explanations for that are as follows: (1) Vps1 is required to help with the formation of endosomes and moving the vesicles away from the membrane or, (2) the delivery process of the endosome *en route* to the vacuole is attenuated.

Here, we report that both the GTPase domain and especially the GED domain are required for the function of Vps1 to help with the trafficking of the endocytic vesicles to the vacuole.

## Methods

### Cell Growth

Yeast strains used in this study are listed in Table 1. Cells were grown in a standard yeast media called yeast peptone dextrose (YPD) at 30°C, unless otherwise stated.

### FM4-64 Dye Labeling Experiment

Grown cells are subjected to FM4-64 labeling experiment as described previously (Kim et al., 2006). Briefly, cells were spun for 10 minutes at 1000 rpm; 10  $\mu$ M FM4-64 dye was added to the cell pellet. Cells were then incubated on ice for 5 minutes, followed by washing into fresh ice cold SD Media twice. The washed cells were incubated for 3 to 5 minutes at 30°C to induce internalization of FM4-64 from the plasma membrane to the cytoplasm.

### Microscopic Visualization of FM-64 Labeled Endocytic Vesicles

A fluorescence microscope (Leica, DMI6000B) equipped with a digital camera was used to record time-lapse images with a Rhodamine excitation filter cube. We set our video recording rate at 120 frames in 40 seconds with 80 milliseconds of exposure time.

### FM4-64 Endocytic Vesicle Tracking Analysis

Time-lapsed movies were uploaded in Image-J (v1.39q). We converted the Tiff movie file to a text file that contains (x,y) coordinates of motile FM4-64 labeled vesicles. Using particle



**TABLE 1** Strains used in this study

| Strain Number | Genotype   | Strain information  |
|---------------|--|---|
| KKY 249       | <i>Mat a ade2-1 trp1-1 can1-100 ura3-52 leu2-3,112 VPS1::LEU2 his3-11,15::HIS3-Vps1-3myc</i>       | WT control cells that express endogenous level of Vps1                                  |
| KKY 250       | <i>Mat a ade2-1 trp1-1 can1-100 ura3-52 leu2-3,112 VPS1::LEU2 his3-11,15::HIS3-vps1^K42E-3myc</i>  | Mutant cells expressing a Vps1 mutation in the GTPase domain (K42 was replaced with E)  |
| KKY 251       | <i>Mat a ade2-1 trp1-1 can1-100 ura3-52 leu2-3,112 VPS1::LEU2 his3-11,15::HIS3-vps1^S43N-3myc</i>  | Mutant cells expressing a Vps1 mutation in the GTPase domain (S43 was replaced with N)  |
| KKY 252       | <i>Mat a ade2-1 trp1-1 can1-100 ura3-52 leu2-3,112 VPS1::LEU2 his3-11,15::HIS3-vps1^G315D-3myc</i> | Mutant cells expressing a Vps1 mutation in the GTPase domain (G315 was replaced with D) |
| KKY 270       | <i>Mat a his3Δ leu2Δ met15Δ ura3Δ GED domain::HIS</i>  | Vps1 mutant cells lacking the GED domain  |
| KKY 127       | <i>Mat alpha his3Δ leu2Δ lys2Δ ura3Δ VPS1::KanMx6</i>  | Vps1-deficient cells  |

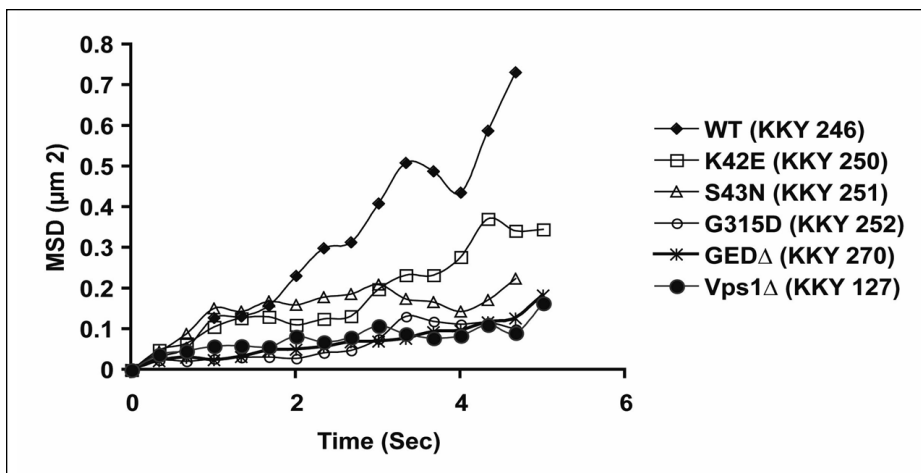
tracker software (Tracker X), the position values of all vesicles were displayed in Excel software (v.2004). We determined the displacement ( $\mu\text{m}$ ) of the vesicle from its origin at each time point and squared the distance to better characterize the motion of vesicle. The mean squared displacement ( $\text{MSD } \mu\text{m}^2$ ) was determined using a total of 20 vesicles and was plotted as a function of time (sec). A representative vesicle movement track for each yeast strain was created using Excel software Figure 1A.

### Actin Cable Staining and Examination of the Cable Structure

The cytoplasmic actin cables were stained using Rhodamine-Phalloidin dye, and the percentage of cells that carry intact cables versus segmented cables was analyzed Figure 1C.

## Results and Discussion

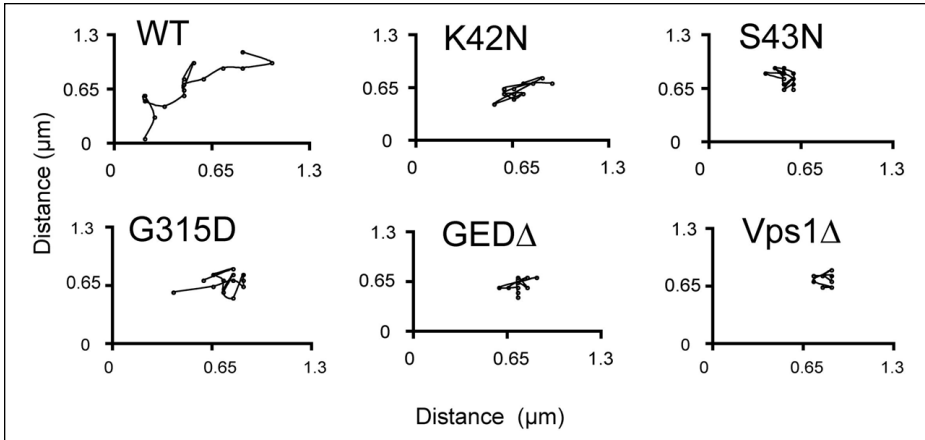
Given the loss of *VPS1* (gene) resulted in significant delay of endocytic vesicle delivery from the membrane to the vacuole. We hypothesized that Vps1 plays a key role in endocytic trafficking of the post-internalized endosomes prior to fusion of the endosome to the vacuole. To test the hypothesis, we first pulse labeled cells with the lipophilic dye FM4-64 for 3 to 5 minutes at 30°C to allow the dye-carrying endosomes to internalize into the cytoplasm, followed by recording time-lapsed movies of endosomes at the rate of three images per second for a total of 40 seconds. A particle tracking software was used to analyze the character and



**Figure 1.** The measurement of the moving distance of endosomes in the cytoplasm (MSD,  $\mu\text{m}^2$ ). A total of 20–30 freely moving endosomes were tracked from each strain to generate the MSD plot that shows the averaged values. Zero time in the MSD graph represents the time point in which the endosome was initially found for tracking (duration of 5–10 sec). The MSD values for only five seconds are shown here due to higher noise after five seconds. Note that the effect of GED truncation was equivalent to that of the loss of the full length of Vps1.

the degree of endosome movement in the cytoplasm as described in the methods section. As shown in figure 1A, the slope of WT MSD curve is greater than that of the *Vps1*Δ (cells lacking Vps1), suggesting that Vps1 is needed for cytoplasmic movement of the endosomes *en route* to the vacuole.

This result raised the question of which domains of the Vps1 are required for the observed endocytic function. We speculated whether GTP hydrolysis, which is mediated by the GTPase domain of the Vps1, is required for endosome movement. Three conserved residues known to be required for the hydrolysis are K42, S43, and G315. To test the significance of those residues, we used three GTPase mutant strains that carry a point mutation in the Vps1 protein; K42E (Lysine 42 was replaced by Glutamate), S43N (Serine 43 by Asparagine), and G315D (Glycine 315 by Aspartic acid). It is observed that the endosome motility of the three GTPase mutants was less than WT, but slightly higher than *Vps1*Δ (Figure 1A). In order to understand the role of GED domains on intracellular endosome motility, a yeast strain lacking the C-terminal GED domain was subjected to the particle tracking method. Surprisingly, the level of motility defect caused by GED truncation was essentially equal to the level of *Vps1*Δ (Figure 1). We have concluded that both the GTPase and the GED domains of the Vps1 are required for endosome motility, but the GED domain is more important than the GTPase domain.

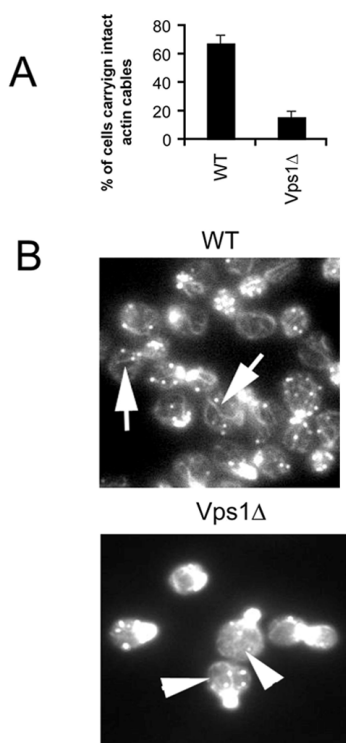


**Figure 2.** Representative tracks of endosomes for each strain. We choose one endosome from each strain to represent the true movement of the endosome. Majority of the WT endosomes, if not all, showed linear movement as shown here, while most of the mutant endosomes (K42N, S43N, G315D, GED $\Delta$ , and *Vps1* $\Delta$ ) were characterized by random movement.

Given the C-terminal GED domain is important for stimulation of GTPase activity (Zhu et al., 2004), it is most likely that the energy required for driving the endosome motility is absent without a GED domain. The mild motility defect in three GTPase mutants is attributable to the presence of two functional conserved residues in the GED domain that are capable of performing GTP hydrolysis.

The MSD plot (Figure 1) identifies motility defects but does not show real movement of endosomes in the cytoplasm, so we made representative endosome tracks for each strain. As expected, WT endosomes displayed a relatively linear movement (Figure 2), migrating more than 1 $\mu$ m per 5 seconds. In contrast, endosomes from all other mutant strains showed relatively random movement in the cytoplasm, manifesting a short movement less than 0.5 $\mu$ m per 5 seconds. This indicates that *Vps1* is important for endocytic motility *en route* to the vacuole and that the GED and GTPase domains are required for the *Vps1* function.

Using fluorescence live imaging, it has been recently shown that the cytoplasmic actin cables are implicated in endosome trafficking by serving as a track for endosome motility (Huckaba et al., 2004; Toshima et al., 2006). We reasoned that the partial to complete loss of the actin cables might slow the endocytic motility down in the cell cytoplasm. Therefore, we examined WT and *Vps1* $\Delta$  cells in terms of actin cable structures in the cytoplasm and found nearly 70% of WT cells showed intact cable structures (Figure 3A), running parallel to its longitudinal axis as shown in (Figure 3B arrows). The severity of actin cable defects in the mutant cells was obvious. Most cells (more than 80%), if not all, displayed numerous short fragmented actin cables (Figure 3A), distributed randomly in the cytoplasm (Figure 3B, arrowheads).



**Figure 3. (A)** Quantification of actin cable structure. The percentages of cells that carry intact cables were determined using 80–100 cells stained with Rhodamine-Phalloidin dye. As shown here, nearly 70% of WT cells displayed normal actin cables, parallel to longitudinal axis of the cell. In contrast, more than 80% of mutant cells contained fragmented actin cables. **(B)** Representative actin cables images from WT and the mutant show the difference between intact vs. fragmented cables, respectively. Arrows indicate long intact cables in WT cells, whereas arrowheads show fragmented cables.

It is thought that the loss of *VPS1* causes the abnormality in actin cable structure, which attenuates endosome motility and results in delayed endosomal trafficking to the vacuole. It is highly likely that Vps1 may directly or indirectly regulate the activity of an actin cable-maker protein called Formin, and thereby, the loss of *VPS1* might downregulate formin activity. It is also possible that certain signaling pathways that regulate actin cable structures are interrupted upon the deletion of *VPS1*; Cofilin1, a protein involved in trimming actin filaments, is possibly either activated or highly expressed by the loss of Vps1.

#### Acknowledgment

The strains (KKY 249-KKY252) that we used in this study were obtained from Dr. Cai in Singapore. We thank Dr. Durham's lab for letting us use the fluorescence microscope (Leica, DMI6000B).

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# Ocellated Turkey

Katherine Botts

## Artist's Statement

Judith Fowler's Drawing 215 students had the opportunity to practice life drawing in a unique way. Bass Pro brought in a variety of mounted animals for us to draw, including jackrabbits, pheasants, a mountain ram, white-tailed deer, and a black bear. We had a month with the mounts and were encouraged to try to approach each mount in a different way.

This drawing is a pastel rendering on brown paper of an Ocellated Turkey. The colors are not exaggerated, but actually represent the bright colors of this stunning Latin American turkey. In fact, it was the rich, opulent, bright colors that attracted me to the mount.

At first, I intended to spend one class period sketching the turkey on a larger piece of brown paper. Typically, we use the brown paper as a table covering for painting or gluing, not as a drawing surface. I chose to use the brown paper because the large size would require me to work bigger and the rough texture would allow me to work more expressively. As I approached the paper, however, my drawing was much more tightly rendered than I had planned and at the end of the class I decided I was not ready to put it away just yet. Using pastels, I rendered my piece tightly and photo-realistically. I think this piece's strength lies in that commitment to detail and truth, and the brown paper is fitting for the subject matter, as it makes the piece earthier, and less heavy-handed.



# Romance and Racial Relations: Content Analysis of Harlequin Romance Novels

Andrea R. Hirsh

## Abstract

Romance novels are a significant force in the cultural transmission of ideas, including current social constructions of race and ethnicity. This study involved a content analysis of 18 different romance novels within five different lines, spanning the years 1979 to 2007. The sample included original Harlequin Romance novels selected in the years of 1979, 1986, 1993, 2000, and 2007, as well as five different lines of 2007 novels. Minorities were represented in a stereotypical and unequal fashion in the original Harlequin novels. However, a greater variety of roles and representations were present in the differing 2007 novels. One major limitation of this study was the lack of inter-rater reliability, and all results should therefore be considered somewhat tentative.

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Society, specifically that of the United States, contains preconceived notions of race and ethnicity. Ideas about race and ethnicity are formed through a variety of different means, including stories and images presented in mass media. As Humphrey and Schuman (1984) point out, "Since many whites have little direct face-to-face contact with [minorities], the mass media's depiction of [minorities] is likely to influence white attitudes heavily" (551–552). One popular form of mass media is the novel, and specifically the romance novel. Racial images produced in novels help readers form generalized notions about these socially constructed categories. Therefore, images presented in popular literature are important to study to understand widespread conceptions of race in American society.

## Background

### The Rise of the Romance Novel

Romance novels, like other literary texts, are a commercial commodity in our culture. The content and number of novels published are directly controlled by corporations in the pursuit of profit. The romance industry's rapid growth partially resulted from changes in both corporate procedure and advances in technology. Radway (1991) chronicles this change from the 1600s through the 1970s.

In the 1600s, books were locally published for a small elite readership, and most were financed by the author. By the 1800s, the idea of reading, and conception of books themselves,



had dramatically shifted. Books were salable commodities, and this, along with higher literacy rates and better transportation, made them the perfect target for corporations. By 1937, Mercury Publications created the “first production scheme designed specifically to mass produce cheap paperbound books” (Radway 1991, 25). Mercury publishers focused specifically on mysteries, in the hopes of controlling both the readers and the books produced.

The popularity of mystery novels began declining in the 1950s, followed quickly by an increased interest in romance. In the 1960s, “gothic romances” became very popular, peaking between 1969 and 1972, at about 35 titles per month (Radway 1991, 33). These novels focused on “developing love relationships between wealthy, handsome men and ‘spunky’ but vulnerable women” (ibid). At the same time, corporate structure began to change in several fundamental ways. The first change, which Radway calls “the most significant development in American publishing in the twentieth century,” was the absorption of individual publishing houses into mass communication conglomerates (35). This adjustment provided paperback houses with extra money for advertising and market saturation, while making them more profit driven than before. Corporations began to sell romance novels in stores that women traditionally visited repeatedly, such as supermarkets and drugstores. Concurrently, giant book chains, such as B. Dalton and Waldenbooks, began to flourish. These corporate changes allowed both unprecedented numbers of and increased access to romance novels, which resulted in record numbers of readers and profits. According to Radway, “Its extraordinary profit figures convincingly demonstrate that books do not necessarily have to be thought of and marketed as unique objects but can be sold regularly and repetitively to a permanent audience on the basis of brand-name identification alone” (39). By the mid-1980s, romance fiction accounted for nearly half of all mass-market paperback books sold in the United States (Markert 1985, 682).

### **Harlequin Enterprises**

Harlequin novels, the focus of this study, were first printed in 1949. However, it was not until 1964 that the company began printing romance novels exclusively (Davis 2002). By 1977, Harlequin’s sales totaled 75 million dollars, with profits close to 11 million dollars. This was roughly 10% of the entire United States paperback market (Radway 1991, 40). Harlequin novels were so successful that many other companies began to follow their design, using predictable line romances to increase repeat sales to serial readers. Harlequin Enterprises, as of 1992, controlled an estimated 80% of the romance fiction market. The next most prolific publisher, Kensington Books, produced only 219 titles (Wyatt 2004). As of 2006, Harlequin reportedly sold 131 million books, making a profit of over 56 million dollars (Torstar 2007). Torstar Corporation, which owns Harlequin Enterprises, has also acquired competing romance brands, including Silhouette and Steeple Hill.

Harlequin Romance novels historically have presented a fairly homogenous view of women and of gender relations between men and women. According to Dubino (1993), “All varieties of the romance contain the pattern of ‘the heroine gets rich through love’” (103). Furthermore, most plots center on the courtship between the hero and heroine, and usually

end once the goal of marriage has been achieved. Gendered stereotypes of both men and women are reinforced in the novels. For example, the hero “is always older, taller and richer than the heroine, and usually moody, dark and inscrutable” (ibid). The heroine, however, can only achieve happiness by attaching herself to the hero, especially through sacrificing aggression and pride (Modleski 1980). This depiction reinforces the conservative feminine conception of women as passive and dependent, and sometimes manipulative. These characters become models of behavior for the reader, and therefore reinforce existing gender stereotypes within the culture. The readers of Harlequin Romances, according to Radway (1991), are forced to judge the reality of the novels in both plot and setting. For readers, “The fact that the story is fantastic . . . does not compromise the accuracy of the portrayal of the physical environment within which the idealized characters move . . . [the readers] assume that the world that serves as the back drop for those stories is exactly congruent with their own” (109). So, although readers might intellectually understand that the plot and characters are unrealistic, they do ascribe some realism to the novel.

Starting in the 1990s, the romance industry began to change in ways that partially reflected the ideas that had become popular due to the Women’s Rights Movement. This change manifested itself in three different trends: hard-core, sexually explicit romances; Christian romances; and the “single-woman” narrative. The first type indicates a growing acceptance of female sexuality and the idea of fulfilling female desire. The second type, Christian romances, is a backlash against this idea, and instead promotes conservative values, emphasizing the family and God (Darbyshire 2002). The third type of romance, the single-woman narrative, tends to emphasize “the late twenty- to thirty-something single career woman, desperately in search of love” (Philips 2000, 238). Harlequin created the Flip-side line for this trend, but only ran it from October 2003 to June 2005. Torstar, likewise, has diversified its stock, and currently has 31 different lines available through a variety of its own romance publishers.

### **The Portrayal of Minorities in Popular Culture**

Minorities have always been part of popular culture and the mass media, though their roles have changed dramatically over time. Humphrey and Schuman (1984) conducted a study analyzing magazine content for racial relations between blacks and whites over a period of more than 30 years. They found that there was a large rise in the appearance of blacks during the late 1960s, also the tail end of the Civil Rights Movement. Furthermore, blacks began to appear in higher occupational roles and have more interaction with white characters, but they never achieved equal status. Television also has played a major role, especially in more recent decades, in the cultural transmission of images. The Bunche Center for African American Studies (“Prime time” 2002) found that both black and white Americans were overrepresented in prime-time television. Latinos, America’s largest minority group, only accounted for about 3% of all characters on prime time, while Native Americans were not represented at all. Asian Americans, at 4% of the population at the time, accounted for about 3% of characters on prime-time television. Prime-time television disproportionately consists of shows featuring upper-middle class characters, with high-prestige occupations. This trend

also occurs in romance novels. The Bunche study found that Asian Americans were far more likely to be portrayed as doctors than any other group and that Latino characters had the lowest percentage of high-prestige occupations. The author points out that there are many types of Spanish-language media present in the United States that may cater more specifically to Latinos than prime-time television.

According to Taylor (2007), "Category romance lines published in the United States and Canada such as *Silhouette* or *Harlequin*, although not explicitly called white lines, almost never have nonwhite heroines or heroes" (1036). One exception of this, she points out, is what is termed the "sheikh romances." These novels focus on the romance between an Arabian sheikh and a white Western woman, normally from either Britain or the United States. *Harlequin* publishes at least one sheikh romance every few months, and these remain popular even with growing anti-Arab and anti-Muslim sentiments in the United States (Taylor 2007, 1037). These romances often explicitly discuss gender issues, under the guise of a meshing of cultures. The sheikh's country is shown as conservative and archaic, desperately clinging to the past, though the sheikh himself may be slightly more progressive. The white woman has liberal ideals about gender relations, and when these two meet, the Western, white, liberal ideas tend to succeed.

*Harlequin* has also diversified its stock and lines to appeal to minority readers, specifically African Americans and Latinas. *Kimani Press*, a publishing line owned by *Harlequin Enterprises*, specializes in African American romances, written by African Americans and marketed toward African Americans. *Kimani* itself has six different lines. *Kimani Press Arabesque* focuses on traditional and contemporary romances. The press's *Kimani Romances* are, according to its website, "sexy, entertaining love stories that keep it real with true-to-life African-American characters who turn up the heat and sizzle with passion." *Kimani Press's TRU* series focuses on young adults, its *New Spirit* series is "inspirational fiction and motivational nonfiction," and the *Sepia* line has no specific format. *Harlequin* has also diversified to appeal to native Spanish speakers. *Harlequin* lines *Bianca*, *Deseo*, *Jazmin*, and *Julia* are written and marketed in Spanish.

## Methodology

### Selection Criteria

This study focuses on if and how racial representations have changed over time and on how minorities are presented today. Therefore, this study was conducted in two parts: analyzing original line *Harlequin* romances over a span of 28 years, as well as analyzing five different lines from the year 2007. Two novels from the original *Harlequin* line, using simple random selection, were chosen from the years 1979, 1986, 1993, 2000, and 2007. These ten books cover a wide range of years, showcasing how minority representations have changed in the last thirty years. The books from 2007 were chosen, also using simple random selection, from these five lines: *Harlequin Romance*, *Harlequin Presents*, *Harlequin Blaze*, *Harlequin Intrigue*, and *Steeple Hill Love Inspired*. *Harlequin Romance* and *Harlequin Presents*, as the two longest running lines, express the traditional *Harlequin* ideas. *Harlequin Blaze*

embraces the trend toward more explicit, hard-core romances, and Steeple Hill Love Inspired delivers the trend toward conservative, Christian romances. My final line in the study, Harlequin Intrigue, was chosen as a contemporary romance merging two of the most popular genres. Harlequin Historical, the favorite line in Radway's (1991) study, was excluded because the books did not take place in a contemporary setting. A novel, for example, that took place in Georgia during the antebellum period would legitimately portray African Americans in a different light than today. The Romance Writers of America (2008) ranked the settings or subgenres most enjoyed by readers. The four most popular were all represented in this study; with mystery, thriller, and action plots preferred by 48% of readers, exotic settings by 36% of readers, contemporary themes by 33% of readers, and inspirational romances by 31% of readers. The next five most popular settings or subgenres, whose preference was ranked from 21 to 27% by most readers, were ineligible for this study, as they failed to take place in a contemporary setting.

A total of 18 books comprise the study, with 10 in each part (the 2007 Harlequin Romance novels count in both parts of the study). The master list for each year or line was compiled from an online source, entitled RomanceWiki. (For a list of all books in the study, see Appendix A.)

### **Coding**

This study analyzes both the frequency and role of minorities appearing in each of the novels. Racial and ethnic minority groups include, but are not limited to American Indian or Alaskan Native, black or African American, Asian American or Pacific Islander, Hispanic or Latino/a, Arab or Middle Eastern, and multi-ethnic persons for novels that take place within the United States. Most of the groups are the same categories identified by U.S. Census Bureau, with the exception of Arab or Middle Eastern. This category was included as that group has garnered a lot of media attention, especially post-September 11th, 2001. However, many of the novel's settings are in Australia, New Zealand, or England. These countries also have large minority groups, such as Aborigines, Kiwis, and Indo-Pakistanis.

The frequency of minorities is coded in both raw numbers and percentage of total named characters. Total named characters, furthermore, is split between those actually appearing in the books and those who have only been mentioned in passing or as backstory. Unnamed characters, or characters with only titles, also frequently appear within the novel. However, it is impossible to get the total number of unnamed characters. Because their titles may appear as herdsman, police officers, or nurses the reader is unable to determine exactly how many people appear in such groups.

The role of minorities is coded on a scale of statuses and interaction, which is as follows: main character, main supporting character, minor supporting character, and server. Main characters (coded as 4) are either the protagonist or the love interest in the novel. The novel is based around this character and she or he cannot be replaced. Main supporting characters (coded as 3) have serious interactions with either the protagonist or the love interest. They furthermore can be broken down as positive or negative interaction. For

example, a rival for the love interest interacts with the main characters throughout much of the novel, but in a negative manner. Main supporting characters are important to the main characters and frequently are mentioned throughout the novel. Examples of this role include a rival or other antagonist, immediate family members, and close friends. Minor supporting characters (coded as 2) have limited interaction with the main characters and normally are not featured throughout the entire novel. Although most have names, they exist mostly to fulfill the needs of the main characters through their actions. They may also advance the plot by providing critical information to the main characters. Examples of minor supporting characters include Jane, a workmate from down the hall, or Joe, the protagonist's best friend's roommate. Servers (coded as 1) act, as their name implies, to serve the needs of the main characters and other supporting characters. Most server-type characters do not have a name and no background information is needed for them. Examples of servers include receptionist, nurse, or police officer. Servers normally only appear once within a novel.

The types of interaction between the main characters and minority characters (except for when they are the same) are coded as 0=no interaction, 1=formal interaction, and 2=informal interaction, a coding schema suggested by Humphrey and Schuman's (1984) study of blacks in magazine advertisements. No interaction occurs when a minority character is only mentioned and does not actually appear within a book, or when the minority character only interacts with one of the two main protagonists. Formal interactions occur in an involuntary situation. For the majority of characters, this occurs within a work environment, when the protagonist is forced to interact with the minority character. Examples of this include a minority character and the protagonist interacting as law enforcement partners, or one serving the other at a diner. In the first example, the partner would be coded as a major supporting character. In the second example, the character may either be coded as a minor supporting character or a server, depending on the context of the book.

Informal interaction is set up within social situations where characters interact by voluntarily choosing to be together, such as at a dinner or a sports game. Types of interaction can be double coded; a character may interact with the protagonist both formally and informally. Humphrey and Schuman (1984, 562) found that magazines portrayed blacks and whites interacting informally less frequently than whites by themselves. Informal interaction is a higher level of integration because it tends to be voluntary for both parties.

Physical descriptions and psychological traits are also recorded for all minority characters, if such information is available. This involves direct quotations from the text. (For an outline of the coding schema, see Appendix B).

### **Procedure**

Before the books for the study were read, the coding format was pilot tested on four books. These books were published in different years, ranging from 1974 to 2007, and different lines (Harlequin Romance, Harlequin Presents, Harlequin Intrigue, and Steeple Hill Love Inspired). This helped to refine and expand the coding schema. Race and ethnicity were not explicitly stated for many characters. This falls into the literary assumptions of race and

ethnicity. In novels, all characters mentioned are of the majority of that region or locale, unless otherwise mentioned. In novels in which settings are in the United States, Britain, Australia, and New Zealand, the dominant social race is Caucasian. As Lewis points out, “the whiteness of a white subject is so normative that it is often experienced as a nonevent unless activated by comparison with a black subject,” (quoted in Taylor 2007, 1036). This, however, can also work in other settings and cultures where the dominant race would not be white. For example, all characters in Ernest Gaines’s novel *A Lesson Before Dying* are assumed to be African American, unless otherwise indicated. Likewise, in Kyoko Mori’s book, *Shizuko’s Daughter*, all characters are assumed Japanese.

### **Inter-rater Reliability**

Both the coding schema and the assumption of majority race require personal interpretation. However, as an independent senior project, like many masters’ theses and doctoral dissertations, extra personnel for inter-rater reliability was not practical. Therefore, the reliability of this study is open to question, and the results should be considered tentative.

## **Results**

### **Original Harlequin Romance Novels**

Of the ten original Harlequin Romance novels analyzed, only two contained minority characters. These novels ranged from the years 1979 to 2007, with two novels being published in the years 1979, 1986, 1993, 2000, and 2007. The total number of named characters that appeared within the novels ranged from 11 to 39, with an average of 27.1 named characters each. However, several problems appeared while counting named characters within the books. Generally speaking, having a name means that the characters have some importance and familiarity with the narrator. The levels of familiarity for each character were not recorded during the data gathering stage. However, often times there were many important characters who did not have names, but instead had titles. In *The Sheikh’s Contract Bride*, for example, the male protagonist’s parents were always referred to as the King and Queen, and not by their given names even in intimate conversations. Likewise, in *Autumn in April* (Summers 1986), the main character always refers to her father as “Dad,” and he is never introduced with his given name. Therefore, it is felicitous to assume that the averages and percentages based on the number of named characters accurately represent the averages and percentages of important characters within a novel.

Only two of the ten novels randomly selected contained minority characters: *Heart of the Whirlwind*, by Dorothy Cork, and *Promoted: Nanny to Wife*, by Margaret Way. Both of these novels were set in the Australian Outback, with a foreign- or city-born female protagonist and a local, rural male protagonist. *Heart of the Whirlwind* was originally published by Mills and Boons in 1974, and was subsequently republished by Harlequin in 1979. This novel featured the wild, adventurous Rennie Baxer who takes a job cooking in the Outback for Dev Deveraux and his ranch hands. Three named minority characters

appeared within this text, accounting for 10.34% of the total named cast. All three were female Australian Aborigines who cooked and cleaned around the homestead. The first introduced, “Old Ettie,” is described as a “large cheerful-looking” woman who has been cooking for the homestead since her teenage years (Cork 1979, 61). However, her food is also called “indescribable” (66), in a very negative tone, “good but unimaginable” and “adequate” (68). The main female protagonist is easily able to outdo Ettie, and earn the long-standing appreciation of Dev and his ranch hands. Ettie has a very formal relationship with both the main male and main female character. Formal relationships are defined as relationships that are not voluntary. The other two named minority characters were “two young aboriginals who did the housework” (76) named Iris and Cilly. They are described as rather lazy, and the main female protagonist must continuously check up on them to get work done. These two girls have a formal relationship with the main female character, as Rennie is their direct supervisor, and have no known interaction with the main male character, despite him being their employer.

*Promoted: Nanny to Wife*, published in 2007, tells the story of Marissa Devlin, who suddenly becomes the guardian of her much younger half brother, Riley, and subsequently takes a job as a governess for the cattle baron Holt McMaster. This book has one named minority character said “to have Polynesian blood” (Way 2007, 14), who accounts for 2.85% of the total cast. Although this minority character, Keile, never appears within the book, she is rather important in the way her actions impact others. Keile is Riley’s mother, and she abandoned both him and his father when Riley was four. Riley ends up with Marissa after their father dies, which prompts her to find a job to support them both. Keile was described as negligent (16), abusive (27), and a “poisonous little bitch” (27). I discounted her son, Riley, as a minority character even though he is supposed to have Polynesian blood on the basis of both his physical appearance and upbringing. Riley is described as having “blue-black hair, vivid blue eyes, and skin like porcelain” (13). Furthermore, he was not raised by his mother and is not an active member of the Polynesian culture. He is, in fact, not even aware that his mother was a member of any minority group.

Both of these novels also included several minority characters who were not given names. In *Heart of the Whirlwind*, two more female Australian Aborigines helped with the cleaning and laundering. Like Isis and Cilly, these two characters only have formal and highly structured interactions with the main female character and have no interactions at all with the main male character. In *Promoted: Nanny to Wife*, Australian Aboriginal girls were also part of the household staff, especially working in the kitchen. In this book, however, they are under the supervision of a minor character, and have no interaction with either the main male or main female character. In fact, Ettie is the only minority character to have any type of interaction with the main male character of either novel.

Only two of the ten original Harlequin novels had any minority characters, and the few that appeared tended to have limited and formal interactions with leading figures. Not surprisingly, the original Harlequin novels showed a highly traditional and stereotypical presentation of minority characters. Furthermore, all of the minority characters that did appear

either were portrayed in a highly negative manner or existed solely to serve the needs of white characters.

### **2007 Romance Novels from Differing Lines**

Overall, the 2007 romance novels have a larger number and greater variety of minority characters represented than in the original Harlequin line. Of the ten books in the study, eight had at least one minority character. Two 2007 novels were chosen from five different lines: the original Harlequin Romance, Harlequin Intrigue, Harlequin Presents, Harlequin Blaze, and Steeple Hill Love Inspired. The two original Harlequin Romance novels were the same ones used in the study of romance novels over time. The total number of named characters in these novels ranged from 11 to 40, with a mean of 21.3 and a median of 16. The number of named minority characters that appeared ranged from 0 to 3, with a mean of 1.4 and a median of 2. The percentages of minority to white characters, therefore, ranged from 0 to 13.33% of the total cast, with a mean of 7.13% and a median of 7.00%.

On average, the original Harlequin Romance novels and the Harlequin Presents, both representing traditional Harlequin lines, had fewer minority characters than those representing the modern lines and the inspirational line. Furthermore, of the four Harlequin Romance and Presents books, none took place within the United States, while all six of the other novels did. Of those books that took place within the United States, the number of minority characters ranged from 0 to 3. Furthermore, the percentage of minority characters to all characters averaged 9.03%, compared with 4.28% total cast for books taking place outside of the United States. According to the U.S. Census Bureau Population Profile as of 2005, non-white minorities account for almost one third of all people within the United States. Although the 2007 novels that took place within the United States fall far short of this goal, it is a significant increase from the original Harlequin novels.

Overall, 14 minority characters were found within the various 2007 lines. Harlequin Blaze and Harlequin Intrigue had the most per line, with four minority characters each, and Harlequin Romance had the least, containing only one. However, the Steeple Hill Love Inspired novel had the most minority characters within a single novel, numbering 3. Of the 14 minority characters, the largest race or ethnicity was Latino, with 6 characters, accounting for 42.86% of the total. The next greatest ethnic groups were the Indo-Pakistani and Chinese, with 2 characters each, separately accounting for 14.29% of the total. Lastly, there was 1 Polynesian, Arab, Greek, and Native American character, each accounting for 7.14% of the total minority characters. The Latino characters were probably the most surprising of all the minority characters; two thirds of them were major supporting characters, and 1 was even a main character.

The gender split of the minority characters was rather distinctive, with over three quarters of them male. This is a significant difference from the original Harlequins over time, seeing as all of those minority characters were female. Furthermore, there were far more differences from the original line in what roles were performed by the characters. Minority characters were three times more likely to be a minor supporting character than a server, a vast difference from the original Harlequin novels. Also, characters were almost as likely to be a major supporting



character as a minor supporting character, with six people to five. Furthermore, the type of interactions with main characters differed greatly depending on their gender. When interacting with males, female minority characters were restricted to either no interaction or formal interaction, most often as worker to boss. However, when these characters interacted with the main female character, they were evenly split between all three levels of interaction—informal, formal, and none. Male minority characters also had large differences in how they interacted with main characters. When interacting with the main male character, 60% of all the interactions were formal, twice the level of formal interaction than with the main female character. Furthermore, male minority characters were over three times more likely to interact informally with the female protagonist as opposed to the male protagonist.

Although this seems to suggest that the female protagonist was far more approachable and friendly than the male protagonist, the point of view of the books must be taken into account. All Harlequin books contained points of view from the female protagonist, whereas many of the books excluded the male point of view. This may have led to biasing of types of interaction, as the reader only sees many of the male interactions through the eyes of the female protagonist. However, there was another difficulty in accounting for levels of interaction between minority characters and the protagonists. In four of the cases, there were multiple levels of interaction, both formal and informal. This occurred when the minority and main characters were placed together in a working environment and eventually became friends. In three of the cases, this occurred with the main female character, and in only one case did this occur with the main male character. In all of these multivariant cases, the minority character was male.

Given the very small sample size of this study, most results are not generalizable to the larger population of novels, even though they were randomly selected. There were two exceptions to this; character roles and the type of interaction with male (prob=.030) and female (prob=.000) lead characters. Generally speaking, the more important a character's role was, the greater level of interaction she or he had with both the male and female protagonists. This correlation was much stronger for interaction with the female protagonists; servers were equally split between none and formal interaction, minor supporting characters had all three levels of interaction with the majority being no interaction, major supporting characters had more informal interaction than formal interaction, and main characters only had informal interaction. By knowing a character's role, readers can increase their ability to accurately predict the type of interaction with the female lead by 78.7% (gamma=.787). The correlation was weaker for interactions with male main characters; readers have the ability to accurately predict the type of interaction by 64.4% (gamma=.644). Servers were evenly split between no interaction and formal interaction, while minor supporting characters had all three levels of interaction with the half at the lowest level, and major supporting characters were restricted entirely to formal interactions.

Within all of the books, only one minority character's status was used as a plot point. This was Leo Savakis, the Greek character from within the Harlequin Presents line. The only description of him given was that he is a "strict Greek" (Reid, 2007, 53), which starts a comedy of errors turning into the plot of *The Italian's Future Bride*. Savakis believes that his

wife, Elise Castle, is cheating on him with the main male protagonist. Therefore, Castle talks her stepsister, the main female protagonist, into creating some sensational tabloid pictures with the main male protagonist to clear Castle's name. Savakis, therefore, provides the plot of the story, based on his ethnicity, while not actually appearing within the story itself.

Overall, the 2007 novels were more successful at portraying minority characters in a wide variety of manners compared with the original Harlequins over time. Of the 14 total minority characters, 2 were displayed in a highly negative manner, 3 were displayed in a slightly negative manner, 2 were displayed neutrally, and 7 were displayed in a positive manner. Of the highly negative portrayals, Keile from the 2007 original Harlequin Romance has already been discussed. The other character, Mickey Sandoval, is a cop for the Kansas City Police Department who is charged with guarding the female protagonist's life. He is described as being funny (Miller 2007, 151), polite (151), eager to please (159), as well as incompetent (150), materialistically motivated (97), and not highly dedicated to his job (97). By the end of the novel, the protagonists discover that Mickey actively fed information to the crime-lord villain (243).

An example of a character described in a slightly negative manner, but who was not actively negative within the novel was Diego Martinez, father to protagonist Jessie Martinez, both being cops. Although Diego does not actually appear within the novel, he is constantly described. As a cop, Diego was described as "hav[ing] a reputation for breaking his cases using any method at his disposal, especially romancing the ladies" (Weber 2007, 88–89) and not "hav[ing] the knack for tying up loose ends. Or [the] care to make sure the bystanders and victims in [the] case were taken care of" (222–223). On a more personal level, he was highly judgmental toward his son, and seemed to disapprove of him (62). The picture that Diego Martinez paints is highly contrasted with his son, Jessie. According to the female protagonist of *Double Dare*, Jessie is "a good boy" (97) who "radiated pure honesty" (98) and was an "intriguing mix of sweet and sexy, shy and sensual" (81). Even his coworkers said that "[his] word was gold" (130). Even though Jessie did "romance the lady" while on a case, the personal motivations differed wildly enough for Jessie to be considered good, while Diego is presented in a more negative manner. By the end of the novel, Jessie is even complimented by his boss for being a better cop than his father.

Several neutral characters were presented within these novels, mostly due to lack of information. Not surprisingly, many of these characters were coded as "servers," as most only appeared once within the novel. Mohan Patel from *A Father's Sacrifice* is one of three neurosurgeons described as having enough skill to save the male protagonist's son. Longwei, a character from *The Perfect Blend*, owns a traditional Chinese tea store in Seattle and serves his customers, including the protagonists, with dignity and aplomb. However, there is no personal information about these characters given, which leaves a feeling of neutrality with the reader.

Unlike neutral characters, multiple levels of roles were depicted in a positive manner, such as the Latino protagonist Jessie Martinez mentioned earlier. A major supporting character, Native American Ray Storm, worked as a partner with the female protagonist of *A Father's Sacrifice*. He was described as highly persistent (Kane 2007, 28–29) and dependable (49), and is "like the big brother [she] never had" (238). A minor supporting character, the

Chinese-born Nancy Chang, “turn[s] into a dragon” (Pleiter 2007, 58) to protect the female protagonist of *The Perfect Blend* from any harm. Furthermore, Chang is described in her own right as an “artist making beauty” (104).

## Conclusion

Overall, the portrayal of minority characters in original Harlequin Romance novels leaves much to be desired. All minority characters were conspicuously absent within any novels that took place in the United States, New Zealand, or England, all countries with significant minority populations. The minorities who did appear in the novels were either negatively portrayed or existed solely to serve the needs of the main, white, characters. The minority characters were either lazy or incompetent, and worked best under the direct supervision of others. The only time that these characters acted independently, they were portrayed in a very negative manner—such as Keile abandoning her husband and child. In *Heart of the Whirlwind*, the five minority characters appeared on about four pages of the novel, or less than 2.10% of the entire novel. In *Promoted: Nanny to Wife*, Keile is mentioned on four or five pages of the novel, appearing in slightly more than 2% of the total page count.

The minority characters appearing within the different genres of 2007 Harlequin novels had a much stronger presence than in the traditional romances. More minority characters appeared in a variety of roles. Unlike the finding of “Prime Time in Black and White,” in this study Latinos were an overrepresentation within the minorities present, and African Americans were completely absent. Of course, the numbers of minority characters still fell far short of the overall population’s race and ethnic breakdown. The 2007 novels’ minority characters also had larger range of interactions with the main protagonists. In fact, one of the only factors in which minority characters were not similar to white characters was on gender distribution. Over 75% of the minority characters were male. Taylor (2007) describes this trend as a “general pattern in white category romance novels, where the ‘foreign’ element is almost always male. That is, if there is a nonwesterner, or a non-Anglo-Saxon among the central characters, he will tend to be the hero and not the heroine. Thus it is the male who is marked racially and/or ethnically . . .” (1042). This trend seems to continue, even for characters who are potential heroes of the novel. Even with these gender stereotypes, the 2007 novels, especially the nontraditional lines, showed a marked improvement in presenting minorities within the novels. However, it must be remembered that this improvement is in the raw number, roles, and interactional levels of minority characters—not in decreasing racial or ethnic stereotypes.

There are many ways in which this research could have been improved, and may be improved upon in further research projects. First and foremost, this research should be redone using inter-rater reliability. To do so would increase the validity of the research and make it more applicable and generalizable. The research would also be improved with a greater number of books within the study; each study only had ten books, resulting in a weak quantitative analysis. A further weakness of this study is shared with all content analyses of popular culture; that is, the assumption that the object of study has actually been read

and absorbed into the community. This analysis used random sampling, so no concrete information about how many copies of these books have been sold or, about how many people read them is available.

Further research can also be done on various lines over time, not just the traditional Harlequin Romance novels. A comparison between more lines would also be a good analysis, especially using the Kimani Press imprints, books aimed at African Americans, and the four lines written in Spanish to appeal to Latina readers. Comparisons can be made within these lines, as well as between these lines and traditionally white-dominated lines. Researchers may discover significant differences in portrayal of the minority and white main characters are portrayed, and if one group is more, less, or equally stereotyped compared with another group. Research could also be progressed to see if any significant differences in minority representation between serial romance novels and individual romance novels occur. A limited amount of research has been accomplished on issues regarding race and romance literature, and therefore the field is wide open for almost every type of qualitative and quantitative analysis imaginable.

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## Appendix A—List of Books in the Study

- 1979 Harlequin Romance ( $n_1=80$ )  
*Heart of the Whirlwind* by Dorothy Cork  
*The Sleeping Fire* by Daphne Clair
- 1986 Harlequin Romance ( $n_2=72$ )  
*Vows of the Heart* by Susan Fox  
*Autumn in April* by Essie Summers

- 1993 Harlequin Romance (n<sub>3</sub>=54)  
*Hero on the Loose* by Rebecca Winters  
*Reluctant Lover* by Katherine Arthur
- 2000 Harlequin Romance (n<sub>4</sub>=52)  
*Coming Home to Wed* by Renne Roszel  
*The Boss's Bride* by Emma Richmond
- 2007 Harlequin Romance (n<sub>5</sub>=74)  
*The Sheikh's Contract Bride* by Teresa Southwick  
*Promoted: Nanny to Wife* by Margaret Way
- 2007 Harlequin Presents (n<sub>6</sub>=96)  
*The Italian's Future Bride* by Michelle Reid  
*Italian Boss, Housekeeper Bride* by Sharon Kendrick
- 2007 Harlequin Blaze (n<sub>7</sub>=72)  
*Double Dare* by Tawny Weber  
*Stripped* by Julie Elizabeth Leto
- 2007 Harlequin Intrigue (n<sub>8</sub>=72)  
*Nine-Month Protector* by Julie Miller  
*A Father's Sacrifice* by Mallory Kane
- 2007 Steeple Hill Love Inspired (n<sub>9</sub>=48)  
*A McKaslin Homecoming* by Jillian Hart  
*The Perfect Blend* by Allie Pleiter

## Appendix B—Coding Outline

### Part 1: [completed for all books]

Title:

Author:

Year of Publication:

Series Line:

Setting:

Number of Pages:

Total Number of Named Characters: [counted total]

Total Number of Named Minority Characters: [counted named and unnamed characters]

Number of Named Minority Characters: [counted total]

### Part 2: [completed for every minority character]

Name:

Race/ethnicity:

Gender:

Physical Description: [quoted directly from the text]

Psychological Traits: [quoted directly from the text]

Role: [coded as one of four: Main Character, Major Supporting Character, Minor Supporting Character, and Server. Provided supporting evidence from within the text to support my claim.]

Interactions with main female character: [coded as one of three: Informal, Formal, and None. Characters could be double coded as both informal and formal. Provided supporting evidence from within the text to support my claim.]

Interactions with main male character: [coded as one of three: Informal, Formal, and None. Characters could be double coded as both informal and formal. Provided supporting evidence from within the text to support my claim.]

# ***Introduction to Neural Stem Cells: A Brief Look at History, Current Methodology, and Recent Advances***

**Andrew Keaster and Dr. Richard C. Garrad**

## **Abstract**

By examining stem cell history and analyzing the past few years of both embryonic and neural stem cell research, an understanding of both the progress and delays regarding stem cell-based therapies can be ascertained. Stem cells are those capable of infinitely reproducing and forming any of the body's cell types and hold therapeutic potential. They are grown in culture and require specific signal molecules to either maintain their attributes or differentiate into progenitor cells. Ongoing research of neural stem cells (NSCs) provides a framework for working with these cells and elucidates comparisons and contrasts with their embryonic counterparts. Insights into cell biology are important for discovering how regulatory pathways are integrated in the development and expansion of stem cells. Recent advances in methodology hold potential to help researchers make the connection between scientific knowledge and medicinal application. However, many barriers still exist before NSC-derived therapies become widely developed and available.

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## **Introduction to Stem Cells**

Few topics so easily succeed in evoking such a diverse discourse, but understanding stem cell research proves to be a mystery to all but the few who have spent years unlocking the secrets of cell biology. For most of society, many questions arise about the very nature of stem cells, their purpose, the progress made in research with them thus far, and the possibility to discover and harvest the very foundations of life. Of particular interest in much current research is the neural stem cell, that which will develop into one of the many types of neurons and glial cells. By examining stem cell history and analyzing the past few years of both embryonic and neural stem cell research, an understanding of both the progress and delays regarding stem cell-based therapies can be ascertained.

With the derivation of the world's first human embryonic stem cells (Thomson et al., 1998), numerous researchers worldwide have dedicated their labs to studying these potential panaceas. Why exactly is there such excitement regarding stem cells? To answer this question, one must first be familiar with a few basic insights into cell biology.

The human body begins its development once an egg and sperm unite. The newly formed diploid cell undergoes rapid cell division, eventually reaching a point where it



embeds in the uterus to become an embryo. The developmental stage during which this implantation occurs is known as the blastocyst. With approximately 200 cells, the blastocyst ultimately results in the completed human body, which is comprised of trillions of cells and over 200 distinct cell types (Freitas, 1999). In order for the blastocyst's early embryonic cells to yield the immensely diverse cell population and distribution of the body, they must possess some characteristic, whether it be intrinsic or extrinsic, that allows them to coordinate this extremely intricate development.

Embryonic stem cells (ESCs), those cells with an unlimited growth potential and the ability to differentiate into many cell types, are found within the inner cell mass (ICM) of the blastocyst (Stem Cell Basics, 2008). Theoretically, by culturing populations of these cells under certain conditions, researchers could produce an unlimited supply of specific cell types and tissues.

Stem cells display a few notable, unique characteristics, including the expression of telomerase. Telomerase is an enzyme that adds short repeats of DNA to each telomere—which are naturally shortened in each division—thereby eliminating the negative effects of consistent replication (Thomson et al., 1998). Somatic cells normally undergo approximately 50 to 70 divisions before telomere shortening proves an overwhelming obstacle to continued cell duplication; this is known as the Hayflick limit (Hayflick, 1965). However, stem cells bypass this limit by actively manufacturing telomerase and are thus shielded from mortality. In addition to high levels of telomerase, the expression of certain membrane surface markers is also unique among stem cells. Stage specific embryonic antigens three and four (SSEA3 and SSEA4) and a few other markers, namely proteoglycans Tra-1-60 and Tra-1-81, are always found on ESC membranes. As such, immunostaining for one or more of these extracellular molecules is often used for identification (Dimos et al., 2008). Another characteristic is the ability to induce teratoma formation. Because stem cells are able to form cells from all three embryonic germ layers, they grow uncontrollably and create a tumor of multiple cell types called a teratoma when transplanted into severe combined immunodeficient mice (Thomson et al., 1998).

An ESC may divide in two ways: the first, known as symmetric cell division, results in the production of two identical daughter cells possessing the same differential and divisional capabilities as the parent, whereas asymmetric division produces one daughter cell that is identical to the parent stem cell and a second daughter cell that is on a pathway toward becoming a fully differentiated cell. In this way, the stem cell is regenerated at the same time a new functional cell type is created (Beckman et al., 2007).

To that effect, stem cells are given a classification based on their capability to produce various tissues. *Totipotent* stem cells are those that can produce every single known cell in the developing embryo, and they are found only in the first few days after fertilization while the zygote makes its initial divisions. Following seven or eight divisions, the cells begin to specialize into those tissues seen in a blastocyst. The blastocyst, discussed earlier, is a hollow ball of cells comprised of both trophoblasts, which form the outer sphere and give rise to the chorion and placenta, and the ICM, which becomes developing embryonic tissues. It should be noted that the cells of the ICM are not totipotent and cannot form extra-embryonic cells, such as those of the placenta. However, they do have the capability to differenti-

ate into all cells formed from the three germ layers and are accordingly labeled *pluripotent*. In principle, pluripotent stem cells could be stimulated to differentiate into cells comprising the nervous system and epithelia, muscles and connective tissues, and the digestive tract and associated organs. The cancerous teratoma mentioned earlier arises from pluripotent cells. On the way to becoming specific, functional cell types, the pluripotent stem cells differentiate further into *multipotent* cells and relocate themselves to the tissues they produce. Division after this stage is asymmetrical to produce fully differentiated cells. The adult human body contains multipotent cells in a variety of tissues (so called adult stem cells), including the brain, spinal cord, liver, pancreas, skin, bone marrow, blood and blood vessels, cornea, retina, and skeletal muscle (Stem Cell Basics, 2008). A classic example of multipotency is the hematopoietic stem cell (HSC), which gives rise to all erythrocytes, leukocytes, and thrombocytes.

Currently, the only stem cell-based therapy comes from HSCs. They are transplanted into patients to treat blood cancers such as leukemia and lymphoma, a weakened immune system following chemotherapy, and inherited blood disorders like sickle cell anemia and severe combined immunodeficiency. Current research also examines the use of HSCs in alleviating autoimmune diseases. To obtain HSCs for transplant, doctors can use several sources, including bone marrow, peripheral blood, and umbilical cord blood. The most common of these sources is peripheral blood following injection of cytokine granulocyte colony-stimulating factor to the donor to promote exodus of HSCs from marrow to blood. Umbilical cord blood yields enough HSCs only for children (Hematopoietic Stem Cells, 2006). In order to selectively seize HSCs from samples, doctors stain for CD34 and Thy1 surface proteins and can isolate individual cells through flow cytometry (Weissman and Shizuru, 2008). ESCs harbor potential to be manipulated into HSCs, and this would expand the use of these treatments. The reverse of this is true, also. HSCs, like other multipotent stem cells, exhibit a trait known as plasticity. *Plasticity* refers to the ability of progenitor cells like HSCs to revert to a previous cell type, a characteristic that, if better understood and harnessed, could increase the already outstanding potential such cells exhibit.

Research for other practical stem cell uses is underway. Researchers anticipate that ESCs can be used for in vitro drug testing on human cells, as well as for remediating certain diseases by directing differentiation into specific cells like pancreatic beta cells (implications in diabetes), epidermal cells in skin (burn victims), and neurons (neurodegenerative diseases, spinal cord injury). Eventually, many hope that organs can be constructed for patients, bypassing the need to wait for organ transplants and continually take immunosuppressant medication. Before such therapies can be developed, however, scientists must learn much more about stem cells.

## **Common Materials and Methods**

As is the case for all in vitro cultures, a specific environment is needed for ESCs to develop and proliferate. Depending on the medium used, ESCs maintain their pluripotent state or differentiate. Much of developmental biology has focused on this crucial question: at what

point do various signal molecules play roles in the stimulated production of more-specialized progenitor cells? If the microenvironment, or cellular niche, can be reproduced *in vitro*, then scientists will be able to specify the creation of highly demanded tissues. The thought is that by manufacturing an unlimited supply of selected cell types via directed differentiation, diseases marked by the death of certain groups of cells can be effectively treated through transplantation.

James Thomson in his famous 1998 report details the conditions used for maintaining undifferentiated stem cells. The “culture medium consisted of 80% Dulbecco’s modified Eagle’s medium (no pyruvate, high glucose formulation; Gibco-BRL) supplemented with 20% fetal bovine serum (Hyclone), 1 mM glutamine, 0.1 mM Beta-mercaptoethanol (Sigma), and 1% nonessential amino acid stock (Gibco-BRL)” (Thomson et al., 1998). Basic fibroblast growth factor (bFGF) is now also a common additive in cell cultures (Skottman and Hovatta, 2006). Additionally, a feeder layer of gamma-irradiated, non-proliferative mouse fibroblasts was at the time necessary to line the flask. The fibroblasts served to release various growth factors into the surrounding medium and act as an anchor for the stem cells, without which, ESCs quickly differentiated into multiple cell types. Differentiation also occurs when 100% confluence is reached, even in the presence of a feeder layer. In mouse ESCs, the addition of leukocyte inhibitory factor (LIF) is sufficient to inhibit differentiation, but no such analog has been discovered for human ESCs (Skottman and Hovatta, 2006).

Recent studies have focused on understanding and improving both aspects of the microenvironment (feeder layer and medium). One reason the microenvironment must be improved is due to the potential threat of spreading mouse diseases into human cells; thus researchers have determined a way to replace the reliance on rodent feeder layers with a combination of bFGF, LIF, and a matrix of human fibronectin. This points to fibronectin having a role in maintaining the regenerative qualities of stem cells (Amit et al., 2004). Other replacements for the feeder layer include a matrix of human collagen, fibronectin, laminin, and vitronectin on matrigel (Ludwig et al., 2006). Alternatively, scientists can use fibroblasts from human foreskin, placenta, and endometrium, as well as others (Skottman and Hovatta, 2006). Presently, feeder-free cultures tend to yield a high degree of cellular anomalies and hence more research is needed before dependably healthy cells can be grown in animal-free cultures (Draper et al., 2004; Imreh et al., 2006).

Replacing fetal bovine serum in the medium has also been an important step and is now substituted with bFGF and serum replacement (SR). However, SR actually does have animal proteins and thus it too cannot fully satisfy the desire for a completely animal-free medium, although some studies have shown the possibility of using highly specific, non-animal proteins to some degree of success (Skottman and Hovatta, 2006).

Growth factors (GFs) play an immensely important role in stem cell research. They prevent apoptosis and are used to direct the differentiation of both embryonic and adult stem cells. When relative quantities of various GFs are added, cells respond accordingly and begin to specialize. Usually, these chemicals are not administered directly to the cells. First, the culture conditions are modified slightly and this causes cells to form aggregates

called embryoid bodies (EBs). Most growth factors are added to the cultures at this time. There are a few common trophic factors that are integral to cell expansion; they each slightly shift development toward a different alignment. Epithelial growth factor (EGF), bone morphogenetic protein (BMP), and retinoic acid alter development toward ectodermal cells, such as neurons and epithelia, and to a lesser extent, mesodermal cells. Activin-A and transforming growth factor beta-1 (TGF- $\beta$ 1) result in mesodermal cells, whereas nerve, hepatocyte, and vascular endothelial growth factors ( $\beta$ NGF, HGF, and VEGF) allow differentiation into multiple cell types, including endodermal cell types (Schuldiner et al., 2001).

### **Introduction to neural stem cells**

Much of aforementioned information about ESCs is highly relevant in the study of neurogenesis. Until recently, it was thought that neurological tissue was not regenerative, and only in 1998 was this predominant belief overturned (Eriksson et al., 1998). Based on this new evidence, the brain must contain neural stem cells (NSCs). These cells, classified as multipotent, can differentiate into both neurons and glial cells.

NSCs are approximately 10 to 20  $\mu$ m in diameter (Bez et al., 2003) and reside primarily in the hippocampus and the subventricular zone. It has been shown that these neural stem cells undergo three phases in vivo during embryonic development. The expansion phase exhibits symmetrical division, producing more NSCs. The neurogenic phase produces restricted neural progenitors (NRPs or neuroblasts), which give rise to neurons. The gliogenic phase yields astrocytes and oligodendrocytes by means of restricted gliogenic progenitors, abbreviated as GRPs. In each stage, the NSC has a slightly different response to various growth factors (Temple, 2001).

In order to study NSCs and their progeny, scientists often stain for specific extracellular markers. NSCs share quite a few of these with other multipotent stem cells, including the HSC's CD34 marker and several receptor tyrosine kinases found in endothelial stem cells (Eugenio et al., 2002). Upon differentiation, though, these shared antigens are lost. What sets all neural precursors apart from other cells, though, is the presence within the cell of nestin, an intermediate filament (Bez et al., 2003).

As NSCs differentiate, they begin to express other markers unique for their cell type. Neurons have several such distinct proteins. Tuj1 is found on cells immediately derived from neuroblasts and its presence indicates the onset of neuron formation. Later on, mature neurons express glutamate receptors, human neurogenic antigen, neuregulins, neural cellular adhesion molecule (GluR1/2/3 subunits, HNu, NRGs, and NCAM, respectively), NeuN, and Ca<sup>2+</sup>/calmodulin-dependent protein kinase II, yet other markers allow scientists to study the formation of possible synapses because MAP2ab is found only on dendrites and GAP-43 is located on axons. Currently, stimulating NSC-derived neurons to integrate within the existing neural network by creating multiple synapses has posed quite a challenge to scientists (Song et al., 2002a; Lowry and Temple, 2007). In the study of motor neuron development, which harbors several potential health-related benefits, the transcription factor ISL

indicates that neurons are differentiating into motor neurons. Mature motor neurons also express the transcription factor HB9. In the spinal cord, neural progenitors express the markers OLIG2 and PAX6 (Dimos et al., 2008). Glial cells throughout the body are also identifiable. Oligodendrocytes express RIP and GalC proteins, whereas GFAP is an astrocytic marker (Song et al., 2002b).

The aforementioned markers help identify cell types in a culture of neurological tissue, but in transplantation studies these markers alone cannot provide relevant information. For instance, it would be difficult when staining for MAP2ab and GAP-43 markers that appear on dendrites and axons, respectively, amongst a backdrop of other neurons in transplantation studies to determine which neurons are NSC-derived and if these newly formed neurons are establishing synapses. The ability to track implanted stem cells would therefore become useful. Since the start of the decade, there has been research in using metallic nanoparticles as a means to do so (Lewin et al., 2000). Also, bromodeoxyuridine (BrdU) labeling can pinpoint actively dividing cells, which in neurological tissue identifies the NSCs. All in all, the discoveries of NSC markers and identification methods have proved pivotal in such research, and further advancements in regard to tracking transplanted cells in living tissue will definitely enhance neural stem cell research.

Knowing the commonly used methods of identifying cell types provides clarity when examining scientific studies about neural stem cells. For example, some of the above markers were used in a 2004 study that looked at the cellular niche, or microenvironment, of NSCs *in vivo*. The research found through BrdU labeling that NSCs are concentrated near capillaries and there is considerable interplay between endothelial cells from the vasculature and NSCs, and the endothelial cells actually exert substantial control over NSC proliferation and differentiation (Shen et al., 2004). In a related study, it was determined that several endothelial cells in these brain regions did not arise from angiogenesis as previously thought, but rather through transformation of NSCs into such cells by existing endothelial cells. The apparent plasticity of NSCs, then, becomes an important finding because it could possibly alter the way scientists view the development of the vasculature within the brain (Wurmser et al., 2004). It has also been shown that astrocytes play an important regulatory role in stimulating NSCs to become neurons and also guiding synapse formation (Song et al., 2002b). Thus, it is evident that several external factors play roles in stem cell differentiation.

In order to study NSCs in a laboratory, scientists attempt to replicate such findings *in vitro*. Unfortunately, there is not a solitary path for directed differentiation of NSCs, and the cellular niche used in experiments often varies among research teams. But although a single route is not evident, there are several factors that exert specific influences on aspects of neural development.

All aspects of developmental biology are guided by the same regulatory pathways; NSCs are no different. As an example of this, monoamine oxidase inhibitors (MAOIs) increase the amount of serotonin and other neurotransmitters in the brain, but some MAOIs, such as moclobemide, also exert an effect on certain cellular pathways in NSCs. In this case, moclobemide helps prevent stem cell death by phosphorylating ERK 1/2, a protein

in the MAPK/ERK pathway, which increases the gene expression for Bcl-2. Upregulated Bcl-2 is important in preventing caspase activation and has an effect similar to trophic factors in that the apoptotic pathway is stalled. Thus, moclobemide (and other MAOIs, presumably) make cells more resilient. Additionally, it has been shown that the same pathway leads to the development of neuronal characteristics such as dendritic and axonic extensions, as well as serotonergic capability (Chiou et al., 2006). Data of this nature help scientists unlock the keys to maintaining and promulgating NSC expansion. They also demonstrate the incredibly specific signaling and regulatory mechanisms within the cell and the interrelatedness and synergy of cellular pathways.

Another discovery about NSCs has provided a basis for several other studies and is therefore important to note. Upon exposure to bFGF and EGF in vitro, NSCs will spontaneously form a spherical structure known as a neurosphere. Neurospheres are similar to the embryoid bodies formed by ESCs and appear to be in vitro adaptations of NSCs to better imitate a physiological environment suitable for growth. A neurosphere “may be considered a microsystem able to grow and survive until a threshold crucial point is reached . . . [and its] adaptability may enable the NSCs to better express the plasticity they need for in vivo engraftment and fate conversion” (Bez et al., 2003). Many studies use neurospheres as a means to generate nonspecific NSC-derived cell types. Unfortunately, it has recently been shown that their non-adherent, isolated properties make them not well suited to neuronal differentiation, meaning that the progenitor cells manufactured in these neurospheres lose some property that provides for a neuronal fate, thus ultimately limiting the usefulness of neurospheres (Yan et al., 2007).

Other factors can also exert some influence on NSCs. Astrocytes in the cellular niche promote proliferation of NSCs and their differentiation into neurons. Retinoic acid and  $\delta$ NGF also increase the likelihood of differentiation of ESCs into neurons (Schuldiner et al., 2001). Additionally, the presence of neurons promotes oligodendrocyte formation (Song et al., 2002b). Furthermore, NSCs in the central nervous system must upregulate production of Bmi1, a protein that represses the cyclin kinase inhibitor p16, to replicate. When sequestered by Bmi1, p16 cannot prevent cyclin from binding with its associate protein CDC2 to form the mitogenic MPF molecule. Once activated, MPF phosphorylates several regulatory proteins such as the retinoblastoma (Rb) protein. Once phosphorylated, Rb loses its control over the transcription factor E2F and the cell will begin DNA synthesis in preparation for division (Lodish et al., 2008). As evidenced by these facts, there is a considerable interplay of chemical and biological signals that even today is not fully understood. Accordingly, discoveries all across the spectrum of cell biology, whether in regard to specific NSCs or any cell in general, harbor the potential to yield beneficial findings when linked to existing data.

### **Advances in Research Techniques**

There have been many noteworthy recent developments in laboratory techniques that promise to swiftly evolve stem cell biology. One such development is an NSC quantification

method, a breakthrough that will certainly impact neurological stem cell research in various ways yet is unlikely to have as great an impact as other advances. More significantly, much effort has focused on relieving dependence on embryonic stem cells, and scientists have begun examining the possibility of placing a somatic nucleus into an enucleated ovum to generate stem cells, as well as reprogramming adult somatic cells to revert to a pluripotent state. The first procedure, known as somatic cell nuclear transfer (SCNT), could provide host-specific stem cells, negating the need for immunosuppression after transplantation. In the second situation, the induced pluripotent stem cells (iPSCs) could theoretically harbor the same properties as ESCs and prove of equal use in regard to potential medicinal application.

### **Neural Colony Forming Cell Assay for NSC Quantification**

Previously, the neurosphere assay was the predominant method for quantifying and expanding NSC cultures. However, a recent study shows a fundamental inaccuracy with this test by proving that neural stem cell estimation was greatly overinflated based on the assumption that all neurospheres arose from NSCs. The Canadian research team who authored this study showed such an assumption to be faulty and an accurate NSC number to be only about 5% of previously gathered data. After realizing the implications of relying on studies performed using such an inaccurate assay, they developed the Neural Colony Forming Cell Assay (N-CFCA) as a new method for expansion and quantification of NSCs *in vitro* and now promote its use (Louis et al., 2008).

To perform the N-CFCA, NSCs were diluted to approximately 500 cells/ $\mu$ L in medium and placed in a commercially available proliferative supplement along with hEGF and type 1 bovine collagen solution. When plated, this solution becomes a three-dimensional, collagen-based semisolid assay that forms the basis of the N-CFCA and isolates individual cells within its matrix. Rather than form neurospheres, the isolated cells formed colonies of all different sizes. Further tests on these colonies revealed unrestricted multilineage progeny, no inhibition to cellular proliferation, and that the size of the resulting colony actually distinguished between stem and progenitor cells (Louis et al., 2008).

The importance of this study is seen repeatedly. Firstly, there is now a more accurate quantification procedure for NSCs, which will give more clarity to future research experiments. As evidence of the power of the new method, the authors selected one of their own previous studies in which a neurosphere assay had been widely used. Although the study had originally shown an 80% purification of NSCs, reexamination with the N-CFCA provided only a 12% yield. The N-CFCA is also significant because it allows experiments to begin with several thousand cells rather than single-cell deposition, speeding research efforts for teams that once had to wait several days or even weeks before a single cell reached a suitable confluence for neurosphere cultures. Also, the three-dimensional collagen matrix in N-CFCA inhibits cellular migration, increasing the likelihood that colonies are clonal to nearly 95% compared with about 85% with the neurosphere assay. Most importantly, this assay can distinguish between NSCs and progenitor cells in quite an interesting way, allowing reexamination of previous research, which relied on the premise that neurospheres came from

NSCs. To demonstrate this, the Canadian team took another of their recently published experiments and repeated it using the N-CFCA rather than the neurosphere assay. Only months before, the conclusion showed EGF enhanced NSC proliferation, but reexamination disproved this finding, instead showing that EGF only enhances restricted progenitor cell growth (Louis et al., 2008). Thus, potential exists for this new laboratory method to revolutionize neurological studies involving stem cells due to N-CFCA's increased efficiency and, most of all, clarity of results. It remains to be seen just how widespread use of the N-CFCA will become.

### **Somatic Cell Nuclear Transfer (SCNT)**

For years, scientists have hoped that simply taking the nucleus from a somatic cell, inserting the nucleus into an ovum with no nucleus, and shocking (or stimulating in some way) the cell would, after several divisions, yield a blastocyst from which ESCs could be derived. SCNT research took a major step forward in 2004 when researchers claimed success, but these claims were false and evidence had been manipulated, temporarily halting dreams for SCNT. Recent reviews of this work, however, show that those researchers indeed succeeded at producing cells through parthenogenesis, the first of its kind (Kim et al., 2007). Other labs, still set on deriving ESCs from adult cells, kept working and achieved the long awaited breakthrough in 2008 (French et al., 2008).

SCNT has four steps. The first is removal of the nucleus from an ovum, creating a cell known as a cytoplast, using one of two methods: extrusion or aspiration. In both cases, the zona pellucida surrounding the oocyte is perforated using a sharp glass pipette. Extrusion involves forcing the nucleus out of the opening with pressure placed on the cell, and aspiration uses negative pressure to pull out the nucleus. The second step involves preparing the donor DNA and placing it under the zona pellucida in direct contact with the cytoplast. Following this, introduction of the DNA into the cytoplast is performed by the generation of two electrical shocks that causes the cells to fuse. Care has to be taken in order to avoid polar bodies that might be present in the cell. The final step is parthenogenic activation (PA). The cells are stimulated to begin division without fertilization by adding calcium ions and 6-dimethylaminopurine (a serine-threonine kinase inhibitor) in the presence of cytochalasin D, an inhibitor of actin polymerization (Lodish et al., 2008). Following a few hours incubation, the cells are washed and cultured (French et al., 2008).

The end result of the first successful SCNT experiment in 2008 was one singular genetically proven clone taken from an adult male's fibroblast. Of many blastocysts that formed, a select few had a clearly visible ICM, and out of these, only three yielded DNA evidence that was indicative of a triumphant transfer. In the end, just one of these was able to be fully matched to its original DNA donor and an ESC line was derived from it. Although inefficient, this sets the stage for expanding the possibilities of producing stem cells that are fully compatible with the recipient of eventual treatment. One of the biggest barriers to stem cell therapy is that the patient immune system mounts an attack against implanted stem cells just as it attempts to do in organ donation. SCNT will bypass this barrier by producing cells that have the same genetic material, and thus the same cell signals and markers, as the recipient.



For now, though, and probably for quite some time, no treatment options are available via SCNT (French et al., 2008).

### **Induced Pluripotency**

Researchers from Shinya Yamanaka's lab at Kyoto University discovered in late 2007 a way to convert adult skin cells back to their stem cell state. Research was done on cells taken from a 36-year-old woman's facial dermis (Takahashi et al., 2007).

Yamanaka's work a year earlier showed that mouse ESCs were indistinguishable from adult mouse tail-tip fibroblast iPSCs in "morphology, proliferation, gene expression, and teratoma formation" (Takahashi and Yamanaka, 2006). The adult mouse cells were converted to iPSCs by implanting a retrovirus containing genes for four proteins named Oct-3/4, Sox2, *c-Myc*, and Klf4. These same genes were used in the experiment a year later in order to convert the human dermal and synovial cells into iPSCs. Although the cells were induced to a stem cell-like state, it was still unclear how closely these mimicked stem cells, proving a need for further testing. A similar experiment was performed on primates but resulted in poor nuclear reprogramming of both adult and embryonic cells (Takahashi et al., 2007).

The exact mechanism by which Oct-3/4, Sox2, *c-Myc*, and Klf4 induce pluripotency still remains a mystery, but little is known about their biomolecular roles in converting cells back to an undifferentiated state. Sox2 and Oct-3/4 are transcription factors that synergistically bind to stem cell-producing genes along with suppressing genes associated with differentiation. Sox2 also combines with Nanog, another transcription factor, to enhance the establishment and maintenance of pluripotency of the cells in the same method, but Yamanaka's team showed that Nanog, previously believed to be integral in inducing pluripotency, was unnecessary. In adult skin cells, very small and sometimes no traces of these transcription factors are present (Takahashi et al., 2007).

When added to the adult cells, Sox2 and Oct-3/4 do not have an immediate effect due to the inhibitory mechanisms of DNA, such as DNA methylation and histone modifications. However, it is speculated that Klf4 and *c-Myc* induce the modification of chromatin. It is thought that these proteins act as allosteric effectors by which the Sox2 and Oct-3/4 proteins can attach to DNA, thus upregulating the inducible pluripotent capabilities of the cell. It is important to note that human therapies based off this approach are yet to come; currently, the viral vectors used to deliver the transcription factors could prove detrimental in humans (Takahashi et al., 2007).

Nonetheless, further progress has been made with regard to iPSCs. Harvard researchers answered important questions about their nature and succeeded in transforming the iPSCs into neurons. An 82-year-old sufferer of amyotrophic lateral sclerosis (ALS) provided fibroblasts for study and experimentation, and scientists found that Yamanaka's methods work well for inducing pluripotency in elderly patients' cells, just as they do for younger ones. Because the skin cells contain the same genetic information that causes neural degeneration, scientists successfully coaxed the new iPSCs into motor neurons and watched the neurons develop pathologies associated with ALS. This presents an opportunity to study

ALS affected neurons *in vitro*, hopefully leading to a superior understanding of the disease's progression. Previously, such ALS-affected motor neurons could not be studied because of their integral functioning in the body (Dimos et al., 2008).

Reprogramming of cells took a dramatic leap forward only a month later, thanks again to discoveries at Harvard. This time, though, the stem cell stage was bypassed completely. The previous method, as illustrated earlier by Dimos, had two major steps: inducing pluripotency and directing differentiation. The new method, however, transformed murine pancreatic exocrine cells into insulin-producing beta cells in one step by adding a mere three transcription factors: Ngn3, Pdx1, and Mafa. Prospects from this new method are optimistic because of the fact that this was done *in vivo*, actually inside living mice, and showed sustained results three months after the injection, bringing this science even closer to making medicinal application a reality (Zhou et al., 2008).

## **Implications**

Unfortunately, most of the research regarding NSCs is still very much in the fact-finding stages with most studies being performed in animals such as rats, guinea pigs, and primates. Even though studies might show breakthroughs in other mammalian species, there is definitely a "progressive loss in regenerative potential with . . . evolution" (Lamba et al., 2008), meaning what works in mice might not necessarily reproduce the same effect/finding in humans. There have been very few clinical trials in humans (none in the United States) due to the dangerous nature of introducing laboratory-derived cells into the sensitive human brain, spinal cord, and eye.

### **Spinal Cord**

As of 2007, there had been nearly 30 studies (in rats) focusing on the use of NSCs in spinal cord injury (SCI). Studies show SCI results in the loss of both neurons and oligodendrocytes, which transmit signals and myelinate neurons, respectively. Another effect is the formation of scar tissue that impedes previously undamaged nervous tissue and potentially alters the microenvironment unfavorably for the differentiation of ESCs and NSCs into neurons (Lowry and Temple, 2007). As always, the microenvironment plays an immense role when dealing with stem cells. With this in mind, it should be noted that very few of the NSC–SCI studies thus far have used stem cells taken from spinal cord tissue rather than brain tissue. The few results using spinal cord tissue have shown more consistent and promising results and therefore should carry more weight when examining and analyzing various research.

On January 23, 2009, the United States authorized its first human trial using ESCs. It just so happens that this trial will involve spinal cord injury patients, which shows the importance of NSC research. The biggest obstacle to potential stem cell-based therapies, after inducing neuronal differentiation, is successful integration of the new neurons with preexisting ones. After climbing that mountain, researchers must then discover how to coax

the neurons into establishing neuromuscular connections. As can be seen, there are still several key pieces of information left to discover before human therapies will become available.

## Eye

In animal eye models, there have been varying degrees of success in the therapeutic transplantation of stem cells and stem cell-derived cell lines. Thus, the eye holds potential to be one of the first successful targets of stem cell-based therapy. Studies have long focused on discerning how the eye develops and evaluating cell replacement after transplantation.

For several years, Royal College of Surgeon (RCS) rats have been an exemplary specimen to study retinal degeneration. Following transplantation, multiple brain-derived NSCs have shown extensive proliferation, mostly glial differentiation, and widespread integration, in addition to prolonged survival in young rats where the target disease has not yet run its course. No effect was observed in older rats already severely affected. These indicate two important roadblocks for researchers. First, they must discover a way to encourage the stem cells to differentiate into retinal photoreceptors and, second, unlock the potential for repairing damage in later stages of diseases such as macular degeneration and retinitis pigmentosa (Wojciechowski et al., 2002).

Müller glial cells normally provide structural and metabolic support for neurons and endothelial cells, but have recently been shown to aid or facilitate retinal regeneration by controlling the cellular niche for mitotically active progenitor cells. To this end, one study examined cell lines derived from Müller glial cells in the human eye (Lawrence et al., 2007). Perhaps the most important observation is that the human Müller glial cells were immortalized, and have since assumed properties closely resembling NSCs in that they express several of the characteristic NSC markers and, upon exposure to bFGF and RA, differentiate into neuronal progenitors. They are also easily directed into retinal precursors, which is evidenced by their expression of protein markers PKC (bipolar cells), peripherin (photoreceptor cells), and HuD, Brn3, neurofilament protein, and calretinin (ganglion cells). This means that once barriers to the actual delivery and in vivo control of regeneration are crossed, these Müller glial cells could provide the cells needed for transplants (Lawrence et al., 2007).

## Conclusion

To the end of providing an eternal stream of medical benefits and cellular remedies, NSCs are not quite ready to make their debut. Their potential, however, still exists, and scientists are as hopeful as ever that, with each new piece of information added to the ever-growing database, a time will arrive when research is ready to move away from rats and primates and largely into humans in order to begin developing actual treatments. Consistently, scientific publications within this realm of science conclude with a projection of how each finding will impact a particular disease, disorder, or drug. Although projections vary, it is agreed that NSCs will play an important role as modern medicine maintains an approach that focuses

evermore on the functioning of the basic unit of life—the cell. The age of stem cell research is still in its infancy, but with recent clinical trials and the widespread public interest on the topic, NSCs will undoubtedly remain an important field of biological research.

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# More Than Words: Shaping Lives Through Literature

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## Abstract

In the memoir *Reading Lolita in Tehran: A Memoir in Books* (2003), Azar Nafisi demonstrates how people read books to find the truths of reality. Early in the memoir, Nafisi warns us to, “not, under any circumstances, belittle a work of fiction by trying to turn it into a carbon copy of real life; what we search for in fiction is not so much reality but the epiphany of truth” (3). Nafisi understood this and assembled a secret group of young women whom she felt loved literature and could understand some of the deeper meanings of literature. Throughout *Reading Lolita in Tehran*, Nafisi’s characters show the readers that books are crucial as the young women learn to survive in their totalitarian government by escaping into the world of books, by learning more about themselves through relating with fictional characters and their authors, and by allowing the discussions during this class to shape their morals and perspectives so that they could become their own persons in a society that wants them to mindlessly follow the distorted laws of the government.

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*Reading Lolita in Tehran: A Memoir in Books*, by Azar Nafisi, is a powerful book that covers from the pre-revolutionary years the author spent in America before she returns to Iran in 1977 until the June 1997 when she once again leaves her home country. This book is part biography and part book review as she explains the different parts of her life through the works that she reads during this period—be it with her students, by herself, or with her secret group of literature-loving young women. The book is divided into four sections: “*Lolita*,” “*Gatsby*,” “James,” and “Austen.”

In the first section, “*Lolita*,” Nafisi introduces us to the group of young women with whom she made a secret class free of censorship and interference to study the works of great Western novelists. She also introduces us to the society of Iran and the world of its citizens. Nafisi details the lives of these young women, of their troubles in the totalitarian society in which they live, of their accomplishments, and of their growth. The book *Lolita*, by Vladimir Nabokov, helps in the understanding of the relationship between the people and the government of Iran. Humbert Humbert has stripped Lolita of her past, of her future, and even of her name, very much in the same way that the corrupt heads of the government made brutal laws to mold the Iranians into a people of the leaders’ design.

“*Gatsby*” takes us back several years, to the time of pre-revolution Iran and to the years that Nafisi spent in America during this revolutionary era. Years of being away from her

home country and joining revolutionary clubs that she didn't really believe in instilled a longing in her to move back to Iran. To Nafisi, Tehran was *home*, but when she arrived back in the Tehran airport, she realizes that something was wrong; this is not the same place she had left all those years ago. In this section, Nafisi lays out the changes that occurred once she returns to her home country, most importantly of how rights were stripped one by one from the people. During this time, she teaches at the University of Tehran and she works hard to try to give her students the capacity to think for themselves even as the new regime was working hard to do the opposite. *The Great Gatsby* by F. Scott Fitzgerald becomes a controversial book during her time at the University of Tehran because many people believed that books such as this one were very "American" and that anything "American" was corrupt and disruptive to their culture. Nafisi spends a lot of time discussing in detail the difference between the true meanings of *The Great Gatsby* and the misconceptions that many Iranians have about it.

In "James," Nafisi gives an account of post-revolution Iran, and how the author Henry James provides a glimpse of a more complex character than people were accustomed to seeing. She is once again a teacher, and this time she is trying to educate the revolutionary youth, trying to fill their brains with logic and critical thinking instead of the mindlessness that the government encourages. She wants her students to understand that life is not all two dimensional, that people are much more than that. James as an author strikes a chord with his readers in Tehran because of his experiences in wars. Nafisi is able to empathize and learn from his books, as well as try to impart that knowledge to her students.

In her final portion of the memoir, "Austen," Nafisi returns to the students she invited into the private study and shows how they have matured and made difficult choices. Her young women developed not only as critics of literature, but also as people. However, their lives in Iran had also stunted some of the most important growth for these young women, their love for themselves and for others. She uses Jane Austen's novels, most notably *Pride and Prejudice*, to try to help these young women understand the complexities of love, passion, and human character. Nafisi also shows how she herself changed throughout this time and how she finally realizes her need to once again leave her home country because she could no longer tolerate the abuse of the government's power. "What I now realize is that, ironically, the more attached I became to my class and to my students, the more detached I became from Iran" (317). In Iran, she had created such a deep web of fiction for her life that she was beginning to lose touch of reality. She needed to escape into a place where that protective cocoon of fiction was no longer necessary, but only optional.

Books are a wonderful thing for many people in the world. Some people read to educate themselves, others read to exercise their minds, and some read books exclusively for enjoyment. However, only a few people read books to find the truths of reality in the terms of the author and his/her world, and to enjoy the book for all of its unique qualities. Early in the memoir, Nafisi warns us to, "not, under any circumstances, belittle a work of fiction by trying to turn it into a carbon copy of real life; what we search for in fiction is not so much reality but the epiphany of truth" (3). Nafisi understood this and assembled a secret group of young women whom she felt loved literature and could understand some of the deeper meanings of



literature. Choosing wisely, Nafisi decided that the theme of the class would be “the relation between fiction and reality” (6) and this group read both Persian classical literature as well as Western classics. For people who live in a free country, it is difficult to imagine that such a class could have cost any of the young women their lives.

In a country where clothing, literature, music, and even self-image was controlled, how is it that these individuals could find the strength to not only go against their government, but to also see past the shallow interpretations of these classics? How could they have seen this “epiphany of truth” whereas many young adults in democracies can barely get through the book? How can a Western reader even attempt to relate to these faithful students? The basest answer to these answers questions is so simple that it might even confuse some; it is through imagination. Throughout *Reading Lolita in Tehran*, Nafisi’s characters show the readers that books are crucial as the young women learn to survive in their totalitarian government by escaping into the worlds of books, by maturing in their understanding of themselves, and by learning from the various characters of different books to become their own person in a society that wants them to mindlessly follow the distorted laws of the government.

The Islamic Republic of Iran in Nafisi’s memoir is a very difficult place to live. There is a totalitarian government ruling the people with a distorted view of Islam, and this government torments its people, rejects foreigners, and denies its people the right to think on their own. There are so many rules governing so many different aspects of the people’s lives that to a certain degree, the government has confiscated people’s lives. Under this government, women can be sent to jail or executed for wearing make-up, laughing out loud in public, wearing colorful nail polish, or showing hair from under their head scarves. In some cases, a woman can be killed for such “crimes” as seducing a man by showing her feet. Although men are freer than women, they too are persecuted if they rebel against the misinterpretations of Islam and speak out against the government.

In the article “Crackdown in Iran Over Dress Codes,” Frances Harrison explains the newest crackdown on the dress code for both men and women. Iranian TV has reported that 86% of the people were in favor of this crackdown, but Harrison is surprised by this considering the feelings against this movement she has witnessed (Harrison). Presently, there are police posted outside of shopping centers in Tehran, and the morality police are stopping not only pedestrians but also cars. If a woman driver argues back, the car she is driving is impounded and she is arrested (Harrison). It is also not just the fashionable young people being harassed, but tourists, journalists, and middle-aged women are receiving the same harsh treatment. Even under the severe dress codes, women use colors and material to express their individuality, but the right to wear a colorful headscarf, for example, has been snatched away. Many of the women dislike this control, and even the women who enjoy wearing a full chador say that it should be a personal choice to wear, and that it should not be forced upon people (Harrison). Clothing stores have been affected by these rules as well. Strangely, shopkeepers are now being told by the morality police to “saw off the breasts of the mannequins because they were too revealing” (Harrison). In the memoir, Nafisi rebels against the dress code for as long as she can, but even when she consents to it for her own safety, she continues to argue with the morality squad when she feels the injustice. She goes

so far as to cancel one of her classes so that she can attend a protest meeting (111). To help her cope, Nafisi turns to different books to find her peace and consolation. Her ability to escape the harshness of her society through literature is one of the skills she tries so hard to teach her students, and the special group that she met with takes this lesson to heart.

How do people live in a place like this then? Everyone cannot leave the country to find freedom because a mass exodus like that would be unrealistic, and the government would never permit it. The citizens of Iran live in constant fear and despair, so how is Nafisi able to keep a positive attitude as well as teach her young women to survive? She and her private class do it by escaping into the worlds of the novel. Nafisi explains, "The novels were an escape from reality in the sense that we could marvel at their beauty and perfection, and leave aside our stories about the deans and the university and the morality squads in the streets" (38). For these women, their survival depends on the chance to leave reality and to live in a fictional world where many things are possible, so that when they once again enter into the harsh world of their reality, they could have hope, and would be refreshed and ready to face all of the trials of daily living.

Even before she assembles the study group, Nafisi uses books to create a sanctuary for herself. During the years after the revolution and into the war with Iraq, she finds peace while reading books. In those long years, she becomes confused with her place in life; she feels irrelevant and finds that she can no longer define patriotism. During this crisis in her life, she would take any book that she could get her hands on and she would read. For her, there could never be enough books to sate her hunger, her need to feel something, anything. She even meets with a group of people who would read and study classical Persian literature (171–173). Nafisi does learn, however, that when you withdraw into the world of fiction, you begin to desire more and more to leave reality for it (11, 74). In order to prevent this from happening, all of the young women had to learn to mature in their reading.

As they enter into these worlds and discuss the books animatedly, it is easier for these young women to open up about their personal lives. There are times that their discussions of books would open up a conversation about their lives, their reality; as Nafisi and the young women in her group share their thoughts, their lives, and their feelings, they created a special bond. During their little intermission from reality, these young women are able to share something positive in common, their love of literature and their desire to live life as best as they could. They even help each other out. For example, Nafisi's daughter Negar ran into the house during one of their classes terribly upset about an incident at school. A girl who had just moved from America was found to have nails too long, and she was punished by having her nails cut so far down that blood was drawn; afterwards, none of the young women were even allowed to approach her or comfort her. When the young women in the group hear about this, they comfort her as best as they can by telling her jokes and stories about their own personal experiences with authorities. With all of their support, Negar is able to recover from the shock of such a terrible ordeal (Nafisi, 58–59).

As mentioned before, people read for a variety of reasons. To paraphrase novelist Flannery O'Connor, people read stories to explore the mystery of personality. Yet how do we prevent ourselves from making the basic mistake of comparing the characters and situations in a

novel to those of real life? It is true that you can learn things about reality and the people living in it from reading books, but Nafisi continually warns us that “a novel is not an allegory . . . it is the sensual experience of another world. [However,] if you don’t enter that world . . . you won’t be able to empathize, and empathy is at the heart of the novel” (111). So how does one read a novel? Nafisi gives us the answer: “This is how you read a novel: You inhale the experience” (111). Reading in this way allows people to more fully appreciate the work for what it is, and how the author intended it to be. Nafisi’s “Dr. A” learns about the complexity of the human nature and all of the dimensions that need to be taken into account when you try to understand a person. With this knowledge, he goes to court to defend one of his students by informing the judge of the compassionate side of the young man. This is a dangerous thing for Dr. A to do during the revolution, but he does so because he thinks it is his duty, that he who knows such things should inform those who do not. Eighteen years later, he is still remembered by a student who decides to pay homage to him in a magazine article. This character had matured in a way that many of the closed-minded revolutionaries could not because they rejected many books for being immoral if it taught anything contrary to government teaching. The student, Mr. Nyazi, is an example of such a revolutionist. During her early years of teaching, Nafisi is challenged by Mr. Nyazi for teaching her class from the novel, *The Great Gatsby* by Fitzgerald. He complains that the book is about a dishonest man who is trying to seduce a married woman, and that the woman is not opposed to the idea and that she is merely an irresponsible rich person. Therefore, he concludes, students would learn that these debase morals were all right for them to imitate. He complains that the book is filling the minds of the students with Western poisons. Nafisi completely disagrees with him and to prove her point not only to Mr. Nyazi, but also to all of her students, she creates a mock trial of the government versus *The Great Gatsby*. Her students participate and are even the jury, while she plays the part of the accused *Gatsby* and Mr. Nyazi the accuser. At the end of the exciting trial, which is full of heated discussion and debate, *The Great Gatsby* wins the case. Nafisi is not the only person to appreciate this classic work of literature. In fact, when it came out in 1926, it received positive reviews from different sources. Gilbert Seldes wrote in the *New Criterion* that *The Great Gatsby* was not only a wonderful novel, but that it was written in such a way that it seemed to have a life of its own (Brucoli, 212). Also in 1926, the *Times Literary Supplement* praised Fitzgerald for writing a unique novel, different from the other fiction of that time, and for creating a piece with great promise (Brucoli 213). In doing this, Nafisi opens the eyes of many of her students, and many were given the chance to become a more mature reader.

The author Henry James had a unique style that was of interest to the young women. In the end, all of his characters gained courage and self-respect, yet not necessarily happiness (Nafisi, 225). To James, a novel would produce characters that represent life and is more than an artificial rearrangement of people, places, and events that would ruin this illusion (Shipley, 370). Thus, he was able to create deep and realistic characters that these young women could be intrigued by. One of his characters that many of the female students took to heart was Catherine Sloper from the book *Washington Square*. Catherine is not at all like a normal fictional hero. She is not thin and beautiful or even intelligent enough to make up for

the lack of physical appeal. There is absolutely nothing unique or brilliant about her. She only has compassion. Catherine is constantly surrounded by people better than she is, more than she is, and she wants a part of that. Like anyone else, she wants to be in love, to be accepted by others, and to be happy. Even though she had never been destitute or in economic need, her emotional needs are never fulfilled. At the end of the book, the one man whom she tries so hard to be in love with finally asks her to take his hand, but she refuses him because he had never really loved her. Catherine has her revenge on all of the people who had refused to give her the emotional help that she wanted, that all humans need, and she accomplishes this revenge by not doing what they expect of her. She does what she wants, and although she isn't necessarily happy in the way she always wants, Catherine has her self-respect and the courage to defend it (Nafisi, 225). This character is an encouragement to Nafisi's student, Raziéh, who is eventually executed in the prisons. The characters around Catherine commit the cardinal sin of novels, blindness to her needs and wants, and Raziéh was comforted by the fictional character's strength because she too had faced the regime's lack of empathy.

Many of the young women can relate to James because he had lived through two wars during his life, the first was the Civil War, and the second was World War I. All of his experiences with the hardships he lived through during the wars gave him a unique outlook on life that the young women very much appreciated. James said to, "Live all you can; it's a mistake not to. It doesn't so much matter what you do in particular so long as you have your life. If you haven't had that what *have* you had?" (qtd. in Nafisi, 247). All of these young women want to live their lives, free to live it for all it is worth, and yet their government prevents them from that. Instead, they are forced to wear chadors or hijabs, their gestures are regulated, and they are not allowed to laugh out loud in public.

Throughout the book, the young women that Nafisi teaches ask deep and valid questions, not only about books, but about their lives, about justice, and about feelings. One such thought-provoking question is asked by Mitra: "Why is it that stories like *Lolita* and *Madame Bovary*—stories that are so sad, so tragic—make us happy?" (44). Nafisi struggles with this question and thinks deeply about it. As the class discusses it more and more, an answer begins to emerge. They begin to recognize that novels are fairy tales of sorts. Fairy tales are full of horrors and tragedies, but what excites the audience about them is the magic of the good overcoming the immense restrictions of evil. Novels can surpass the limits that reality puts on every person, and they boldly rebel against all of the rules and conventions of real life. It is this quality, this act of defiance against the evils of life that excites the readers and allows people to enjoy such tragic and heartbreaking books. Another difficult question that they face is the choice between doing what is right and doing what they want. They also struggle with the question of what "right" is; is it doing what a figure of authority tells them to do, or is it following their hearts? Nafisi cannot answer these questions for the young women. She can only watch and guide them as the young women grow up and are forced to come to their own conclusions. Do they have the right to feel happiness or to think for themselves?

For the people in Iran, the question of thinking for themselves and of making decisions for themselves is not uncommon. The Islamic government tells its women that they do not

have the right to be happy, that what they think is irrelevant. Their men are not taught to think, but to follow and give utmost devotion to the government's corrupt laws. With all of this in mind, the young women in Nafisi's secret class struggle to become independent thinkers regardless of the dangers and consequences that might occur from disregarding the dogma of the government.

The wearing of the veil has become a major issue of late, inspiring much discussion in America. As has been mentioned earlier in this paper, the dress code is one of the government's ways to control its people, albeit not the only form of oppression. However, in Lyn Reese's essay on the historical perspective of Islamic dress in the book *Women in the Muslim World: Personalities and Perspectives from the Past*, she clearly states that it is a Western misconception that the veil is oppressive to women. Reese states that in the Muslim world, honor of the family resides in the conduct of its women. Honor comes from a woman being chaste; therefore, a veil is worn in order to allow the woman to be respected by men, and to be protected from their desires. The veil is also worn in deference to their religion. According to Reese, "Woman activists in the Muslim world are less preoccupied with what women wear than with securing other freedoms such as access to education, better health care for their families, or wider opportunities for work." For many women, the reasons for wearing a hijab (scarf worn around the head and under the chin) vary from their desire to dress modestly to wearing clothes that feel comfortable to them. It was not a command from the *Quran*, and the veil did not become common as a status symbol until the second Islamic century (Reese). Even by this time, the veil was worn as a symbol of riches and power. It was not until the tenth century that wearing a veil became a common rule. But once again, it was worn more as a sign of modesty, than as a means of control. In 1899, Qasim Amin wrote *The Emancipation of Women* where he called for a change of many interpretations of the *Quran* including the wearing of the veil. He stated that such practices were not Islamic law, but were just the customs of people who had become Muslim. The Egyptian writer Malak Hifni Nassef refuted this by saying, "First women needed a 'true' education and better knowledge of the world, and men needed to learn not to harass unveiled women" (Reese). However, some political leaders went to the extreme, such as Reza Shah Pahlevi banning the veil in Iran in the 1930s. The sudden and extreme change frightened many women instead of liberating them. To them the veil was not the repressive tool; it was only a symbol of their repression. In other places around the world where Islam was resisted and its followers were threatened, the women would wear the conservative dress in order to assert their identities. In the late 1900s, wearing a hijab came to symbolize the uniqueness and superiority of their culture. A hijab allows women more freedom to learn and work in their society, and it stops the men from treating women only as sex objects. Men are forced to recognize a woman's personality and mind without lusting after her body (Reese). The problem with this is that even with the veils, women are still not being treated as equals or as normal beings in the Islamic Republic of Iran. I believe that this essay helps to point out the fact that Mashid, one of Nafisi's students, could still like wearing the veil as well as think for herself. To her, the veil was a sign of her faith, not repression. Her faith was important to her, as were the customs of her family.

Mashid is an important character, because she is a type of woman who wears the veil by choice, even when it was not a law. Wearing the veil separates her from others who wear “normal” clothing, and during pro-revolutionary Iran, people would mock her for it. This persecution from her peers only strengthened her faith, and it separated her from others. However, when it became law to wear the veil, Mashid’s sign of true faith was stripped away and became meaningless. For the women who do not share the faith of Mashid and don’t want to wear the veil, Nafisi tells us that the required garments and regulations are forcing women to live double lives, and that it only makes women worry, fret, and takes away their self-confidence (26–28). I think that a deeper reading of Nafisi’s statement as well as reading through this essay has definitely solidified my belief that all of the problems were the result of the corrupt and misguided requirements. Forcing a dress code on the women for “religious” purposes is what is repressive, not the dress itself.

The government was not only regulating what women wore, but it was also regulating other aspects of their lives. So many rules were placed on behavior and recreation that it became difficult for people to separate themselves from the existence of the government. The government had so penetrated the hearts and minds of its people that it shaped them against their own wills. The young women feel that they were doomed to be unhappy, that they do not deserve love (Nafisi, 281). When Nafisi asks her “magician,” Professor R about this, he tells her that she should not encourage her young women to be victims, but that she should show them that they need to fight for their happiness. The best way to fight for happiness is by giving them their imagination, just as Jane Austen did during the Napoleonic Wars (Nafisi, 281–282). It was sad to Nafisi that the young women studying with her knew all about female authors and characters, but they did not know about their own bodies and what they should expect from their bodies; how can you love someone else if you did not love yourself? Nafisi did her best to teach the young women about true love and about themselves (304).

It is said that the pen is mightier than the sword, and some may wonder how that is. Azar Nafisi’s book, *Reading Lolita in Tehran: A Memoir in Books*, clearly demonstrates how this is so. Books meant more to her than a pleasurable read, or just another fantasy; they were her life, and her way of life. Nafisi carried this passion and shared it with as many people as she could, but not everyone understood. In this partly fictionalized autobiography, Nafisi explores several years of her life through her reviews of a few different works. She focuses on *Lolita*, *The Great Gatsby*, *Daisy Miller*, and *Pride and Prejudice* to give us a description of life in the Islamic Republic of Iran as well as how people lived in this dangerous and cruel country. Her characters clearly show how books are more than words as they learned to survive in their totalitarian government by escaping into the worlds of novels, by maturing mentally and gaining a deeper understanding of the nature of the world around them, and by using the examples of different characters to become their own person in a cruel society that tries so hard to form its people into its mold.

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# ***Walking Fearlessly: How Landmines Hamper Mozambican Peace and the Role the International Community Could Play to Promote Meaningful Security***

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## **Abstract**

Following 30 years of consecutive wars, Mozambique reached a peace agreement in 1992. However, a full transition to peace will not be reached in Mozambique until the Mozambican population can perform every day, mundane chores free from fears of the one to two million landmines plaguing the country. Both anti-personnel and anti-tank mines derived from a variety of manufacturing states infest rural Mozambican regions. They result in the loss of human capital, adversely impact the socioeconomic security of rural peasants (the majority of Mozambique's population), and obstruct the practice of traditional customs. Though the United Nations Operation in Mozambique (ONUMOZ) curtailed physical violence in the country, it made few strides to resolving Mozambique's landmine crisis. ONUMOZ did help create Mozambique's government-operated Comissão Nacional de Desminagem (CND). The CND effectively coordinated the actors involved in the International Campaign to Ban Landmines beginning in the late 1990s, when the global demining movement gained momentum. International organizations, particularly nongovernmental organizations (NGOs), may alleviate the detriments associated with demining efforts. However, the costs and dangers associated with demining make the process protracted and tedious. Thus, prospects for meaningful peace remain unattainable in the foreseeable future.

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## ***Framing the Issue***

A maxim concedes that the surest consequence of war is more war. Truly, most of the world experienced the consequences of war during the twentieth century, and following World War II, countless conflicts erupted within underdeveloped regions. Mozambique's case follows this general formula. Here, an 11-year war for independence soon precipitated into a 16-year civil war for control over the country. Although Mozambique (along with the majority of the world) now enjoys the absence of serious interstate conflicts that characterized twentieth century warfare, the remnants of war abound, particularly with landmines and



unexploded ordnances of war (UXOs) that plague the lands of many less-developed countries, particularly in Africa.

The former United Nations (UN) Secretary General Boutros Boutros-Ghali—upon receiving reports from a UN fact-finding mission addressing the effects of landmines on civilian populations—professed that

Of all the tasks involved in setting a nation on a new road to peace and prosperity, perhaps none has the immediate urgency of mine clearance . . . No attempt to restore a community and security can succeed without effective land-mine removal. (UN Electronic Mine Information Network, 1994)

However, the removal of land mines proves especially difficult when considering the sheer amount of active landmines buried throughout the world. Approximately 110 million landmines remain deployed in covert, active states around the world. Moreover, roughly 30 million mines infest the African continent (Karns and Mingst, 2004: 334–335; Pequeno, 2001: 42). These landmines claim 26,000 casualties a year, mostly affecting civilians in states that have been free from war for at least a decade (Cameron et al, 1998: 2). With specific regard to Mozambique, estimates suggest that between two and three million landmines are scattered in Mozambican lands.<sup>1</sup> A combination of Portuguese colonial forces, rebel armies, and own government initiatives—aiming to protect strategic infrastructures—receive the blame for mining the state (Dos Santos, 2004: 97).

### **Blame Game**

As the French and British colonies gained independence during the 1950s and the 1960s, Portugal's dictatorial rule crushed all hopes of colonial independence. Under Salazar's rule from 1932 to 1968, Portugal, having become an autocratic regime, likewise behaved tyrannical towards its Mozambican property (Lalá and Ostheimer, 2004: 3). Because the state sponsored discrimination against the indigenous populations, dissension for colonial rule escalated to unprecedented levels. War against their colonial rulers became the only recourse.

Mozambique suffered 30 years of consecutive wars. First, the Struggle for National Liberation commenced its armed struggle on September 25, 1964, and finally signed its peace-reaching Lusaka Agreement on September 7, 1974. This armed liberation movement entitled FRELIMO<sup>2</sup> differed radically from the independence movement of its Angolan counterpart, a fellow Portuguese colony. Mozambique's divisive, brutal civil war never served as an ideological battleground for the Cold War superpowers (Lalá and Ostheimer, 2004: 3–5). The 10-year sporadic warfare ended with FRELIMO taking control of the territory

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<sup>1</sup> Although keeping accurate records of deaths attributable to landmines proves challenging, approximately 1,000 Mozambicans have been killed by landmines, with 47 deaths occurring during 2007. This figure, nonetheless, does not account for the thousands of individuals maimed and eventually killed by the lasting effects of landmine incidents (Landmine Monitor, 2008).

<sup>2</sup> *Frente de Libertação de Moçambique*, or the Front for the Liberation of Mozambique.

under President Samora Machel and declaring Mozambican independence on June 25, 1975. Nonetheless, a mere two years later, a civil war struck the region. Mozambique's neighboring white-ruled states, first Rhodesia and then South Africa, fostered and financed an armed rebel movement to sabotage Mozambique's Marxist-Leninist government. After years of infrastructure destruction and destabilization, government nationalization of industries, and exodus of Portuguese peoples, the war ended with the Rome Peace Agreement in October 1992. The ill effects of the war of independence and the ensuing civil war on Mozambicans are astronomical.

Perhaps the greatest legacy of these conflicts involves the heaps of mines planted that continue to undermine Mozambican peace. FRELIMO's government sowed countless landmines with no records or controls beginning in 1977 to suppress Rhodesian invasion; Rhodesian forces retaliated by planting their own mines. In addition, Malawi and Tanzanian forces planted landmines within Mozambican territory to protect their borders during the civil war, while the Mozambican government mined some of its own land as a means of protecting strategic resources from sabotage (Buque, 2001: 9–11). Though all these parties recklessly and unremittingly mined the entire country, the areas most heavily mined included Mozambique's border with Zimbabwe and the western and southern provinces (Monin and Gallimore, 2002: 121).

The issue thus becomes apparent that no single entity can receive the blame for planting these silent killers within Mozambican soil. What does seem evident, however, is that rural peasants and governmental infrastructures took and continue to take the brunt of this 30-year mine laying. With particular regard to the 1980s conflict, a 1993 Africa Recovery Briefing Paper noted that 4.5 million of the 16 million Mozambican inhabitants were driven from their homes (Van Tonder, 2002: 19). Those civilian personnel who remain now suffer day-to-day crippling fears of taking one wrong step and reaching their demise. Until the Mozambican population can perform daily mundane chores without these valid qualms, a full transition to peace has not been reached in Mozambique. Peaceful transitions must be measured by the 11-year old soccer players' dismay after kicking their ball into a demarcated field; a family of five's starvation spurred by their lack of farming land; a frail, old woman's inability to visit her husband of sixty years' grave. Under the United Nations' ONUMOZ peacekeeping force, peace supposedly returned to the war-ridden Mozambique in 1992. As long as the silent, merciless predators from these wars remain active, though, peace will exist only within the confines of signatures on a document. Mozambique's journey to an authentic, peaceful existence still has a winding trek ahead.

An examination of a multitude of sources reveals insight into the effects of landmines on Mozambique's security and development. For the purpose of understanding to what extent landmines have caused disarray in Mozambique, "security" will be defined in terms of sustainable human capital, an adequate supply of socioeconomic resources, and the ability of the Mozambican populations to sufficiently carry out their cultural traditions without fear of death or injury. Furthermore, "peace" will be conceptualized as a legitimate government authority holding a monopoly over violence in its respective state (Doyle and Sambanis,

2006: 18). After framing a picture of Mozambique's developmental status, sources will be synthesized to determine an appropriate solution to help repair Mozambique's landmine situation. Deference to the international community's role in a solution shall be appropriated.

### **Introduction to the Republic of Mozambique**

Before delving into the Mozambicans struggle to establish peace amidst the uncertainty created by landmines and UXOs, it is important to discuss a picture of Mozambique's current political and economic circumstances. President Armando Guebuza has served as the state's head of state since February 2, 2005, and the Prime Minister Luisa Diogo has acted as the republic's chief of state since February 17, 2004. According to a July 2008 census, the country's population remains around 21,284,700 (Central Intelligence Agency, 2008). Economically, the country's total GDP in 2007 was \$17.64 billion, whereas the GDP per capita was approximately \$800. Estimates from 1997 place the nation's unemployment rate at about 21 percent; moreover, 70 percent<sup>3</sup> of the population according to a 2001 census lives below the poverty line (Central Intelligence Agency, 2008). In recent years, Mozambique has enjoyed a healthy economic position because of its institution of macroeconomic, stabilizing reforms and because of its political stability since the 1994 multi-party elections (Central Intelligence Agency, 2008). Because of the bountiful Foreign Direct Investment (FDI) poured into the country and because of the International Monetary Fund (IMF)'s forgiveness of Mozambique's debt, the state has recently boasted incredible growth. Its 2007 inflation rate was reduced to 8 percent from the double-digit status it faced in the early part of the decade, yet the country's GDP rate increased to 7 percent (Central Intelligence Agency, 2008).

As a whole, Mozambique's economy has strengthened. On a microscopic scale, however, most Mozambicans continue to lack socioeconomic peace and security. The numbers that indicate Mozambique's increasing GDP prove deceptive in light of the vast majority of the population that lives in poverty. Mozambique may achieve economic growth as defined plainly by the raw GDP numbers. Nevertheless, millions of Mozambicans cannot attain security until they can behave autonomously in their agricultural production without fearing landmine fields. The Mozambican government lacks the resources to rid its entire soil of landmines and UXOs.<sup>4</sup> Furthermore, as indicated, Mozambique's landmine problem has historically derived from the actions committed from several international actors. Accordingly, if the globe cooperated to stamp out the devastating landmine and UXO problem in Mozambique, the individuals within the less-developed country could one day ideally live free from their paralysis of these remnants of war.

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<sup>3</sup> This figure comes from a 2001 census.

<sup>4</sup> Author's Note: A specific examination of the costs involved in removing landmines appears in the last section of this paper.

### Landmines and Unexploded Remnants of War

A cursory review of landmines and UXOs is also warranted and beneficial to an understanding of Mozambique's current hardships. Essentially, military and militias use landmines to protect infrastructures, services, and troops. They also employ landmines to disorient and confuse enemies, thereby making the opposition fearful of advancing combat forces (Matusse, 2001: 48–49). As previously asserted, landmines particularly devastate less-developed countries and the African region. This phenomenon occurs because landmines serve as an ideal weapon for guerilla warfare and poor armies. Landmines are cheap to produce and lay, effective in their aims, and require little to no maintenance (Monin and Gallimore, 2002: 111). Accordingly, it remains apparent why the feuding parties in Mozambique's civil war resorted to landmines as their chief weaponry.

By definition, UXOs comprise all explosive weapons employed that never exploded and still pose risk of detonation. The term *explosive weapons* can include, but is not limited to, bombs, bullets, grenades, shells, landmines, and naval mines. For both economic and practical reasons, parties to Mozambique's wars extensively used landmines in comparison to these other UXOs. Furthermore, due to their manners of detonation, landmines pose the most significant risk of not exploding during warfare and consequently acting as hazards within postwar societies (Van Tonder, 2002: 59–60).

With specific regard to landmines, two principle subgroupings of these weapons include anti-personnel and anti-tank mines. Anti-personnel mines can be designed to be activated either by one person or by groups of people. Some mines carry enough explosives to kill an individual who triggers the device; nevertheless, most antipersonnel mines aim to maim, not kill, their targets. Severing the triggerer from his or her legs forces the victim to rely upon another one or two people to retrieve him or her from amid the minefield. Thus, individuals within rural communities enter fields to save the injured, risking their own lives in the process. Hence, an atrocious cycle is created. Rather than merely killing an individual, many antipersonnel mines force others to tend to the landmine survivor (UN International Mine Action Standards, 2005: 11–18). Antitank mines carry enough force to destroy vehicles. Often military groups plant antitank mines at beaches and borders where enemy troops tend to land (Matusse, 2001: 46–47). Specific mines within each subgroup are constructed with different triggers. When military groups plant distinct types of mines within the same areas, they make it increasingly difficult for individuals to avoid triggering these mines.<sup>5</sup>

Though much of the global demining efforts focus on antipersonnel mines,<sup>6</sup> antitank mines can cause worse victim casualties and be more destructive than their antipersonnel counterparts (Doucet and Lloyd, 2002: 5–6). A United States Department of State report

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<sup>5</sup> For a diagram illustrating different types of landmine triggers, both for antipersonnel and antitank mines, note Appendix A.

<sup>6</sup> For example, the treaty established at the Ottawa Convention targets anti-personnel mines in particular (Doucet and Lloyd, 2002: 5–6).

entitled “Hidden Killers” determined that 800,000 anti-personnel and 400,000 anti-tank mines afflicted Mozambican lands. Of these approximate 1,200,000 mines, only 58,000 had been destroyed by late 1997 (1998). As of 2003, it is claimed that roughly 600,000 mines remain planted in Mozambican soil (Power, 2007: 185). The presence of the remaining antipersonnel and antitank mines continues to claim numerous lives. Between 1996 and 2003, the number of reported landmine casualties totaled 615, though Landmine Monitor officials suspect only a miniscule number of rural Mozambicans make efforts to report casualties (Power, 2007: 185). Additionally, landmines form hurdles to the physical, socioeconomic, and cultural security of millions of Mozambicans.

### **Barriers to Mozambican Security**

“Hidden Killers” notes that landmines within Mozambique “threaten the peace process and post-conflict recovery and reconstruction” (U.S. Department of State, 1998: 29). Specifically, landmines distress peaceful reconstruction efforts by removing valuable human capital, targeting the agricultural economic sectors, and shattering Mozambicans’ reliance on familiar customs. Further building on these core problems remains the issue that Mozambique has experienced substantial setbacks in its demining endeavors due to endemic natural disasters. These disasters often drive the Mozambican government and peoples to reinstate demining efforts.

#### **Starting Again**

Overwhelming and unpredictable flooding during the 2001 and 2002 rainy seasons exacerbated Mozambique’s landmine problem. Complication in post-flood reconstruction efforts heightened because the floodwaters moved the landmines from their original emplacement areas, many of which had already been demarcated with warning signs or demined (Dos Santos, 2004: 98). These floods hold grave implications for Mozambicans’ daily lives. Although the government had striven to detect mine locations, thereby securing arable land for Mozambicans to farm and live on, the floods demolished much of their efforts. Even in cases where landmines did not shift locations from the flooding, many reference points that villagers used to indicate unmarked minefields were washed away (Monin and Gallimore, 2002: 122). Once again, the randomness of landmine and other UXO placements stifle the ability of numerous Mozambican communities to carry out daily tasks without fear of being maimed or killed by antipersonnel and antitank mines.

#### **Human Capital**

The unsystematic placement of landmines ensures that any Mozambican at any time can become a victim of these silent killers. Statistics from 2001 reveal that around 8,000 to 10,000 Mozambican have survived landmine encounters from 1994 through 2001 (Buque, 2001: 14). Human Rights Watch pegs this number much higher, estimating around 10,000 to 15,000 Mozambican landmine survivors during approximately the same period (Monin

and Gallimore, 2002: 121). These figures, nevertheless, do not convey the devastating role these passive killers played during Mozambique's armed conflict rebellion in the 1980s and early 1990s, where thousands of militia members and fleeing civilians stepped on landmine mounds (Dos Santos, 2004: 98). Consequently, thousands of maimed, adult Mozambicans have been removed from the labor force. Youth irreparably injured by landmines have been stripped of their opportunity to enter the labor force. Though Mozambique requires immense amounts of human capital during its transition from conflict to both stability and economic growth, its human capital remains deficient because of landmines. From a neoclassical macroeconomic standpoint, landmines prevent Mozambique from reaching its full growth potential because they engender an overall reduction in the supply of human capital necessary for Mozambique to enjoy an output of continued economic growth (Bridger and Luloff, 1999: 378).

Average households in Mozambique consist of 5.6 people among poorer families, the majority of which reside within rural regions (Chilundo and Cau, 2001: 77). This is especially weighty because if the primary male breadwinner becomes the victim of a landmine—which he often does in his attempts to plant agricultural products—then his multiple dependents must then rely on both government subsidies and international aid to meet their needs. If the breadwinner survives, he might still suffer side effects that prevent him from fully serving as a contributing member to the economy. For example, many landmine survivors become victims of a post-traumatic stress disorder called phantom pain, which causes these survivors to experience sharp, debilitating aches around their amputated regions. Psychologically, some survivors suffering from phantom pain cannot function normally for years or decades due to this disorder (Cameron et al., 1998: 4). Thus, while these individuals can still physically earn wages and support family members, phantom pain can mentally prevent them from overcoming their landmine ordeals, rendering long-term deterioration in the quality of human capital. Survivors' anxiety can render the same result of a lull in economic development. Particularly evident in rural Mozambican areas, poverty and destitution make the prospects for a sustainable, peace-espousing democracy dim.

### **Socioeconomic Factors**

Despite its loss of human capital and its suffering microeconomic prospects, Mozambique has recently experienced rapid macroeconomic growth, as determined by GDP and inflation. Mozambique's greater investment into its chief mega economic projects, including the aluminum company Mozal, deserve credit for much of this growth, as do increased funds from Mozambique's main investors, South Africa and Portugal. Nonetheless, economic disparities within the state intensify as Mozambique increases its aluminum and electricity exports<sup>7</sup> while cutting finances for its agricultural and fishing sectors. Considering that 83 percent of the population works predominantly within the latter sectors, and further noting

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<sup>7</sup> Statistics in 2003 pegged Mozambique's aluminum exports accounting for 53 percent of the total exports, and electricity exports, at 16 percent (Lalá and Ostheimer, 2004: 45).

that 70 percent of the population resides within rural areas, the detrimental role landmines and UXOs play in curtailing Mozambique's transition to a peaceful, economically-thriving state is noticeable (Lalá and Ostheimer, 2003: 44–47; Van Tonder, 2002: 61).

To date, much land within the major cities and roads within Mozambican territory have been demined or demarcated for subsequent demining. The majority of the hidden killers afflict the rural regions where not only the greater population of Mozambicans lives, but also where four-fifths of the population derives its livelihood. Truly, the poor and anonymous peasants bear the brunt of the country's mining (Matusse, 2001: 51). Militants laying landmines performed their tasks in areas proving of great value to locals, including wells, irrigation networks, cultivatable and grazing lands, bridges and river crossings, markets, hospitals, schools, and other important public places (Gruhn, 1996: 693; Monin and Gallimore, 2002: 111). Buque corroborates this point, citing evidence suggesting that landmines had been planted infrastructures so pertinent to rural peasants, including roads fields, water sources, health facilities, schools, factories, and cemeteries (2001: 10). Liberal sowing of mines in these areas has debilitated farmers who rear and range livestock and produce crops on these infested lands, thereby facilitating the utter paralysis of Mozambican communities via fear. Fear is a vile enemy that can effectively impede a state emerging from hostilities to embrace transition to democratic peace. For how can Mozambican communities reconstruct their societies when havoc—spurred from mining—hampers reemerging markets from trading with their neighboring communities?

### **Cultural Factors**

Landmines impede the intercommunity cooperation necessary for economic growth. Even within single communities, however, landmines hinder the emotive customs of Mozambicans that offer them personal comfort during their state's transition from extended warfare to peace. Pequeno addresses several cultural traditions of the Mozambican people that have been obstructed by landmines. In particular, Mozambicans practice burying old objects such as clay pots under trees near cemeteries as a means of revering ancestors. Other traditions comprise naming babies and conversing with ancestors at "sacred-trees" (2001, 40–41). Militias and other military groups, though, targeted these cemeteries and "important public places." Hampered in their abilities to perform these traditional practices, many Mozambicans feel further vulnerable to landmines. Not only do these tacit killers impede economic and social development, but cultural preservation, too. Demining approaches should be cognizant of peoples' beliefs and identities. Mozambican culture emphasizes that traditions are permanent, whereas political governments pass through transient phases. Hence, most Mozambicans will struggle to confer genuine legitimacy on their political leaders until these ephemeral leaders and the demining efforts they support recognize all aspects of Mozambicans' cultural lives.

Moreover, the approximate 600 to 1,000 mine survivors a year find it emotionally scarring to return to their communities (Landmine Monitor, 2008). Mozambique's government treats landmine survivors like disabled individuals, which often promotes social stigmas against landmine survivors and makes the process of reintegration into local communities

difficult. Although the government adopted a national disability law in June 1999 that accords full rights to persons living with disabilities, the government has not implemented this policy due to a supposed lack of resources. Hence, grassroots movements such as the Association of Disabled Mozambicans (ADEMO) have been petitioning the government for expanded rights for Mozambicans living with disabilities. Specifically, ADEMO campaigns to gain disabled Mozambican equal access to living accommodations, equal employment opportunities, and both physical and occupational therapy. ADEMO, too, desires the government to deliver on its promises of instituting community-based rehabilitation programs that would counteract traditional stigmas. When these programs were proposed in 1999, they were intended to be created throughout rural communities that did not have ready access to media outlets (Power, 2007: 185–187).

Considering that the majority of landmine victims come from rural areas, negative outlooks concerning disabled survivors have substantially affected a significant portion of rural economic sectors. By founding the Ministry for Co-ordination of Social Affairs (MICAS), Mozambique has made strides in its objective of “integration into the community of people with disabilities with the view of changing perceptions of disabled people” (Buque, 2001: 16–18). Still, ADEMO continues campaigning because the Mozambican peoples do not believe that the government has sufficiently delivered upon its promises. Cultural beliefs goad the existence of social stigmas, thus the Mozambican government must first make consolidated efforts to reform these attitudes toward disabled persons to advance community building.

### ***Assuring Peace: A Multilateral Approach***

The acute effects of landmines on Mozambique’s transition from conflict to peace safeguarding are palpable and dire. Generating solutions to this problem is not simple. In many regards, Mozambique’s landmine and UXO situation transcends the state’s boundaries, not solely the destitute African state. Mines found in Mozambique have been produced in a variety of states, including Russia, China, South Africa, the United States, Italy, Portugal, Belgium, Bulgaria, France, the United Kingdom, Zimbabwe, and Germany (Monin and Gallimore, 2002: 116; Van Tonder, 2002: 59–60).<sup>8</sup> The former Soviet Union and its Eastern European block states have played a major role in supplying landmines. This is not too surprising considering the Marxist regime espoused by FRELIMO’s forces. However, the democracy-championing countries of Western Europe and the United States have also been guilty of supplying mines sown in Mozambique. It is abundantly clear these states sold landmine weaponry that reached the hands of the mine planters. With countless international actors bearing some responsibility in the mining of Mozambique, these same actors ought to rally together to cooperate both with the Mozambican government and the Mozambican public to devise lasting solutions. Many of these states sold mines to the feuding parties in

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<sup>8</sup> For a full list of the mine types recovered in Mozambique by their countries of production, refer to Appendix B.



Mozambique merely out of political allegiance during the Cold War, disregarding the millions of Mozambicans who would suffer the repercussions of the states' actions. Now almost two decades conflict-free, Mozambique's countryside is still plagued with these mines. Hence, all parties responsible for the impoverished state's mining should assume responsibility. Increased multilateralism between states, NGOs, and the general Mozambican population can eventually purge this state from its incapacitating landmines.

### **UN Peacekeepers: ONUMOZ**

An international effort to address peace and security often gains legitimacy when it involves the UN, the central piece of global governance and the cornerstone of multilateral democracy (Karns and Mingst, 2004: 1–4). According to its 1945 charter, the UN endeavors to maintain international peace and security as its primary objective. To achieve this goal, the Security Council, working along with the Secretariat's Department of Peacekeeping Operations, creates peacekeeping forces on a case-by-case basis to help defuse tensions and ease negotiations within transitioning states. When the UN establishes a peacekeeping force, this represents a multilateral approach to address an issue whose scope could be global in reach. The UN is honest in its self-assessment of its own peacekeeping capabilities. Whereas forces in El Salvador, Slavonia, East Timor, Namibia, and arguably Cambodia resulted in successes, peacekeeping operations failed in Cyprus and Rwanda (Doyle and Sambanis, 2006: 197). Successful missions depend on the specificity and extent of the Security Council's mandate, the training and cooperation of troops, and timely reactions to the situation.

Following the signing of the 1992 Peace Agreement in Rome that ended the Mozambican civil war, Mozambique allowed for the presence of a UN peacekeeping force to assist the country in its transitory phases. The mandate of the resulting UN peacekeeping force, ONUMOZ, boasted political, military, electoral, and humanitarian objectives; it did not, however, specifically identify demining under any of these four broad categories (Dos Santos, 2004: 100; Van Tonder, 2002: 18). One of ONUMOZ's greatest successes involved its efforts to reabsorb former militia members and soldiers into civilian life. A total of 91,691 registered soldiers had to be sorted through, said the Mozambican Defense Force (Van Tonder, 2002: 45); the UN assisted in Mozambique's retention of 30,000 soldiers for its new army and the demobilizing of the rest (Van Tonder, 2002: 32–35). The mission in Mozambique represented one of the UN's shining victories. Karns and Mingst observe that during the period from 1992 to 1994, the ONUMOZ peacekeeping mission helped Mozambique transition from a 15-year civil war with over one million casualties and five million refugees "to stable peace, a 10 percent economic growth rate, and rising human development levels" (2004: 316).

ONUMOZ facilitated Mozambique's immediate changeover from civil war to independence. Nevertheless, the peacekeeping force only minimally addressed Mozambique's landmines by sending mine specialists in late October 1992 to prepare a plan to deal with Mozambique's two million unclear mines. Though the specialists completed their Technical Report in January 1993, the UN failed to engage in serious demining activity for the

subsequent 18 months, thereby inciting anger among the Security Council members and donor governments. In response to this criticism, the UN instigated the Accelerated Demining Program in mid-1994, a minimalistic project that aimed to equip 450 local Mozambicans with the tools and skills necessary to engage in mining clearance activities (Hubert, 1998: 322–323). However, a mere 450 individuals to combat Mozambique’s substantial mine situation would not suffice. The UN thus aspired to expand this program into a self-sustaining enterprise. Time, too, formed a constraint, for the ONUMOZ peacekeeping force was scheduled to depart within a few months. Therefore, the United Nations transferred the power of the Accelerated Demining Program over to the Mozambican government. Mozambique efficiently converted the UN project into the government-operated CND, which took control of the state’s demining efforts in May 1995. Now, the CND primarily coordinates all demining undertakings and propagates information concerning the mine statuses (Van Tonder, 2002: 79–81). It serves as a task manager that synchronizes the efforts of all the multilateral actors demining Mozambique and works to formulate consensus among governments, intergovernmental organizations, and NGOs (Dos Santos, 2004: 99). Contrarily, at the time of its inception, such broad-based international support did not exist. A cocktail of international actors, including NGOs, the International Committee of the Red Cross (ICRC), donor governments, and increased Mozambican involvement was essential for the state to reclaim previously mined lands and to reinstitute peace within its countryside, but international actors ranked demining efforts as low priorities during the mid-1990s. This promptly changed when the international regime pertaining to demining, the International Campaign to Ban Landmines (ICBL), gained widespread support in 1997.

### **The International Campaign to Ban Landmines and Mozambique**

Prior to the late 1990s, the broad public conferred only minimal attention to the global landmine horror. When the ICRC and several humanitarian NGOs began documenting dramatic numbers of civilian mine casualties in post-conflict societies during the early 1990s, landmines started to become a ghastly symbol of the post–Cold War era (Karns and Mingst, 2004: 334; Van Tonder, 2002: 70). A conglomeration of non-state actors mobilized public opinion to rally behind the demining cause. Consequently, the ICBL was created in 1992.

The first coordinator of the ICBL, Jody Williams,<sup>9</sup> reckoned the task of rallying support behind the demining movement relatively effortless. Indeed, Williams noted that “the landmine problem was very concrete,” and data abundantly showed that the issue was “pretty black and white that it’s [landmines] a bad weapon so we got popular support” (Monin and Gallimore, 2002: 5). Nonetheless, this popular support Williams referred to in 1993 pales in comparison to the support the ICBL currently maintains. Fewer than 40 sovereign states joined the ICBL during the early to mid-1990s, and most of the movement’s mobilization

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<sup>9</sup> Author’s Note: Because of the ICBL’s success, Williams received the Nobel Peace Prize in 1997 (Karns and Mingst, 2004: 335).

derived from NGOs (International Campaign to Ban Landmines, 2008). Although NGOs can provide humanitarian aid to mined countries, they serve roles subordinate to those of states in the realm of international politics. More broad-based state support for demining was necessary, yet states still focused on ending actual conflicts precipitating from the end of the Cold War. Overall, they perceived no immediate need to address passive land mines.

The tides changed and global pressure began to mount in January 1997 due to the actions of one woman. The late Princess Diana of Wales, the world's most photographed woman, brought the global landmine matter to the forefront when numerous magazines featured photographs of the princess walking an Angolan mine field while wearing protective clothing and a visor (Monin and Gallimore, 2002: 13). Donning the face of the demining movement, Princess Diana's actions, and her untimely demise later that year, spurred the eventual creation of a demining international regime,<sup>10</sup> characterized by the ICBL push for the conclusion of the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-personnel Mines and on Their Destruction. This document, more simply known as the Ottawa Treaty, became international law by 1999 (Karns and Mingst, 2004: 334–335). The ICBL represents the most comprehensive international effort to eradicate the global landmine epidemic. The campaign adopts a three-fold approach to landmine purging: it promotes the discontinuation of landmine production, endorses stockpile destruction, and actively operates to clear contaminated territories (International Campaign to Ban Landmines, 2004).

Now boasting over 156 signatories (including Mozambique<sup>11</sup>), the only main global actors abstaining from the agreement include Russia, China, and the United States (International Campaign to Ban Landmines, 2008).

The First Meeting of States Parties to the ICBL took place in Maputo in May 1999, signifying the importance of Mozambique's vast mining problem to the world community. Commencing the meeting, President Joaquim Chissano of Mozambique depicted the enormity of the host state's mine dilemma:

In view of the three generations of landmines implanted in our territory . . . my people live in uncertainty and permanent fear, which prevent them from effectively using vast areas of arable land . . . Demining and destruction currently take place at the pace of only 11 thousand mines per year, thus requiring approximately 160 years to clear them all. (Dos Santos, 2004: 98)

Examining Chissano's comments, in the scheme of a state developing a strong economic infrastructure, 160 years does not seem unreasonable.<sup>12</sup> For example, modern European

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<sup>10</sup> Karns and Mingst explicate that an international regime exists when "participating states and other international actors recognize the existence of certain obligations and feel compelled to honor them" over a certain global governance issue (2004, 12). Prior to 1997, the ICBL did not enjoy enough broad-based support and momentum to be classified as an international regime.

<sup>11</sup> The Republic of Mozambique ratified the Ottawa Treaty on August 25, 1998 (Van Tonder, 2002: 72).

<sup>12</sup> Author's Note: Granted, this estimate of 160 years derives from a 1999 source, and the demining movement in Mozambique has accelerated since the late 1990s. The sentiment President Chissano expresses still rings true, though, for demining efforts fall immensely short of their potential.

superpowers established their economies over centuries of nation and state building, amid interstate conflicts. However, for the 21.3 million Mozambican peoples, 160 years is far too long to wait for peace that is already overdue. Having already suffered through 30 years of conflicts, Mozambique runs the risk of erupting once again into war should it not enhance its efforts to improve its constituents' livelihoods. If the past serves as an example to lessons learned, impoverished militant forces resort to mining as a cheap, destructive way of achieving their ends. Demining efforts would consequently be hampered due to civil unrest. The ICBL should utilize its principle humanitarian actors, NGOs, to restore the population's socioeconomic, cultural and, foremost, physical security to prevent a further outbreak of conflict.

### **Role of NGOs**

NGOs member to the ICBL undertake a gamut of issues, including disarmament, socioeconomic development, human rights maintenance, and refugee assistance (Rutherford, 2004: 60). They carry out the daily operations relevant to Mozambique's demining because they possess the necessary resources to do so. Furthermore, these humanitarian organizations help rebuild the failing infrastructures that state hostilities produced, overcoming the hampering effects of landmines on this rebuilding process.

Mozambique has observed a rapid expansion of NGOs over the past two decades. Indeed, in 1991, approximately 200 NGOs served the troubled state, yet by 2002, this number had risen to 813 registered ones (Lalá and Ostheimer, 2004: 28).<sup>13</sup> Via its CND entity, Mozambique plays a crucial role in task-managing this plethora of demining organizations. Although Mozambique's weak economy may prevent it from funding the manual mining clearance operations, it still invests some resources<sup>14</sup> to the demining efforts (Geneva International Centre for Humanitarian Demining, 2005). Independent of global cooperation, though, Mozambican authorities cannot provide for the well-being of a significant proportion of its population.

Despite the great number of NGOs assisting within the country, their services have not adequately addressed the vast problems deriving from landmines and UXOs that affect the state. The Catholic University of Mozambique in the Nampula-Rapale province conducted a study revealing that only 37.5 percent of the Mozambican public knew of NGOs (Lalá and Ostheimer, 2004: 29). The fact that over half the population does not even know of NGO presence indicates a lack of awareness among Mozambicans and points to a need to increase public visibility of these landmine removal and humanitarian aid services. Mozambicans must first be cognizant of the presence of these demining organizations before they can pledge support to help with the CND-managed demining efforts.

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<sup>13</sup> Perhaps other unofficially registered NGOs, however, perform services within Mozambique as well.

<sup>14</sup> Mozambique invests resources proportional to its economic status.

#### 4. One Square Kilometer at a Time

Complexities abound when dealing with landmine removal and peace building. Landmines are heartless killers. They do not respect cease-fires nor do they distinguish between hostile soldiers and passive civilians (Cameron et al., 1998: 2). No instantaneous solutions prevail to address the landmine and UXO quandary affecting nations emerging from hostile, war-ridden statuses, Mozambique included. Sadly, any measures implemented to produce peace for the millions of Mozambicans living in fear of landmines and UXOs must more efficiently conquer the obstacles of cost and time.

It costs about \$3 to \$5 to manufacture a single landmine, yet it costs between \$300 and \$1,000 to remove one landmine (Pequenino, 2001: 42). Because Mozambique lacks much of the technology necessary to detect and remove mines, the average cost of removing one mine hovers more around \$963 (Matusse, 2001: 53–54). As of 2002, Mozambique had received only \$25 million in mine action funding, one-tenth of what the country needed to clear its most debilitating mine fields (Monin and Gallimore, 2002: 124). In addition to this lack of funding, donor governments aiding with demining in Mozambique have contractual strings attached to their moneys, causing the Mozambican government to change its policies to appease investors (Matusse, 2001: 63). Demining is consequently not just about a multilateral effort to help the innocent Mozambican civilian victims. Rather, it involves politics in that those states and other actors pouring investments into the country want to clear landmines also to support infrastructures that will return benefits for the investors. Although the interest of Mozambicans is considered, it is only one factor that donor governments consider. Increased values should be allotted to securing meaningful physical, socioeconomic, and cultural peace for the Mozambican people. Economic growth, stability, and eventual international trade will result from a stable state where a single, legitimate authority holds the monopoly over violence. Priorities must focus on peaceful state-building first, and only then should those international actors funding demining efforts consider exploiting the growing Mozambican economy.

Moreover, statistics illustrate a tragic fact that accidents occur with about one out of every one thousand to two thousand mines cleared. Accordingly, should efforts to manually clear landmines increase by fifty-fold, accordingly 2,000 mine clearers a year would suffer death and injury (Rutherford, 2004: 56).<sup>15</sup> Thus a patient approach to demining must be adopted. After all, people cannot reconcile the horrors of 30 years of war instantly. Peace-building is a long, tedious process.

If the traditional paradigm of security is adopted, Mozambique has successfully negotiated a transition to peace. Absent are the days of the states' liberation war and subsequent civil war between the feuding Marxist and democratic parties. Nonetheless, this state-centric

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<sup>15</sup> Indeed, in Kuwait alone, over 100 international mine clearance experts have been killed clearing mines since the end of the Gulf War in 1991 (Rutherford, 2004: 56).

approach does not suffice. A broader notion of human security encompassing personal, economic, social, cultural, and political facets must be employed when scrutinizing the presence of peace in Mozambique. Using such rhetoric, one cannot tell Mozambicans living in daily fear of deadly landmines that peace prevails. Yet peace may be on the horizon for this historically war-possessed state, provided that international actors working under the ICBL combined with Mozambican authorities augment their efforts until the landmine situation in Mozambique exists only as lamentable history, not as a brutal reality.

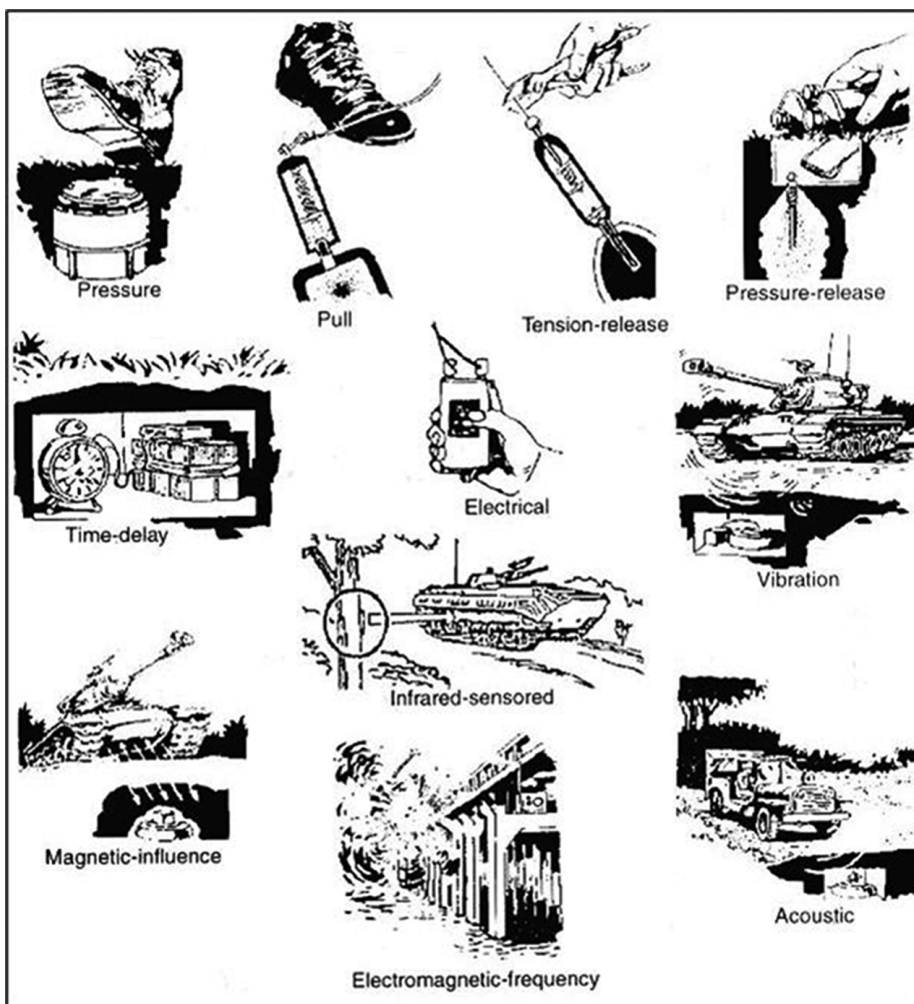
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## Appendix A: Landmine Triggers

The following diagram illustrates the various types of triggers that can activate both anti-personnel and anti-tank landmines. Several of these landmine types were found buried and activated in Mozambican soil (Küchenmeister, 1999: 11).





## Appendix B: Landmine Manufacturers and Models

The following lists the various types of anti-personnel and anti-tank landmines recovered from Mozambique based on the state manufacturing said mines (Küchenmeister, 1999: 16).

### Manufacturers and Models: Antipersonnel Mines

#### Belgium

PRB M409

#### Bulgaria

PSM-1

#### China

PPM-2

Type-72a

#### Czech Republic

PP-MI-SR-II

#### France

M59 France

#### Germany

DM-11

DM-31

PPM-2

#### India

M 14

#### Italy

VAR-40

VS-50

VAR-100

#### Portugal

Black Widow

Dancing Mine

M/966

M/969

#### Russian Federation

MON-50

MON-100

OZM-3

OZM-4

OZM-72

PMD-6

PMN

PMN-2

POMZ-2

POMZ-2M

#### South Africa

Claymore-Type

M2A2?

Mini-Claymore

No.69

#### United Kingdom

No.6

#### United States

M-14

M16A1

M16A2

M18A1 Claymore

#### Yugoslavia

PROM-1

#### Zimbabwe

Ploughshare

RAP-1

RAP-2

### Manufacturers and Models: Antitank mines

#### Russian Federation

TM-46

TM-57

TM-62D

TM-62M

TM-62P

TMK-2

# Forgiving Self: The Role of Imagined Interaction in Forgiveness

Emily S. Trammell

Katie was so angry at her mother. Why did she have to lock her keys in her car? Why was she the one who had to come to the rescue? She was just about to fall asleep and was not in a good mood in the first place.

She knew her anger that day had hurt her mother. "I'm really sorry, Mom," Katie said later that night. "It's okay," her mom replied. Katie knew her mother had forgiven her, but she did not know how this seemingly simple transgression would follow her for years to come.

*Forgiveness* is a word that is used very frequently in the American culture. People hear it almost daily in some context or another—whether it is, "I forgive you," "I can't believe she forgave him," or "This deed is just unforgivable." In fact, Americans hear this word so often that sometimes they do not stop and think about what the term actually means. Is it just a word? Is it a feeling? Is it a noun or a verb, meaning is forgiveness something people achieve or something in which they actively engage? Because our society and religious institutions have deemed forgiveness as essential, it is vital that people understand its meaning and why its process is employed.

Researchers have often noted that it is easier to define forgiveness, not in terms of what forgiveness *is*, but rather what forgiveness *is not*. Waldron and Kelley (2005) demonstrate that forgiveness is not an automatic fix to a relationship in trouble; in fact, even when forgiveness is granted, the level of intimacy may be reduced or the relationship may be ended altogether. Forgiveness is also more than just a simple apology (2005). Later research from these same authors (2008), asserts that forgiveness is not pardoning, forgetting, condoning, excusing, or denying a transgression—all of which are common beliefs. For the purposes of this study, the following definition of forgiveness will be used:

Forgiveness is a relational process whereby harmful conduct is acknowledged by one or both partners; the harmed partner extends undeserved mercy to the perceived transgressor; one or both partners experience a transformation from negative to positive psychological states, and the meaning of the relationship is renegotiated, with the possibility of reconciliation. (2008, p. 3)

Furthermore, these researchers show that forgiveness is a relational process that involves both the cognitive and emotional aspects of the body; forgiveness is an individual perception.

Because forgiveness is such an integral part of life, the researcher of this study wanted to analyze the ways that people achieve and experience forgiveness. Therefore, a qualitative study was conducted to begin answering questions about the connection between the

forgiveness process and imagined interactions and ultimately, using Katie's example from earlier, to determine whether or not a person can forgive by using his or her imagination.

## Review of Literature

Now that the definition of forgiveness has been established and the researcher's study has been introduced, it is important to delve deeper into the forgiveness process. First of all, for such a study it is essential to note why forgiveness is necessary. In other words, why do people engage in forgiveness? According to research by Kowalski, Walker, Wilkinson, Queen, and Sharpe (2003), people in close relationships say and do things that often are hurtful (as cited in Bachman & Guerrero, 2006). Therefore, people utilize the process of forgiveness when such a hurtful deed, or transgression, has been committed in a relationship (Waldron & Kelley, 2008). In fact, these authors (2005) assert that forgiveness is essential in restoring damaged relationships. People also use forgiveness as communication strategies in relationships where a transgression has occurred. For instance, people often forgive in order to reduce uncertainty in a relationship or to save face (2005).

When employed, forgiveness has proven to have positive effects in relationships. Studies show that when people explicitly acknowledged that a transgression had been committed, offered nonverbal assurance, and suggested compensation for the wrongdoing, then the relationship recovered (Waldron & Kelley, 2005). Granting forgiveness also lifts emotional burdens, helps people regain spiritual footing, and presents a feeling of relational justice (2005).

It is important to note that several models that outline the main components of forgiveness have been presented. Kelley (1998) proclaims that there are four main parts of forgiveness; they are (1) the nature of the relationship between the victim and the transgressor, (2) motivation for the victim and the transgressor to forgive, (3) communicative strategies employed by the victim and the transgressor, and (4) the relational outcome of the event (as cited in Szmania, 2003).

As has been demonstrated by the research described, scholars know much more about why people forgive and the results of forgiveness in relationships than they do about *how* forgiveness is actually shown (Merolla, 2005). In other words, much research has been conducted in regards to Kelley's first, second, and fourth component of forgiveness. People fail to understand, however, that communication, the third component, plays an essential role in the forgiveness process too. Waldron and Kelley are two of the most prominent scholars that have conducted this aspect of research and produced results on the communication of forgiveness.

Kelley (1998) shows that people can express forgiveness either directly, indirectly, or conditionally (as cited in Merolla, 2005). A direct approach to seeking forgiveness is one in which either the victim or the transgressor explicitly communicates that a wrongdoing has occurred, whereas an indirect approach to seeking forgiveness is one in which forgiveness is sought via nonverbal communication or implicit tactics (Waldron & Kelley, 2005). As the name would imply, a conditional approach to seeking forgiveness is one in which the transgressor puts conditions on the event of forgiveness. For instance, the transgressor might say, "If you forgive me, I promise I will never do this to you again."

Waldron and Kelley (2008) also expanded on the third component of forgiveness by identifying six communication processes that are key in negotiating forgiveness. Communication is used to (1) reveal and detect transgressions, (2) manage emotions, (3) make sense of the transgression, (4) seek forgiveness, (5) grant forgiveness, and (6) negotiate the relationship. These steps are integral.

Thus far, all the discussed aspects of forgiveness suggest that forgiveness must be relationally communicated between two people in order for the process to take place. Although this is true—forgiveness is often a highly interactional interpersonal process—there are also instances in which a transgressor has to learn to forgive him or herself. Such was the case with Katie in the opening scenario. In instances like this, the imagination plays a huge role in the forgiveness process.

The imagination is an intriguing part of the human mind. People often neglect to realize the importance that it plays in everyday living situations—especially in our inter- and intrapersonal communication scenarios. Communication researcher James M. Honeycutt has studied this phenomenon and developed his theory, Imagined Interaction Theory, in which he reveals the role that mental representations take on in relationships and communication.

### **History of Imagined Interaction Theory**

The concept of imagined interactions (II) is rooted in the research of symbolic interactionists and phenomenologists (Zagacki, Edwards, & Honeycutt, 1992); paired with research by Mead (1934), their studies show that as actors in communication, people use internal dialogues in order to produce alternative endings in scenarios in which they are involved (as cited in Zagacki et al., 1992). The symbolic interaction perspective yields the idea that having internal dialogue helps grow and maintain the definition of self, others, and situation (Rosenblatt & Meyer, 1986). Also, early research shows that “actors envision desirable and undesirable future states of affairs and imagine ways in which to obtain or avoid these states” (Zagacki et al., 1992, p. 57). Initially in developing his theory, Honeycutt spent time researching the relationship between imagined interactions and personality characteristics, gender differences, marriage types, and relational quality (Baxter and Braithwaite, 2008). Particularly, the author looked at characteristics such as activity (how often IIs are experienced), pleasantness (how enjoyable IIs are), discrepancy (whether or not IIs are different from their real-life counterparts), self-dominance (that the individual self dominates the communication of the II), proactivity (whether or not the II occurs before a real-life interaction), retroactivity (whether or not the II takes place after a real-life encounter), specificity (the quantity of detail involved in an II), and variety (the amount of distinct topics and partners involved in an II) (Zagacki et al., 1992).

### **Definitions of Imagined Interactions**

In order to help understand the fundamental elements of the Imagined Interaction Theory, it is vital to define an II. According to researchers, there are several definitions of IIs, although all are very similar. Rosenblatt and Meyer (1986) performed some of the earliest in-depth research in regards to II. According to their study, imagined interactions are simple “self-controlled day-dreams” or “mind-wandering” experiences that “may be fragmentary or extended, may ramble,

stay on track, or recurrently go over the same matter” (p. 319); frequently they occur between an individual and someone who plays a significant role in his or her life, most often a family member (1986). Furthermore, Rosenblatt and Meyer suggest that when IIs involve a two-person encounter, the interaction may be one-sided (with one person doing all the talking while the other listens passively) or transactional (where both parties actively engage).

Honeycutt, Zagacki, and Edwards (1989; 1989–1990), on the other hand, describes II more complexly as “a process of social cognition whereby actors imagine and therefore directly experience themselves in anticipated and/or past encounters with others” (as cited in Zagacki et al., 1992, p. 57). This definition shows the clear relationship that exists between interpersonal communication and social psychology and cognition and demonstrates how IIs act as a link between intrapersonal and interpersonal communication (Bevan, 2005). All in all, when studying the Imagined Interaction Theory, it is vital to understand that “imagined interactions afford actors opportunities to consider (and even mentally envision) the act of discoursing with others, to anticipate and react to their responses, and to assume others’ roles” (Zagacki et al., 1992, p. 58).

### **Characteristics of Imagined Interactions**

Research results indicate that certain characteristics hold true for all IIs. For example, IIs can occur both consciously and unconsciously (Zagacki et al., 1992). Research suggests that when people have imagined encounters with others they often realize that these are simply imagined; however, this awareness is not great enough that people actually remember the imagined conversations they have even moments after they occur (Rosenblatt & Meyer, 1986). This means that, on average, people engage in IIs so frequently that they forget they have them or do not place them as an “out of the ordinary” pattern of daily life.

It is also important to note that although IIs can take place both before and after a real encounter, most IIs occur beforehand. IIs are seen as less functional for people who are classified as lonely as well (Zagacki et al., 1992). In fact, Carlson (1988) literally claims that IIs are dysfunctional for lonely people.

Research also suggests that just like with any real-life interaction, IIs can be equally pleasant or unpleasant (Carlson, 1988). For example, women report that they experience more frequent and more pleasant IIs than men do, which interestingly parallels actual communication encounters (Zagacki et al., 1992). Additionally, as one would assume, unpleasant IIs are often linked to decreased communication satisfaction and with negative emotions (Berkos, Allen, Kearney, & Plax, 2001). However, what makes an II unpleasant? Research suggests that IIs become unpleasant when individuals frequently experience imagined encounters that contradict or deviate from their actual interactions; these people demonstrate more anxiety in both real life and in their IIs (2001).

### **Types and Functions of Imagined Interactions**

Collective research has shown that two main types of imagined interactions exist: proactive and retroactive. As was mentioned before and as the prefixes would suggest, a proactive II takes place when individuals imagine what they would like to say or take place in a future

interpersonal encounter, whereas a retroactive II occurs when individuals think back on what they should have said or done in the encounter (Berkos et al., 2001). It is extremely important to note, as Kossolyn & Pomerantz suggest (1977), that when looking at the main types of IIs, that both nonverbal and verbal imagery is accounted for (as cited in Zagacki et al., 1992). However, it is vital to understand that verbal and nonverbal—especially in regards visual imagery—information in IIs play two very distinct functions in the communication process (1992).

Researchers have proven that these two types of IIs serve a great variety of both interpersonal as well as cognitive functions in the communication world (Zagacki et al., 1992). Allen and Edwards (1991) assert that people employ IIs as a means to prepare for future encounters with others, as a form of catharsis to relieve stored-up emotional tensions, and as means of self-awareness and of clarifying thoughts and emotions (as cited in Berkos et al., 2001). One study even mentions that one function of IIs is to assist individuals in making their communication bolder (Honeycutt, McCann, & Caraker, 2008). This study asserts that society often expects people to talk or communicate in a certain manner, but that people can be more liberal and bold when talking in their imagined encounters.

In addition, Honeycutt (2002) also mentions that IIs serve the purpose of maintaining relationships, adding humor in marriage, managing long-distance relationships, providing communication compensation within the relationship when no real interaction takes place, and aiding in conflict resolution and management (as cited in Bevan, 2005). Similarly speaking, a study was carried out in which the role of IIs was tested in situations in which norms were violated. This concept is actually very important in the forgiveness process. Interestingly enough, people were more likely to deal with conflict caused by norm violation via II than to deal with the norm violator directly (Berkos et al., 2001). However, it is important to note that an imagined encounter cannot take the place of an actual encounter (Rosenblatt & Meyer, 1986).

In the past, several studies have been conducted that measure the results of the functions that IIs serve in interpersonal relationships. Gergen (1987) concluded that individuals who think about “imaginal relationships” often experience a greater sense of relational well-being and security, thus fulfilling the relationship maintaining function (as cited in Zagacki et al., 1992). Caughey (1984) also reported that people who thought about recent important conversations experience various emotions of catharsis (as cited in Zagacki et al., 1992). Very similar to Caughey’s research, Edwards, Honeycutt, and Zagacki (1988) concluded that, in general, IIs evoke a strong sense of emotional arousal (as cited in Zagacki et al., 1992). According to earlier research done by Honeycutt, Edwards, and Zagacki, individuals who actively engage in many IIs and who have IIs that are similar to real-life interactions often report having experiences of more pleasant emotions, suggesting that not only are IIs a way in which emotional catharsis and arousal are employed, but also that IIs play a huge role in communication compensation when no real interaction exists (Zagacki et al., 1992).

Naturally, one might ask, “Can people use IIs in the forgiveness process?” Inferences from research show that the answer is yes. For instance, in circumstances in which an interactant involved in a transgression situation is not emotionally or physically available (such as because he or she has passed away), IIs could be used in order for the forgiveness process to

actually take place (Rosenblatt & Meyer, 1986). In fact, these authors suggest, “One imagines interactions with an absent person as though they were occurring now” (p. 320). In other words, either the victim or the transgressor (whichever interactant is still available) could use IIs to experience or grant forgiveness.

These authors also give other suggestions that link IIs with the forgiveness process. They assert that maintaining reality comes by recalling past conversations and, by using these instances, people imagine new interactions (Rosenblatt & Meyer, 1986). These IIs aid in past events, such as family arguments, by reminding an interactant of what actually happened and what other course of action could have been taken in order to achieve the best outcome in the situation (1986). Furthermore, IIs prove to be especially helpful when people are dealing with issues that are not explicitly solvable and in situations in which shame is involved (1986). Both of the above cases are often linked with the need for forgiveness. Thus, it can easily be inferred that the process of forgiveness may be completed via usage of IIs.

### **Application of Imagined Interaction to Daily Life**

Previous research has proven the theory of II to be applicable in many practical ways in daily life circumstances. Honeycutt (2002) gives specific examples of real-life scenarios that have been studied alongside IIs; they are terminal cancer patients, loved ones who have passed away, homeless women, forensic competition, supervisor-employee relationships, conversation, deception, and prayer (as cited in Bevan, 2005). Research also suggests that people frequently apply IIs to daily life situations when trying to infer about others’ thought processes and to understand them better. Berkos et al. (2001) write, “Berger (1997) pointed to imagined interaction activity as a useful mechanism for investigating how individuals process communication relevant information when making inferences and gaining understanding about others” (p. 292). Furthermore, many people often employ IIs in their daily decision-making processes—especially in highly emotional instances (2001). As research suggests, IIs can be applied to many aspects of daily life; however, how useful IIs are in the daily process depends solely on individuals taking responsibility for their actions and being honest with themselves (Rosenblatt & Meyer, 1986).

Honeycutt, McCann, and Caraker (2008) briefly examine how the Imagined Interaction Theory directly links with the concept of forgiveness. However, it is important to note that, while this research is not extensive, most research about IIs can be easily and reasonably applied to the forgiveness process. Through this study, the researcher sought to answer two research questions. RQ 1: How do IIs aid in the forgiveness process? More specifically, the researcher asked in RQ 2: What is the exact role that IIs play in the transgressor’s process of forgiveness when he or she is no longer able to interact with the victim because the victim is deceased and not physically available for real-life communication?

### **Description of Method**

The research questions were answered through participatory photography and interview methods. This is an interpretive methodology yielding qualitative results.

Wang, Burris, and Xiang (1996) note that the participatory photography method essentially takes a potential study or research question in which it answers by allowing people to document and co-share their own stories via photos (as cited in Singhal, Harter, Chitnis, & Sharma, 2007). In essence, this method gives participants power by allowing them to communicate and share their own realities (Clover, 2006). When individuals engage in a participatory photography study, they combine a sense of introspection, reflection, and action that is then analyzed along with some form of accompanying narrative with the photos (Singhal et al., 2007); in turn, this allows the researcher to make connections and draw conclusions about the results of the study (2007).

Singhal et al. (2007), who conducted an in-depth study in India using participatory photography, concluded that such a methodology gives voice to stories that were rejected or silenced in the past and, furthermore, each photo's story literally provides people with the opportunity to analyze and face issues that meet them head-on. Although perhaps it cannot be asserted that *all* studies that use participatory photography methodology tell a once "silenced" story, it is important to note that this method has been proven as a great outlet for such communicative scenarios.

When employing participatory photography as a method of study, researchers often must ask themselves *what* they are looking/need for participants to photograph. In many instances, the answer is metaphorical symbols, especially of abstract concepts (Douglas, 2007). It is important to note that participatory photography is still in early developmental stages when it comes to usage in teaching and learning in the classroom (Miles, Kaplan, & Howes, n.d.). However, research asserts that this type of methodology shows great promise and potential in engaging and influencing research opportunities in a way that traditional methods often fail within the educational setting (Miles et al., n.d.).

In this particular study, the researcher answered the research questions by completing a pilot study of forgiveness using this method of participatory photography and by conducting an interview. One female college student signed an informed consent and participated. This simply means that the researcher found a participant (a college female) who has experienced the forgiveness process and who agreed to photograph metaphors of forgiveness.

After the participant shared the photographs of forgiveness, an unstructured interview was conducted at her home. In this interview, the participant was able to share her journey through forgiveness—a struggle in which she was the transgressor who eventually had to learn to forgive herself—as well as the meaning behind her metaphorical and symbolic photographs. She was asked to explain the nature of the event that led her to delve into the forgiveness process; after listening to the participant's narrative, the researcher asked probing questions in order to obtain all of the pertinent information for this study. The researcher numbered each of the participant's fourteen photographs, went through each number, and asked the participant to explain how each conveyed the concept of forgiveness to her. Throughout the interview, the researcher took written notes in order to record all the necessary data.

In summary, this was a descriptive study that allowed the participant to create and explain her story through use of metaphor, symbol, and narrative.



## Results

### Interview Data

For the purposes of this study, the participant has been given the pseudonym Katie, and this is her story according to her personal narrative:

Five years ago during the fall of 2003, Katie experienced what would be considered a normal day for any teenager. After school, she went to her older sister's house. Because she was dealing with a case of PMS, Katie was not in a good mood. She was just about to fall asleep when her mom, Mae, called. Mae had locked her keys in the car and was stranded at the bank. Mae asked if Katie could come and help her.

Katie was angry. Despite her anger, she got in her car to go get her mom. "When I got to the bank, I remember seeing her standing there. She had a 'we all make mistakes' kind of smile on her face," Katie said. "My face must have shown my anger because my mom's smile immediately left her face. I don't remember if she said anything to me, but she got in her car and I got in mine, and we headed for home," Katie added.

At home, Katie remembers overhearing her mom talk to her dad. Her mom was crying as she told her dad about the situation earlier in the day. "She just made me feel so stupid. I don't know what I did wrong," Mae said.

As Mae made dinner that night, Katie remembers feeling looked down upon. "She wasn't mad," Katie said. "She was just *hurt* and you could see it." Later in the evening, Katie went to visit her mom while her mom was in her bedroom. Katie commented that her mom had been sick, and because of health reasons, her mom and dad slept in separate bedrooms. "As I went to see her, I felt so bad about what had happened at the bank. I told her, 'Mom, I'm really sorry that I was so angry,'" Katie said. She finished by saying, "My mom forgave me, but I could still tell that the *hurt* was there."

Life went on that fall for Katie and her family. After Christmas, Mae was still having health issues. Because she was still ill, she went to Wisconsin to stay with an aunt and uncle who thought they could help her get better. Katie remembers the day that her mom left. "I was getting ready for school and had just put my makeup on," Katie told. "I started to tear up at the thought of my mom leaving. Then she turned to me and said, 'Don't cry, baby. You'll mess up your makeup.'" Katie did not know it at the time, but that was the last time she would ever see her mother.

On January 29, 2004, Katie came home from school. She received the news that her mom had passed out. Her dad had rushed to Wisconsin to be with Mae; the rest of the family and close friends went to Katie's sister's house to wait for any news. Katie and her sister decided they were going to do whatever it took to get to Wisconsin so that they could be with their mom.

At 11:30 p.m. the phone rang; it was her uncle. Katie was in the bathroom and her sister answered. The voice on the other end said, "They don't think your mom is going to wake up." As Katie walked out, she heard her sister ask, "What do you mean?" With realization of the gravity of the event, Katie dropped to her knees and cried, "No."

Katie did not understand why this was happening. There was so much she wanted to say—so much she was sorry for. Katie felt like making her mom cry that day at the bank was the last act she left her mom with before she died. She said, “I know my mom forgave me, but I never got the chance to go through the process of making it up to her.”

After her mom’s death, Katie struggled with severe guilt, feeling horrible, and just beating herself up over this transgression. She said, “I finally had to go through the journey of forgiving *myself*—of accepting my role in the transgression and in the forgiveness process. Deep down, I knew that this wasn’t the last thing I left my mom with. My mom knew how much I loved her.”

Katie told the researcher that her imagination has allowed her to maintain a relationship with her mom, both before and after she passed away. Katie commented, “Just the fact that she was away for about a month or so before she died, made me start to imagine what I could or would have done if we were still together. Sometimes I even imagine that I was at her bedside when she died. I talk to her, tell her how much I love her, and how sorry I am for hurting her. In fact, I still to this day imagine interacting with my mom.”

As part of the interview, the researcher shared with Katie the definition of forgiveness as provided by Waldron and Kelley (2008). The researcher asked Katie if she had completely forgiven herself for this transgression against her mother. Katie answered, “Yes, I have forgiven myself, but I still experience guilt and doubt about it all. Every day I’m constantly reminded that my mom is not here with me, and that’s a highly emotional feeling. So, even though I’ve been able to forgive myself, the feelings of grief and emotions will always be there because I’m always reminded of her absence in my life. And, with those feelings, comes the regret too.”

When the researcher asked Katie if she thought that this process of forgiveness had taken place before or after her mom passed away, Katie replied, “I honestly think she had forgiven me while she was still alive, but, like I said, that still does not take away the fact that each day I’m constantly reminded that my mom isn’t here. So, sometimes I imagine interacting with her. It helps when my doubts and grief that I mentioned before pop up. Actually imagining being with her helps me deal with that grief too—it’s cathartic. It helps me move on in my life.”

Finally, the researcher asked Katie to describe her own forgiveness process in reference to this transgression. Katie said, “When the doubts arise about this instance between my mother and me, I begin by reimagining what actually happened in the situation. Then, I realize that, yes, I messed up, but I correct the thought that I’m a bad person for making my mom cry. She’s my mom, and she loves me. Finally, I go back to my imagination again. I imagine I’m with my mom on her deathbed and that I tell her everything on my mind—and that she would just know and understand it all.”

There were two very interesting facts that the participant disclosed to the researcher. First of all, Katie told of a poem that she wrote in 2005, a year after her mother had died. When asked why she wrote it, Katie answered, “I wanted to get my feelings and grief out—to verbalize what actually happened in this transgression and see it on paper. In her poem titled “Regrets,” Katie included actual imagined dialogue with her mother. She wrote

“I locked my keys in the car.”  
“God, you’re so stupid.”  
“Hey, what’s for dinner?”  
“I, uh, don’t know,” Tear stained face . . .  
Walks away  
“I’ll miss you, I love you”—can’t cry  
Don’t wanna mess up make-up for school.  
“I know, baby. I love you too.”  
Time passes, calls on the phone . . . short  
Then, passed out; *NO*; not breathing;  
*NO*; in coma; *No*; dead at 12 sharp; no  
Lord, Jesus, God, my Savior . . . *NO*  
World ends; I wish  
Life goes on. Dammit  
The stories, they were true.  
There’s something missing, a void recently vacant.  
What’s not there?  
A Mother  
And so I lay me down to sleep,  
I pray the Lord my soul to keep,  
For if I die before I wake . . .  
If I only would  
If I only would.

By writing this poem, Katie said she realized that she had melded together the situation at the bank and her mother’s death—the two events had been fused together in her mind. This poem had been her starting point in forgiving *herself*; it was only after she wrote the poem that she was truly able to complete the journey.

The second interesting thought that Katie told had to do with self-disclosure of this transgression. Although she mentioned it once to her sister, she said, “No one has any idea of the extent of what I felt because of this situation.” Because of this, she had to deal with this

circumstance completely on an individual basis. No one could say, “Katie, don’t be silly . . . It wasn’t a big deal . . .” simply because no one knew about it. She truly managed her feelings and emotions via IIs with her mom.

### **Photograph Data**

The participant took fourteen photographs that displayed metaphors of forgiveness to her—especially in reference to the specific transgression against her mother at the bank. The participant was asked how each photograph conveyed forgiveness to her. Her answers and descriptions of the photos are as follows:

Photograph number one was a calendar. The participant said it signified that the process of forgiveness takes time. It also served as a metaphor, suggesting that the process of forgiveness compares to the seasons of the year—there are phases and steps that one must cycle through. She said that this photo also illustrated that the situation of forgiveness was always changing; she has to come back to the situation, reevaluate its meaning, and then manage her feelings accordingly.

Photograph number two was a clock made of wood. Like the first photo, this showed how forgiveness is a process that takes time. However, the participant mainly discussed the importance of the ripple effect that appears in the wood. The process of forgiveness, she commented, is similar to this ripple effect. It starts as one little thing that booms; eventually it affects the relationship and all a person does.

The participant grouped pictures three, nine, ten, and eleven together. For photograph number three, Katie mentioned, “It’s a picture of this vital plant that reaches everywhere—even though it’s growing out of dead leaves. To me, forgiveness is similar. It’s about taking a difficult situation and rising in spite of it and going on from there.” Pictures nine, ten, and eleven were also plants. The participant said these photos symbolized growth. She said, “Like plants begin as tiny seeds, forgiveness starts as something small and then it starts to grow. When you come to terms with the process, you can grow into something as beautiful as these plants.” Also, Katie mentioned how forgiveness is like the sun and water that shape the plants in the pictures. “If you think about it, when plants don’t have sun and water, they begin to droop. However, when they have these things, their shape goes a different way. Forgiveness does that too—it shapes who you are,” she said.

Photograph number four was a picture of small figurines that the participant had received as gifts. She told that this photograph symbolized her own personal process of forgiveness. “I remember getting each one of these; this picture really signifies memories and the perception of memories to me. I think perception is a big part of forgiveness, and memories are necessary to enable forgiveness and work through the transgression,” she said.

Photograph number five was of an empty chair sitting on a front porch. Katie told the researcher, “This picture paints an empty, desolate setting. Sometimes I just feel empty inside, which ultimately spurs on the process of forgiveness for me.”

Photograph number six was a key unlocking a door. “This picture is pretty simple. Forgiveness is key to opening other doors in life—especially to other relationships,” she remarked.

Photograph number seven was of picture frames sitting along a mantle. Katie said, “I took this picture because, for me, I had to *picture* the situation at the bank and my mother’s death in another way—they were two separate events. It was necessary in my personal journey through the process of forgiveness.”

The participant also grouped photographs eight and twelve together, both serving as reminders of her mother. Photograph number eight was a picture of her mom’s jewelry box, and number twelve displayed a dried bouquet of flowers, which is something her mother loved making. “These things remind me of my mom, which brings back that grief that she’s not here. When these constant reminders are all around me and when they cause me to always grieve her absence, it just makes that process of forgiveness necessary.”

Photograph number thirteen was of a pile of different sized rocks, which symbolized the burden of forgiveness. Katie said, “When you don’t figure out the situation, you just experience this heavy burden. However, when you do figure it out, you feel like this weight has been lifted.” She added, “I just love this picture. There are so many rocks of so many different sizes. Forgiveness is more or less the same. There are so many different aspects and burdens that lead to forgiveness. It’s a layered process. It’s both an action and a state of mind—it’s a verb and a noun. It’s about having to deal with these burdens and maybe keeping some and throwing others out.”

Finally, the fourteenth photograph was of a rainbow. The participant told the researcher, “I’ve always loved rainbows. To me, they symbolize a new beginning every day. The rainbow shows that forgiveness is not something you just work through once and are done with it . . . but you are constantly revisiting the situation and examining it. It’s a cycle, and I think we are better people for going through it.”

## Discussion

Much research exists in regards to the separate matters of forgiveness and the Imagined Interaction Theory. Although Katie’s situation cannot be directly related to every aspect that falls under these two concepts, her journey through forgiveness and the Imagined Interaction Theory can be linked in several ways. Her narrative and description of her photographs will be discussed separately in order to maintain clarity and to see how this three-way relationship exists between her story, the forgiveness process, and the Imagined Interaction Theory.

### Narrative

Many details from Katie’s story show how she truly experienced forgiveness as defined by Waldron and Kelley (2008). Once again, these researchers use the following definition:

Forgiveness is a relational process whereby harmful conduct is acknowledged by one or both partners; the harmed partner extends undeserved mercy to the perceived transgressor; one or both partners experience a transformation from negative to positive psychological states, and the meaning of the relationship is renegotiated, with the possibility of reconciliation. (p. 3)

Katie's journey to achieve this definition is unique. After she committed the transgression against her mother, she went to her and said she was truly sorry—Kelley's (1998) direct approach to seeking forgiveness); her mother said that things were okay. Although this acknowledgement of Katie's harmful conduct to her mother was sincere, and although Katie's mother extended undeserved mercy to her, Katie did not experience any of the latter part of this definition until over a year after the incident occurred. She did not experience a transformation from a negative to positive psychological state (It is important to note that according to this definition, only one partner in the transaction must experience this transformation. Mae is not physically available to attest to whether or not she experienced this transformation, so we can only judge whether or not forgiveness occurred according to Katie's testimony and her IIs), nor was the meaning of the relationship renegotiated, except in Katie's IIs.

It was only after Katie used IIs—Kelley's (1998) indirect approach to seeking forgiveness—that she was able to fully experience the entire concept of forgiveness according to these authors. First of all, Katie's IIs helped in assuring her that her mother forgave her for this transgression. Secondly, Katie's IIs helped her forgive herself for her wrongdoing. By taking a look at Waldron and Kelley's (2008) six key communicative steps in the process of forgiveness, it is easy to see how Katie employs IIs in every phase of this process, which ultimately shows how the previous two statements are true.

Waldron and Kelley's (2008) first step in the process of forgiveness is *revealing or detecting a transgression*. Katie told the researcher that whenever the situation with her mother at the bank pops into her head or she experiences guilt over the event, she must re-imagine what happened that day. Katie employs IIs in order to specifically go over what happened, what she did wrong, the hurt of the event, and so forth.

The second and third steps in the forgiveness process are *managing emotions* and *engaging in sense-making* of the event. Once again, Katie told how she uses IIs in order to complete these phases. For instance, initially Katie used her poem "Regrets" in order to complete both of these steps. To her, the incident at the bank and her mother's death had fused into one event. By writing the poem and re-creating the imagined dialogue and scenario with her mother, she allowed herself to manage her emotions and make sense of all her feelings on paper. Ultimately, Katie was able to reconstruct her state of mind via this poem; the transgression and her mother's death were two completely separate events, and this was the first time that Katie could truly see this.

Katie also engages in reframing her thoughts in order to complete the second and third phases. For instance, she uses reframing in order to come to terms with Kowalski et al.'s (2003) research that says that people who are in close relationships often hurt one another; this is more or less normal in relationships (as cited in Bachman & Guerrero, 2006). She constructs her thoughts to say, "Yes, I messed up in this situation, but I am not a bad person for making my mom cry. She is my mom, and she loves me. Deep down, I know this situation was not the last thing I left her with before she passed away. She had forgiven me for hurting her."

The fourth and fifth steps of the forgiveness process are *seeking forgiveness* and *granting forgiveness*. When she looks back on the day at the bank with her mother, Katie truly believes that her mother forgave her long before her death. However, Katie admits that sometimes

she has her doubts. When this happens, Katie imagines that she is at her mom's side before she dies; she tells her everything that is on her mind in regards to this transgression. She seeks her mother's forgiveness, and in return, her mother understands her feelings and tells her that everything is going to be okay; thus, forgiveness is granted to Katie.

Katie did not mention any way that she specifically uses II to complete the sixth phase of the forgiveness process, which is *renegotiating the relationship* between the victim and transgressor. However, during the interview, Katie did mention the fact that she thought that she had never gotten the chance to make up the incident to her mother before she passed away. The relationship was never directly "renegotiated" while her mother was still alive. Nevertheless, the relationship between Katie and her mother was renegotiated in Katie's imagination after she had successfully completed steps one through five in the forgiveness process. Also, after completing the phases of the forgiveness process, Katie conveyed that she transformed from a negative to positive psychological state—she felt better about the situation—thus fulfilling all of Waldron and Kelley's (2008) parts to the definition of forgiveness.

After viewing Katie's journey through Waldron and Kelley's (2008) steps of forgiveness, it is easy to see how her story affirms research of how forgiveness is both an individual perception and a cognitive and emotional process.

Most of this discussion has been in regards to how Katie's story corresponds with the given research on forgiveness. However, how it fits with the forgiveness process overlaps with much of the research on the Imagined Interaction Theory as well.

For instance, Katie's scenarios fit perfectly with what Zagacki et al. (1992) suggested based on the earlier research by Mead (1934)—people use internal dialogues in order to produce alternative endings in scenarios in which they are involved (as cited in Zagacki et al., 1992). Katie used IIs with her mom in order to produce the alternative ending of having a lifted burden—a peace of mind—in regards to the transgression against her mother. Furthermore, Katie's story can be directly linked to Honeycutt et al.'s (1998; 1989–1990) definition of II—"a process of social cognition whereby actors imagine and therefore directly experience themselves in anticipated and/or past encounters with others" (as cited in Zagacki et al., 1992, p. 57). Each time Katie revisits the day at the bank with her mother, she is imagining/experiencing a past event, which is consistent with the definition of a retroactive II (Zagacki et al., 1992).

Katie's story also relates to the research of *why* people engage in IIs. Allen and Edwards (1991) show that people use IIs as a form of catharsis in order to relieve emotional tension, achieve self-awareness, and clarify thoughts and emotions (as cited in Berkos et al., 2001). Katie mentioned how her poem, "Regrets," allowed her to do all of these things. For example, writing helped her express her feelings on paper and come to an understanding that the incident with her mother and her mother's death were in no way linked.

Most importantly, Katie is evidence that the answer is yes to the question "Can people use IIs in the forgiveness process?" Katie is a prime example of Rosenblatt and Meyer's (1986) research that IIs aid in past events, such as family arguments, by reminding an interactant of what actually happened and what other course of action could have been taken in order to achieve the best possible outcome of the situation. Katie told the researcher on

numerous accounts how she had to replay in her mind the day at the bank with her mother in order to fully remember the details of the transgression and to ultimately experience the forgiveness process. Furthermore, Katie told how remembering this event always brings back feelings of guilt and regret. Katie's usage of IIs is consistent with research that shows that people often imagine conversations in which shame is involved (1986).

Honeycutt (2002) also suggested answers to how people can use IIs in the forgiveness process. He said that people employ IIs to serve as communication compensation within a relationship when no real interaction takes place; IIs serve as a means to maintain such a relationship (as cited in Bevan, 2005). It is clear that Katie used IIs to communicate the forgiveness process with her mother because her mother was not there to actually interact with; by doing so, their relationship was maintained, to a degree, even after Mae's death. As has been mentioned several times, Rosenblatt and Meyer (1986) also demonstrate that IIs are used when one person is not physically or emotionally available for interaction; instead, the other interactant imagines conversations with the absent member as if they were occurring in the present. Katie is an excellent example of this. She uses the II of visiting her mother at her deathbed in order to experience forgiveness; it is as if she can still interact with her mother now.

The given research asserts that the utility of IIs depends solely on individuals taking responsibility for their actions and being honest with themselves (Rosenblatt & Meyer, 1986). For Katie, engaging in IIs has been very useful. They have allowed her to make sense of the transgression against her mother and to take the necessary actions—seeking and receiving forgiveness from her mother, which, in turn, allowed her to forgive herself for this deed. Ultimately, Katie's use of IIs has allowed her to rid herself of guilt and to keep living her life, despite the grief caused by her mother's death.

### Photographs

Katie's photographs of forgiveness display several communication and forgiveness themes and, in many ways, relate to the previous research mentioned. For instance, photo number one of the calendar signified that forgiveness involves a series of steps and phases. This correlates to Waldron and Kelley's (2008) six steps of negotiating forgiveness, which Katie completed in order to forgive herself.

Photos three, nine, ten, and eleven of the plants are very similar to the first photo in terms of how they relate to forgiveness. Forgiveness is a process, and once a person goes through the steps/process, he or she grows into something beautiful. Katie's story conveyed this message. After going through the process, she had much more self-awareness and a very positive outlook on forgiveness itself.

Photograph number four of the figurines illustrates a common theme discussed in forgiveness—perception. Katie directly said that forgiveness is all about perception, or how you view the situation. It's an individual state of mind.

Photograph six of the key shows symbolism, which is a common element of communication research. The key in the photo symbolizes that forgiveness is essential in relationships.

Photograph seven of the picture frames is similar in the way that it is symbolic. Katie said she had to *picture* the situation at the bank and her mother's death in a different way—



that they were two separate events. This idea correlates to a common theme in communication, reframing.

Photographs eight and twelve of the jewelry box and dried flowers (both memories of Katie's mother) affirm research of why forgiveness is necessary. Both these items remind Katie of the grief she experiences when thinking about the transgression and her mother's death, which then prompts her to manage her emotions and uncertainty (both reasons forgiveness is employed) using IIs about these events.

Photograph thirteen of the rocks backs up Waldron and Kelley's (2005) study that shows that forgiveness lifts emotional burdens from people. Katie told the researcher that this picture illustrated the feeling that a weight had been lifted from her when she finally learned to forgive herself.

Finally, photograph number fourteen of the rainbow returns to Waldron and Kelley's (2008) six phases of negotiating forgiveness. For Katie, she mentioned how this process is a cycle. With her IIs, she goes through each of these steps again and again, revisiting and examining the transgression and ultimately cycling through the forgiveness process.

## Conclusion

In doing this study, the researcher hoped to answer the following question (RQ 1), "How do imagined interactions aid in the forgiveness process? More specifically, the researcher hoped to determine the exact role that imagined interactions play in the transgressor's process of forgiveness when he or she is no longer able to interact with the victim because the victim is deceased and not physically available for real-life communication (RQ 2). Overall, the research questions were answered. Imagined interactions have a potentially large role in the forgiveness process—especially when one of the interactants is no longer available to communicate. However, it is important to note the limitations of this study. This study was a pilot study where only one person was examined. Further research and repeated studies should be done in order to determine if these results are conclusive. Also, research should be conducted to see how imagined interactions affect the forgiveness process when *both* interactants are still available for communication.

Despite the need for future research, one thing is certain: Imagined interactions are a vital part of communication. They truly serve as a key element in linking inter and intrapersonal communication together in daily life scenarios. Katie's story truly can attest to that.

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# *The Metamorphosis of Single Sourcing: A Review of Literature*

Katie Wilcox

## **Abstract**

This literature review focuses on the technical communication practice of single sourcing and its change over the span of seven years. Single sourcing began as a practice followed by a few and practiced with many different methods. The changes associated with single sourcing require adjustment for technical writers and their supervisors. Although it may seem frustrating at first, eventually the change yields positive results for the work and workers. In the current year, research reflects an abundance of movement toward Darwin Information Typing Architecture (DITA), as it is the first widely used single-sourcing program.

Single sourcing is quite radical in the technical communication field and is changing the entire approach of technical communication. Writers have to transform their focus from an ownership-driven, project-by-project methodology to a broad, piece-by-piece, multiple-project and author output. More projects are shifting into compartmentalized topics that are much shorter, yet much more abundant. Under the single-sourcing model, writers must not view any large project as “mine” or “yours,” but must view each project as containing many separately authored pieces working together to create “our” project.

Single sourcing causes many supervisors to hear the cha-ching of a cash register as a means of increasing productivity and eliminating extra overlapping positions. It seems to be an answer for making fast, consistent, and quality products—an answer to the budget-challenged managers looking for ways to prune expenditures. Many technical communicators agree with these sentiments, seeing single sourcing as an elimination of the mundane and duplicated processes of the field; however, many other technical communicators approach single sourcing with dread and misgivings, viewing the change as constrictive and hassling. The final word has not been given for single sourcing as of yet, but the debate remains hot. Already in the seven years of reviewed literature, single sourcing has changed as a functional tool for the field of technical communication and, with each alteration of thought and process, has moved toward making technical communicators’ work more efficient and consistent.

## ***Single Sourcing Context***

Single sourcing stands as a convenience or a hassle depending on whom you ask. The technical communication field is divided on the topic. Some see it as ingenious—the ultimate

example of efficiency and conciseness—while some see it as a constraint and limit on creativity. This literature review explores the facts, trends, and opinions of single sourcing as it stands at the time of this paper’s creation.

The Society for Technical Communication’s (STC) Single Sourcing Special Interest Group (SIG) defines single sourcing as “using a single document source to generate multiple types of document outputs; workflows for creating multiple outputs from a document or database” (Williams 321). Single sourcing has many definitions that are explored by the following authors; however, the focusing and all-encompassing definition for the current purpose of this paper is that which is supplied by the STC Single Sourcing SIG. Understanding this definition and application requires technical communicators to adjust their writing process to a much more universally applied style and context. Writers must adjust their view of each piece of text as a part of a whole, and they must view it as an independent piece that may or may not have the same introductory or prefatory information in any given situation. This definition of single sourcing has two interpretations. Some organizations have “technical communicators use desktop publishing software to create a document, then reformat the document to create subsequent deliverables,” whereas others create all deliverables from a single information source, such as a single file or a multiple-file repository or database (Williams 321).

As any change in a field does, single sourcing has frustrated some and excited others. Many technical writers are still unsure of their final opinion of single sourcing, as it has only been broadly applied in the last seven years or so. The camps are divided, with many writers in favor of this shift and many writers in violent opposition. The following pieces of scholarly technical communication publications reflect the changes in the study of single sourcing and the writers who are participating.

## **Butland**

Philip Butland is a technical communication professional at Agilent Technologies, located in Germany. He, at the time of this cited 2001 article, worked on the design team of Agilent’s manuals and help files. He is a senior member of the STC Houston Chapter.

Butland’s February 2001 article, “Introduction to Single Source, Part 1,” is one of the earliest articles on the topic of single sourcing. He writes from the context of a newly formed concept of single sourcing and under the fresh perspective that single sourcing is a lasting methodology and not a temporary fad. Butland is an expert because he practiced single sourcing in his own professional life; even before the practice became common, he was a pioneer on the single-sourcing frontier. His definition of single sourcing is to “create manuals and help files from same source documents” and, more generally, using a “same source document to produce multiple versions in any medium” (para. 3). He acknowledges that technical writers must shift their focus to structuring information to apply in multiple contexts. Neutral language and presentation style provide a means of creating this multi-applicable information (para. 7). In his justification of single sourcing, Butland discusses cost and time-effectiveness of the practice, as well as the benefit of easy revision and updating, and consistency and accuracy of

information. As a means to adjust to this shift, he recommends chunking information to break up text into manageable and easily manipulated pieces (para. 8–9).

In opposition to single sourcing, Butland makes reference to the nature of the two main used mediums as not always supportive of using the same information and the reality of creating more work in the initial stages of a project (para. 13–14). The characteristics of manuals and help programs (the two main technical communication mediums) may impact the ability to use the same information for both. Because manuals are linear, a writer can assume that knowledge builds on itself throughout the document; however, a help function has no progression and is typically accessed in its context. Manuals are dependent on the user to locate the information through indices and furious page-flipping. Help programs cannot rely on previously learned information because an author can never assume how much prior information the user has read. Table and location references only function in a manual, and navigation can be a problem with Help programs. Help has minimal content, whereas manuals are extensive, covering every detail and facet of the product. To address this issue of single sourcing, technical communicators must adjust their writing in a medium-neutral way by creating a style- and multiple-medium applicable original source. Butland suggests writing in information segments that can be applied to the different media, with the addition of conditional text to fit the different gaps in each of the media. Although this requires an adjustment in thought process and requires a consideration of each sentence's broader impact on multiple types of publications, this would, in the long term, allow technical communicators to enjoy the benefits of single sourcing (para 15–23).

## Rockley

Ann Rockley is a much-cited author and expert in the research of single sourcing. As president of the Rockley Group, Inc., partner in SingleSource Associates, and associate fellow of STC, she has “an international reputation in the field of online documentation, content management, and Web-based learning” (Rockley 193). As part of her 20 years of professional experience, she was at the forefront of single-source work and remains a teacher of information design for multiple media and content management at the University of Toronto (Rockley “The Impact”).

Ann Rockley's authoritative May 2001 article, “The Impact of Single Sourcing and Technology,” discusses an emerging shift in focus for technical communication. Rockley notes that writers are less expected to have excellent communication skills and more expected to have technology skills (para. 2). Also, the traditional role for technical communicators has been replaced by several tasks such as “converting paper-based materials to web-based materials, tracking hyperlinks, manipulating graphics in paper and online, and handcrafting electronic materials” (para. 3). Unfortunately, even as this shift is occurring, technical writers are finding the technology they are forced to spend more time experimenting with is less tailored to their needs; they have to modify their tasks to fit the software rather than having the software fit their needs (para. 4). “Technology has also forced us to compromise the quality

of our materials due to the restrictions of the media . . . ” (para. 6). Some of the restrictions and issues with moving to strictly electronic sources are the loss of legibility of text and graphics and navigation issues.

Rockley classifies single sourcing levels into four levels: (1) identical content in multiple media, (2) static customized content, (3) dynamic customized content, and (4) Electronic Performance Support System (EPSS).

The first level of identical content in multiple media is where the same information appears in multiple media. The main issue with this level of single sourcing is that the same information may not relate across the different media; for example, PDF files are not as accessible for reading on the computer as they are on a print-out basis. Certain information stays limited by its medium (paras. 9–11).

The second level of static customized content is where the same core content is utilized in many products, with each product containing minimal amounts of specialized content that are built on the core content (para. 12). Some examples of category two single sourcing are as follows: multiple media output, multiple platform, product families, multiple information products, multiple audiences, and multiple releases (paras. 13–18). This level of single sourcing reflects a beginning shift away from traditional documentation organization (such as sections or chapters) to “object-oriented information” and motivates writers to create content with reuse in mind (para. 20).

The third level, dynamic customized content, is characterized with features such as logins, user profiles, user selection, and personalization (paras. 21–24). The beginning shift of the second category of single sourcing intensifies in this level because it moves further into object-based information design and requires researched information models that represent the way information should reflect users’ requirements (para. 26).

The last level, EPSS, consists of training material, usage questions, and reference materials and creates a direct communication between the users and the creators. In this level, not only do creators anticipate the needs of the users, they also follow up these predictions to ensure that products meet users’ needs (para. 27).

These levels each cause an impact and altered focus for the writers, and Rockley closes her article by discussing these effects. First, she notes that writers must approach projects with a team mind-set for development. This means that someone creates the core content and someone else manages where that content should or should not be included (para. 29). She makes the excellent point that single sourcing causes writers to separate the creation of input from the creation of output, but also recognizes that this change increases the scope—writing for multiple media and maybe even multiple types of users at once (paras. 30–32). Information designers become important in the development of information types and designs and must create the models for information structures for other writers to use (paras. 35–37). Information designers must learn a new set of skills to address all the single-source needs. Editors must maintain standards and consistency throughout all the information objects so that when they are synthesized at different combinations, the objects function well together (para. 39). The last highly impacted role is that of the information

technologist, who is responsible for the different media outputs of content. These people master the tools of the trade in order to control their subsequent outputs (para. 40). Rockley makes the last point that technical communicators need to control the technology they use to command their projects.

## Brierley

Sean Brierley, Senior Member of the central Connecticut chapter of STC, is a member of the STC SIG for single sourcing. His short article, “Beyond the Buzzword: Single Sourcing,” outlines a brief summary of single sourcing, which is “a documentation workflow that creates multiple deliverables from one unmodified source document—that is, in the process of creating the deliverables, the source document is not edited or modified” (15). Not only can single source information be translated into several different products and forms, it can also be translated at different levels of understanding or different special interest audiences. The efficiency of single sourcing appears in editing and updating; instead of updating several documents, Web sites, or products, only one source document much be changed (15). Single sourcing tools and programs range from highly complex and intuitive to more general and simple. On the higher end are the XML-driven content from databases, such as *Epic* and *Miramo*, whereas on the lower end are *Quadralay Web Works Publisher Professional*, *Mif2Go*, and *AuthorIT* (15).

Brierley argues the importance of templates in the authoring programs and the single sourcing programs. The templates are used to characterize the content and manipulate them into the different formats for different deliverables (16). In his closing, Brierley summarizes single sourcing by crediting it as a workflow that aides the authoring of information texts and/or documentation. When transitioning into a single source model, writers must consider toolsets and templates to make the process quick and easy. His final argument is that single sourcing is an efficient way of saving time and money.

## Albers

Michael Albers works as an assistant professor at the University of Memphis, teaching in the professional writing program. He holds a Ph.D. in Technical Communication and Rhetoric from Texas Tech University and has 10 years of technical communication experience, doing tasks such as writing software documentation and creating user interface design (Albers 343).

In Albers’s 2003 article, “Single Sourcing and the Technical Communication Career Path,” he discusses the impacts of single sourcing on a technical writer’s course through his or her career. Whereas a technical communication career used to be centered around the craftsman model—where individuals worked solo on their projects—Albers notes the shift toward collaborative team writing (335). He suggests that single sourcing changes the technical communication career structure. Writers are not able to take such strong ownership and remain so fiercely territorial (335). Single sourcing causes some writers to have specialized expertise, banishing the “jack of all trades; master of none” standard and redefining the junior and senior technical writing positions (336).



Single sourcing transforms technical communicators' responsibilities within a field. Incorporating the use of new technology can easily become a prominent duty of technical communicators, and they may feel frustrated and ill-prepared to make this adjustment (338). Along with this change, technical writers may feel strained because they have no clear understanding of their junior and senior technical writing positions, nor an understanding of guidelines and duties for these positions (339).

Albers attempts to define these roles in the new era. At a junior level, writers are finding themselves producing a majority of the text. Junior technical writers are typically creating the text elements that fill the single-source library. The main issue these junior technical communicators face is finding the motivation to write endless data chunks. The job can quickly become maddeningly monotonous (339–341).

At a senior level, technical communicators are doing very little writing at all. They are becoming more of documentation planners and data designers rather than actual writers. Senior technical communicators spend their time structuring, organizing, and analyzing text (342). In summary, Albers gives this thought, "The future of effective technical communication revolves around designing and developing dynamic information systems that are tightly integrated with both their underlying system and the user" (342).

### **Bottitta et al.**

Jeanette Bottitta is a senior writer for VERITAS Software Corporation and "currently documents software libraries and shared infrastructure" (Bottitta et al. 370). She is also responsible for the development of reusable documentation shared throughout her company's product teams. She has produced user guides, white papers, online help, and programmer guides in a variety of formats. Lastly, she is a senior member of the STC Carolina chapter. Alexia Idoura is a senior manager at VERITAS Software Corporation and oversees the publication's leadership group. She is a member of STC, and several of her group's projects have won STC awards. Lisa Pappas is a senior Web technology developer at VERITAS and creates software components and their documentation. She has previous experience with single sourcing and has received several STC awards (Bottitta et al. 370).

Their August 2003 article, "Moving to Single Sourcing: Managing the Effects of Organizational Changes," analyzes traditional writing team versus the change in writing teams after the implementation of single sourcing. The traditional writing team uses roles to achieve goals (355). One of these traditional roles is information designer, where a person evaluates information to be presented, designs a model for documentation, and works to understand the audience and the best way to deliver what the audience needs (356). A content developer writes content for an audience, exploiting features of the media, and a graphic illustrator creates images to model information (356). The editor reviews the content of every type of deliverable, ensuring accurate and consistent terminology, style, grammar, and format and maintains team-decided conventions or corporate standards (356). The production specialist generates, tests, and ensures quality output in each media (356). The tools expert uses applications effectively, making the process more efficient. The standards specialist determines

style, formats, and editorial standards for one or more projects, templates, boilerplate text, and guidelines (356). The last role of manager is where the person oversees the other specialists, tracks project milestones, and oversees budgets (356).

With the implementation of single sourcing to the traditional writing team, some of the roles such as editor and standards specialist may become more prominent, while the role of writer may become more convergent between online and print media. Along with these changes, roles may become more specialized and more collaborative where the writers work with other writers' pieces (358).

Employers might also see the need to add roles to the team, such as a media expert (to become proficient in all the different and emerging technologies) or a usability expert (to address the needs and maintenance of an audience's needs). Along with the addition of new roles, employers might see the need to eliminate roles (358). Some expendable roles for a writing team would be eliminating a double writing position with each specializing in print and online and converging the double writing position into a single, multisource writing position. New or changed roles replace eliminated roles more than a blatant termination. This provides the opportunity for a career change in focus or role (358).

The effects of these changes are varied. Bottitta et al. states that to achieve goals, each role must be well defined and all team members must understand their responsibilities. "As individuals fulfill the roles expected of them by the group, the group positively reinforces performance of their respective roles and role stability emerges" (358). Stability of roles encourages group member inclusion, which, in turn, encourages group stability. When roles change in a writing team, expectations must also change, often causing stress in a group.

Some of the leading causes of stress are resistance to change, role strain, role ambiguity, social tension, role conflict, conflict, pressure to produce, and displacement. Resistance to change is self-explanatory and seems to correlate to the length of time a group has been working together (359). Role strain typically occurs when a member lacks skills, experience, resources, authority, support, or motivation to perform their role. This leads to high stress and low satisfaction (359). Role ambiguity occurs when a team member is uncertain of his or her responsibility (359). Social tension is uneasiness between group members when they are uncertain about the other members' relationships. Social tensions lead to hostility, vying for power, and a lack of communication. Role conflict occurs externally and/or internally. External role conflict occurs when people interact in competing or incompatible roles, whereas internal role conflict occurs when one team member plays different and conflicting roles in a team (359). The pressure to produce comes from upper levels as well as from clients. Lastly, displacement occurs when team members are unsure of their duties, objectives, and authority (359).

Bottitta et al. cites the "role analysis technique" to define roles by Ishwar Dayal and John M. Thomas. Their steps are as follows (Bottitta 362–363):

1. As a group, decide what roles you will analyze and in what order (define manager last).
2. Plan one meeting per role. The team member representing the role being analyzed gives an overview.

3. As a group discuss the role and its place in the organization and how this role helps achieve overall organizational goals.
4. List the specific duties associated with the role. Modify them until everyone is satisfied with the result.
5. Next, the representative lists his or her expectations of other roles in the group, identifying what he or she needs from other to succeed. Modify them until everyone is satisfied with the result.
6. Now, list the expectations other members have toward this role and what they think constitutes success for this role. Modify the expectation until everyone is satisfied with the result.
7. After the meeting, the representative writes a summary of the role, called a role profile, as defined by the group.

Review the profile at the next meeting before starting on the next role.

Bottitta et al. closes the article with some specific tips for defining management positions, as well as specific tips for handling the sources of stress in a group. The last key concept they give for a team is to establish metrics on which to base measure of success. This gives the team a chance to see progress and feel motivation to continue working toward that progress (369).

## **Kramer**

Robert Kramer is a published researcher of Web-based writing, document design, and collaborative workplace theory. He completed his doctorate at New Mexico State University in 2000 and has produced materials for a federal challenge grant. His studies focus around visual rhetoric and thinking and how it “impacts writing in distribute, multi-author, shared file systems” (Kramer 334). In his August 2003 article, “Single Source in Practice: IBM’S SGML Toolset and the Writer as Technologist, Problem Solver, and Editor,” he explores the effects of a more predominantly single-sourced world on the average technical writer. He maintains that “technology skills and instructional theory are important and have a serious impact on how well writers can adapt to single-source writing” (328), but acknowledges a conflicted perspective from what seems to be the general positive consensus of the move toward single sourcing. He believes that the process can be frustrating and unsettling for the traditionally trained technical writer, arguing that some of the concepts and necessary actions blatantly refute technical communication conventional practices and teachings (328). Kramer admits that single sourcing changes a technical writer’s job to a more technology and data management position than what most of the professionals are trained to utilize. Single sourcing resources and programming cause a difficult transition for technical writers who are trained to control the appearance of information on a physical page (329).

In his continuing discussion, Kramer analyzes the information development of IBM, where he has been employed, and explains the ins and outs of data creation, transfer, revision,

and publication. With this knowledge base, Kramer supplies a modern list of possible technical writing responsibilities, such as manage files, run current updates of shared files, review all versions of a document and report errors, verify new content with leaders before formal review, check revisions for updated content, verify props (conditional statements) for their context, update indices, update branding information, prepare documents for review in multiple formats, and update new cross-references or related files (333). Along with these ideas, Kramer closes his article with some strategies for managers who are guiding their team through this transition and dealing with challenges that may come up. He admits that although single sourcing has many benefits, it is often focused on meeting the needs of the production managers and less focused on the writer. He does believe, however, that if workers are trained in the necessary skills, they will find the “transition to single sourcing rewarding rather than surprising” (334).

## Rockley

Ann Rockley, as cited before in this paper, is an expert in the study of single sourcing. In her 2003 article “Single Sourcing: It’s About People, Not Just Technology,” she discusses the impact single sourcing has on the technical communicators involved, as well as the dimensions of a manager’s objectives when making this transition. First, Rockley discusses the impact of single sourcing to the working team. Single sourcing completely changes the way people work, causing some to respond well and look forward to more efficient and money-saving processes, and causing some to respond negatively, especially in the case of an ill-communicated transition (350). For her article’s purpose, Rockley explores structured writing and collaborative writing, declaring that these changes provide the most significant resistance and discomfort.

Rockley defines structured writing as writing content following strict guidelines or models that specify and order content and provide a plan for content reuse (350). Structure is the key to consistent content and collaborative authoring. Rockley looks forward to the opportunities in single sourcing with the automation of content management and publication. This thought stands as a fascinating snapshot into the year and progression of single sourcing, because, as will later be shown in the succeeding articles, these automated processes are being implemented in their early phases.

Rockley also argues that unstructured, poorly structured, or even simply inconsistent structuring makes content reuse difficult at best, impossible at worst. Missing components, additional components, or differently tagged content cannot be mapped into a logical progression or be easily reused/reorganized (350). In order to understand and support writers as they make this transition, Rockley gives a few insights and recommendations for easing the change. Writers often view structured writing as restrictive and inflexible at first, but the more they gain experience with the process, the more they recognize it as a way to eliminate the more mundane processes of writing (350).

Rockley also suggests that single sourcing will increase productivity and shorten time costs, which allow for a higher quality product in less time. When this trend goes into effect, it will raise the profile of the department or writing team that uses the process (351). Her

recommendations to avoid resistance from writers into this transition are as follows: involve key authors to be able to best understand how to structure content, help authors understand why the structure is important, identify what authors consider creativity and the value of the creativity, provide ongoing training to address concerns and frustrations, and do not have an expectation of perfection immediately (351).

Rockley approaches the collaborative authoring issues by explaining that combined efforts allow for more consistent information products and a better understanding of how the different documents affect each other (352). This change in the technical communication process makes some writers wary because they feel a changing role of ownership—value diminishes when they cannot refer to a complete information packet they solely produced (352). This does not outweigh the benefit of merging different authoring styles into a common style agreed upon by the group (353). Ownership under this feature of single sourcing changes because authors are more likely to work on similar pieces from multiple texts, focusing on their unity, rather than focusing on a whole text and focusing on the one text's entire functionality (353). Rockley's recommendations for easing the transition into this work change are to address issues as they come up, and maintain constant communication on issues such as the plan and status of changes and the successes and fixed problems (353–354). She also recommends using “change agents” (354) to help change implementation, meaning using a senior manager to endorse the project, and keeping ongoing education.

Her final caution to her readers centers on the fact that a change in workflow of this drastic nature affects the people involved tremendously. The people involved make projects a success or a failure (354). Her recommendations for success are for supervisors to stay in communication with their workers and to address issues as they appear. She believes that this behavior will maintain happy workers and help them adjust to the transition.

## Perlin

Neil Perlin, an associate fellow member of the Boston chapter of STC has 25 years of experience in technical writing and nineteen in training, consulting, and developing various types of online documentation. He runs the “Beyond the Bleeding Edge” sessions for STC and is a popular speaker in the professional field (Perlin 19).

In Perlin's January 2005 *Intercom* article “Device Independence—Single Sourcing's Other Side,” he attempts to explore what he feels is a little-discussed topic: device independent publishing. He defines this aspect as tailoring online output to multiple devices, such as PDAs and cell phones. A strong focus has been traditionally placed on multiple formats for the PC only, but he recommends that technical writers and information managers consider multiple formats for multiple online devices. From the setting of 2005 (two years before the iPhone), Perlin forecasts the increase in the trend of more Internet-capable devices (17).

Perlin applies the World Wide Web Consortium Device Independence Working Group's device independence definition of “access to a unified Web from any device in any context by anyone” (17) to a documentation context, stating that it is “the ability to output part or all of a set of source material to any device without having to manually modify the

material for each device" (17). Perlin provides a case example of the practicality of modified content for multiple devices. When shopping for a product, an online store can provide the perfect amount of information, including fantastic graphics and detailed information. The information would need to be modified for someone accessing the information via PDA or cell phone while they're standing in the store, trying to decide on a product (17). Perlin provides more examples for the utility of device-tailored content, such as a service technician's online help manual transferring to a PDA in the field.

This focus means heavy change on the programming end of online content development. Some software companies such as Macromedia are developing programs to create cell phone content. One drawback to this market trend is its unpredictability. Companies are unsure as to which formats should be supported (18).

The effect on technical writers depends on whether they plan on waiting for the software to catch up to the technology or not. Some of Perlin's suggestions for preparing for this new need in the technical communication market are to create and define a clear structure and set standards in workflow procedures. Some of these workflow procedures are naming standards for folders and files, document settings and procedures for reference, requiring authors to stay out of code, and implementing a tool standard that requires using commercial tools and using only tools that use XML syntax (18). Although it's highly unlikely that companies will follow all these guides, he argues, "The more standards you can implement, the better off you'll be" (18). His final argument rests on the fact that many mobile devices are replacing the personal computer in many situations, so businesses and companies must take these devices into consideration.

## **Mott and Ford**

In their article, "The Convergence of Technical Communication and Information Architecture: Managing Single-Source Objects for Contemporary Media," Richard K. Mott and Julie Dyke Ford recommend that technical writers change their methodology for creation of information-based resources. A shift from writing formal documents to writing information objects or "single-source objects" will cause a quicker adaptation to all the information media that are to convey the information. Technical writers have adapted to the various roles placed on them and are now not only responsible for "translating and communicating information to various audiences, but in organizing and managing information as well" (27). They advise that this shift in thought should accompany a metamorphosis of the position of the technical writer to "information architects" and, in order to accomplish this, follow a specified organization.

In order to adapt to the ever-changing technologies and methods of informing, technical communicators must move past the genre-specific writing of traditional deliverables and learn to write in information chunks that will be used in all types of products and commodities. "By treating units of information as dynamic objects rather than static end-products, information architects exploit the flexibility inherent in single-source information structures" (Mott and Ford 28). This paradigm shift reflects the changing nature of information.

Users approach information through different contexts and different levels of penetration. When technical communicators provide the different information objects to the users, they allow the users to control and pursue their desired level of knowledge. Aside from this observation, Mott and Ford explain that updating becomes a simpler and easier process because writers can focus on updating an object and not an entire document (45).

## Doyle

Bob Doyle is “editor of *CMS Review* and a contributing editor of *EContent Magazine*. He sits on the OASIS DITA editorial board and founded the CM Professionals organization in 2004 and DITA Users in 2007. He is a member of STC” (Doyle 13). His April 2008 article, “DITA tools from A to Z,” gives readers a brief introduction to Darwin Information Typing Architecture (DITA). In many ways, DITA is the opportunity realized by Rockley in 2003 for automated content management. The underlying principles of DITA are to develop content in small chunked topics that are only as long as needed to stand independently (7). Documents are assembled using maps called ditamaps and pointers or links to topics called topicrefs. “At a finer level of granularity, individual elements of a topic can also be assigned property tags for conditional assembly” (7). These topics are organized based off their content references (conrefs) that categorize topics.

DITA is an intuitive program to create component content management “which offers dynamic content accessibility at any level of granularity” (7). Essentially, the setup of this type of content management allows writers to assemble different topics to meet all kinds of criteria. Topics are divided into different types: task and the two supporting topic types of concept and reference (7). The DITA tools are for authoring, management, and publishing engines. They implement DITA format while hiding the complexity of the XML coding underneath the interface. DITA runs on document type definitions (DTDs), which are schemas that define all allowed elements in a content or information model (7). DITA works to predefine those DTDs so writers can concentrate on the structured content.

Doyle continues his article with some highly detailed information for those who are currently using DITA, but he closes on this unifying thought—writers are usually bad techs, so they can use the tools and programs that are designed to simplify the process and allow for a period of learning to transition easily. This will enable them to perfect their process and create more efficient content publishing (13).

## Sigman

Christine Marini Sigman, member of STC, is currently a tech writer in the field. She is a senior tech writer at Endeca Technologies and is currently participating in the transition to DITA. She is in the masters’ program for professional writing and information design at Northeastern University.

Sigman’s April 2008 article, “DITA and the Technical Communicator” discusses, from her own personal experience, some of the complexities and technicalities of transitioning to

DITA. She created a survey for those professionals who are currently undergoing this transition and discussed her findings. Some of the professional writers she surveyed had received formal DITA training as part of the workflow transition, but not enough in Sigman's opinion. Due to the complex and unique nature of DITA, she recommends that managers and supervisors include training in the costs associated as part of the budget for making such a transition (15). She found that many professionals researched DITA on their own time with the materials they had available to them. From her research, she discovered that a main point of stress for technical writers was making the transition to the DITA process. Although their offices remain in a hybrid state between their pre-DITA processes and transitioning into the DITA process, most technical writers find themselves very frustrated (15). Sigman offers some suggestions for managing the conversion, such as pick a prototype project of a manageable scope to use as a training tool or test run the new program, be selective in content chosen for conversion, schedule projects to minimize delays so workers do not have to work in a hybrid state for an extended period, and work with your management to explore options for the most cost-effective and efficient choice (15).

Another topic explored by Sigman's survey is the attitude of writers toward structured authoring. She found that most writers felt it allowed them to focus on their content, but some felt like it pulled them away. Some tips for managing the shift toward structured content is giving it a try, taking time to figure out what one can and cannot do, trying to build time into schedules to accommodate the demands of writing in a structured manner, and suggesting to defer the topics that are particularly taxing to the information architect. The nature of DITA supports specialized roles (16).

Sigman closes her article by discussing the still unknown nature of DITA conversion. As it is still a new process and most people are still in the middle of a transition or in the beginning phases of a test run, the results of her survey are still inconclusive. She notes that good communication between technical writers will aid all who are in the process of making the transition, and she hopes that through strong communication, DITA will become a highly used and useful tool for the whole field (17).

## **Conclusion**

From the context of Philip Butland, who was one of the first in the technical communication field to consistently practice single sourcing, to the context of Christine Marini Sigman, who is transitioning into the first universally accepted single sourcing program of DITA, the evolution of single sourcing shows stark and clear. It is a radical new approach to information creation and design and is a way of promoting some of the key principles of technical communication: consistency and conciseness. Although some have reacted negatively, and although the change is not without its costs, most writers and supervisors are finding that the process makes improvements on the departmental workflow and product. As the literature shows, single sourcing has grown into a more intuitive and better understood process so that it may become universally used.



**Works Cited**

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