SOUNDINGS

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The Terror that Never Arrives

Giles Beilby

Every day we are told to keep ourselves aware of "the threat." We are told we are always vulnerable, and always on the verge of being attacked. We even have a color-coded indicator of the estimated proximity of the threat. We know this threat, we have seen it materialize in New York, Madrid, Bali, Sudan, Oklahoma, and we see it again every day in Iraq, Israel, and Palestine. Terrorism is now almost omnipresent as a factor in our everyday lives. Yet, when we say this, what do we mean? Do we really feel that at any moment an Arab with bombs and guns might burst into our home, office or school? And do we really feel that following the guidance and advice of our Homeland Security officials, and remaining constantly alert actually protects us? What, exactly, is accomplished by our perpetual anxiety? More importantly, is whatever is accomplished really the most proper mode of addressing the threat which we are, by all accounts, under?

Franz Kafka wrote a story entitled *The Burrow* which bears some striking resemblances to our peculiar situation. In this story, a creature has created for itself a vast labyrinth of underground tunnels and chambers as both a palace of pleasures and a bastion of security. In constructing the burrow, the creature has beaten the sandy walls hard with its head, securing itself from the outside world, and concussing itself with the effort. And yet, as secure as the burrow is, it still has its entrance, covered by a layer of moss which could be breached at any moment. The creature laments "I can scarcely pass an hour in complete tranquility; at that one point in the dark moss, I am vulnerable, and in my dreams I often see a greedy muzzle sniffing around it persistently" (Kafka 467). Nor is this the only threat the creature fears; "there are insatiable robbers who burrow blindly through the ground . . . there are also enemies in the bowels of the earth . . . at any moment [the silence of my burrow] may be shattered and then all will be over" (469). At intervals, the creature must leave the safety of the burrow to hunt, to collect food, and on its return, it spends days agonizing over the possibility that its reentrance might alert some potential enemy to the vulnerable moss carpeted entrance to its sanctum. At one point, the creature believes it hears a noise, a buzz it believes might signal the approach of an enemy, and so spends the rest of the story half-heartedly seeking it out, never finding anything, but living in perpetual fear, finally hiding indefinitely in the burrow's keep, silent and still, awaiting its doom.

Do we not find ourselves in an analogous situation? Are we not told we have the best trained, best equipped armed forces of any nation; that America is the premier military power; that our national defense is the most prepared, most versatile, most effective system in the world? Yet simultaneously we are warned that we are ever susceptible to the mobile, adaptable, rapidly acting terrorist threat. Perhaps not coincidentally, these are the same qualities our own armed forces aspire to in their ongoing restructuring. What is this threat that is apparently a match for our defenses, which apparently renders all our efforts moot? Can we seriously believe it is a specific group of individuals "driven by hate, and determined to destroy the ideals we cherish and the way of life we hold dear" as Secretary of Homeland Security Tom Ridge so eloquently put it (Remarks 12/30/03)? If we look at the language Ridge chose to describe the aims of the threat: "hate," "ideals," "way of life," we see that these are all nebulous indicators of intangible ideas. Doesn't it seem proper then that the threat associated with these intangibles would itself be intangible, rather than embodied in specific individuals? We can look also at the reasoning given for the constant changes in the levels of the Homeland Security Advisory System; that wonderful color coded threat intensity indicator. We hear again and again that the level has been changed up or down (primarily between "Yellow" and "Orange," or "Elevated" and "High,") as the result of "a careful review of the available intelligence" (Remarks 1/9/04). At the same time, whenever the threat level is lowered, we

are informed that "the lowering of the threat level is not a signal to government, law enforcement or citizens that the danger of a terrorist attack is passed" (Threat 9/24/04). What then does it indicate if not a nebulous reaction to a nebulous threat?

What are the reasons for remaining so ambiguous in defining the threat level, and what effects does this ambiguity have on a social level? We are told that we do not need the specific information, and indeed that to give that information out would be tantamount to telling the terrorists how we know what they are doing. When Tom Ridge was asked in a press conference what it would take to raise the alert level, rather than specify what the different levels entailed, he responded "Well, we wouldn't necessarily want to broadcast to the terrorists what it would take [to raise our alert]. . ." (Statement 7/8/04). Still, something in this classified information is apparently enough to justify the almost bi-monthly vacillation between "Elevated" and "High" alert levels, so mustn't there be some real difference between them? Yet, in an announcement that the DHS was raising the alert level from Yellow to Orange, (the level where federal agencies are advised to consider canceling public events (Homeland Security Presidential Directive), and the public is urged to "exercise caution when traveling" (Citizen Guidance)), Ridge encourages "all Americans to go forward with their holiday plans, gather with family and friends" (Remarks 12/30/03). What is the distinction between these two levels if we are told that an Orange alert ought to change our activities, but also told when it actually occurs to change nothing? At first glance, they are indistinguishable, or one might read "elevated" as an elevation above "high," though in reality it is the other way around. Without anything specific, we are left to assume that those with access to the classified information are doing whatever is necessary to protect us, and that it is our contribution to shop, travel, and remain in a state of high or elevated alertness. On the one hand, we are told that our fears are real, and on the other to pay them no heed. We, it appears, as concrete citizens can do nothing, and must defer to the shadowy reviewers of information. It seems as though for us, the threat of terrorism has always already arrived, while our agencies still guard against its approach. It seems that, strangely enough, the concrete threat is dealt with by intangible agents, while the concrete population remains under an intangible menace. We can do nothing, we are told, but leave it up to the capable people of Homeland security.

Despite this subliminal admission of the spectral nature of the threat, we continue to treat it as though it were a concrete entity which we could one day kill off. We send our troops to fight it, we close our borders so it can't get in, we set up systems to detect its approach, and we prepare ourselves as though it might appear on our doorstep with a letter of introduction. At the same time, are we not all manifestly aware that this is not the case? Don't we know that terrorism arrives unannounced? If indeed the threat of terrorism is ideological, why do we act as though it were physical? Of course, this is not meant to imply that terrorism does not have real, physical effects, or that efforts to thwart the advent of these effects is improper, but are we doing anything at all to address the more fundamental roots of terrorism? Philosopher Slavoj Zizek writes:

> On September 11, the USA was given the opportunity to realize what kind of a world it was a part of. It might have taken this opportunity– but it did not; instead, it opted to reassert its traditional ideological commitments: out with feelings of responsibility and guilt towards the impoverished Third World, *we* are the victims now! (Zizek 47).

When the towers fell, America was thrown into crisis. We had abruptly been linked to the rest of the world in a way we had only ever imagined in action films. Suddenly the movie was real, and the vicarious involvement we had with terror was found to be inappropriate– in fact, we yanked or delayed the release of films which addressed terrorism in this newly inadequate manner. At that moment, we had the chance to reconfigure our place in the world, a chance to address our relationship to international concerns. Instead, we bombed the shit out of Afghanistan. The actions we took after September 11th reflect precisely what it is that disallows our active and productive understanding of, and reaction to terrorism. We hear much talk about "September 10th" mentalities, where terrorism remains a foreign problem, as opposed to "September 12th" mentalities, where terrorism is *our* immediate problem, but we

have yet to recognize the opportunities present in the September 11th mentality, where terrorism remains a question. Despite our awareness that this was a new type of conflict, we reacted in an old way. Despite our claims that terrorism was the product of fundamental ideology, we attacked it as though it were a foreign state. Despite our appreciation of the causes of terrorism, we chose to fight its symptoms, and in so doing, we covered over the opening we had to honestly encounter the threat in question.

If we are really serious about addressing terrorism, we cannot content ourselves with abating its symptoms, nor can we ignore the claims of its proponents. While we may certainly feel that Osama bin Laden's judgment of the United States as the Great Satan is unfair, we simply cannot unequivocally deny that judgment validity. By merely dismissing such claims as false, and by naming those who make them fanatics, fundamentalists, or lunatics, we artificially erect ideological blockades which prohibit productive engagement. In fact, we merely reenact those very claims by simply readdressing them to the other side. What we must actually look at is *how* these accusations, if they are, as we feel, patently false, *come to be held as valid* by those recruited as terrorists. No one can reasonably say that antipathy toward America is inborn in Islamic society, and no one can claim that Islamic youth come to bear arms against the United States without having some reason to do so. We cannot remain satisfied with dismissing the ideological claims of terrorism as ludicrous, and then responding in like kind to terrorist actions. If we do, we remain at an impasse, and with a war that, as President Bush has put it, cannot be won.

In order to see why it is that ideological claims against the United States can hold such sway over young people who turn to terrorism to express their views, it is imperative that we first allow their claims to stand as though they were valid *for us*. We see that terrorist recruitment is most effective where the population is poor, where religion is strong, and we immediately blame the problem on ignorance and religious fundamentalism. When we do this, we forget that Islam does not have a history of violence toward other cultures in any greater degree than does Christianity. Thus we cannot blame the particular religion or the mindset of its adherents for the coincidence of the Muslim faith and terrorism. In this analysis we emphasize religion at the expense of economics, and ignore the astounding discrepancies in quality of life between the Third World and our own. In fact, in this very term: "Third World," we have linguistically excluded the poor from what we think of as the world as such. If we try to think ourselves into the position of frustration and disenfranchisement, and then consider an explanation for the discrepancy between our situation and that of the wealthy, which not only explains, but also gives us a method of redress, and also lays claim to our religious faith, we are not likely to delve into the concrete truth of the argument. We have seen almost the same situation play out with pre-World War II Germany where a sort of political fundamentalism allowed for the most destructive rupture of Western civilization to date. Would we, in the other's situation, be so prescient as to see through the reasoning that claimed we would have to fight the oppressor, an oppressor who would lie to us about their aims? I think we would have to answer in the negative. If we were in the position of most of the Third World, and were convinced our lives were at stake, *of course* we would fight this horrible enemy in any way we could. In fact, we *have* taken that precise position, only we have characterized the *terrorists* as the would-be oppressor. We see *ourselves* as victims of unjustified aggression, precisely as those who join up with terrorist organizations see themselves as victims of our aggression– we join the army, they join al Qaeda; we support our troops, they support their militias. In practical terms, it is irrelevant whether the opposing interpretations actually correspond to reality, because as long as they are held as valid by either side, their enactment *creates* the concrete reality. As long as we refuse to recognize our parallel structural activities, there can be no resolution.

So what, explicitly, can we do? Once we have understood that the real problem is not merely a physical one, but an ideological one, once we cease to confuse the symptom with the sickness, we are in a position to move ahead. First, there must be an effort -- and not a token, photo-op effort -- to alter the fundamental situations which allow ideological radicalism to ferment. This means that Third World poverty must become a serious issue for us at home.

It must become an issue in such a way that we do not simply remain within our own ideological bubble handing down dough from on high, the way we might give change to the homeless, but rather we must concern ourselves with the Third World as though it were the First World. If drastic poverty were to suddenly strike Britain, or France, or Germany, we would not move in and order their affairs for them (we ought to have learned this lesson after the Weimar Republic), but we would *ask* them what assistance we could give. In just the same way, Africa, the Middle East, South America, Asia, and Eastern Europe, all ought to be *asked*, not told. Secondly, it means that our foreign policy must reflect a new kind of honesty. We can no longer say we will deal with some nations despite their handling of internal affairs and refuse to deal with others. If we deal with Saudi Arabia, we ought to deal with Iran and Syria as well. We cannot assume a position of superior moral authority in the world, as though we were above the fray in a way that would allow us to judge the relative merits of other nations, and to bias our actions regarding these nations on a curve reflecting their relative usefulness to us.

All of our dealings in the world must recognize the questions opened up on September 11th: who are we? who are they? why did this happen? what do we do now? These questions must remain permanently open, and must configure our relationship to the world. We must begin with a question, and we must carry out a conversation, rather than a monologue. This conversation cannot remain limited to "allies" and "partners" if we want anything to change. Nor can it become a debate, where "sides" are arranged. This conversation must also become an internal conversation where we as citizens have a place other than as shoppers and travelers. If the open question of September 11th is not recognized, then we are faced with the fate of Kafka's creature, hearing threats from every corner, imagining ourselves free and secure in a prison of our own construction.

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With One Foot Here and the Other One There: Blurring the Boundaries of Home and Exile

Alba Cruz-Hacker

Similar to many U.S. immigrant minorities, Dominicans experience individual and collective struggles to effectively negotiate mainstream societal norms while at the same time attempting to retain key aspects from their culture of origin. Memory and its ensuing nostalgia for the tropical island culture and those left behind in the Dominican Republic combine with hope, resiliency and visions of a future on U.S. soil. For Dominicans, already heterogeneous ethnic and racial roots must sprout further to dig and find a space in a new land; a land that often views them as the "other," ethnically, racially and linguistically. From this cultural crossroads, Dominican-American authors give voice to their people's diaspora, and in the process redefine American literature and culture by intermingling their current realities with the vibrant cadences, flavors and colors of the Spanish Caribbean.

The Dominican-American poet Rhina P. Espaillat is part of this enriching literary flux. She has mastered English and Spanish prosody, publishing in both languages, and is frequently deemed to be of the best New Formalist poets writing in the United States today. Thematically, her work covers a wide range of the human experience spectrum, from love to loss, to discovery, to language, and much more. In addition, and perhaps more significantly, portions of her work portray many of the realities of exile and migration, revealing a straddling of two borders (both fluid and concrete) that records a bicultural existence which encompasses ancestral heritage and acquired U.S. customs. Her works articulate the negotiation of a hyphenated ethnic identity while affirming cultural hybridity as a natural and enriching human process.

Espaillat was born in the Dominican Republic in 1932, but came to reside permanently in the United States with her politically exiled parents in 1939. Her body of works comprises four full-length collections of poetry, *Lapsing to Grace* (1992), *Where Horizons Go* (1998), *Rehearsing Absence* (2001), and *The Shadow I Dress in* (2004); an upcoming poetry collection entitled *Playing at Stillness*; and three chapbooks, *Mundo y Palabra/The World and the Word* (2001), *Rhina P. Espaillat, Greatest Hits: 1942-2001* (2003), and *The Story Teller's Hour* (2004). She is the recipient of multiple prestigious literary awards such as the *2003 Stanzas Prize*, the *2002 National Poetry Book Award*, *2001 Richard Wilbur Award*, the *1998 T.S. Eliot Prize for Poetry*, the *Oberon Prize*, the *Howard Nemerov Award*, the *Sparrow Sonnet Prize*, and several prizes from the *Poetry Society of America* and the *New England Poetry Club*.

Those who examine Espaillat's work find that in addition to her excellence of poetic craftsmanship, her words can help provide an understanding of the bicultural and bilingual experience, as well as of the human will and resiliency to transcend physical and emotional ruptures caused by migration and exile. It is generally understood that cultural/ethnic identity is a social construct that involves an ongoing process between the individual and the larger society. Multicultural approaches suggest that "a person can appreciate, practice, or identify with two different cultures independently of one another" (Rudmin 4). A person who demonstrates an amalgamation of traits from two distinctive ethnic groups is said to be bicultural. LeMay defines *biculturalism* as "a variant of both acculturation and pluralism based on the observation that exposure to several cultures can be additive. A person can be comfortable with both the dominant culture and his or her own ethnic heritage" (23). Espaillat maintains distinctive attributes from two cultures and two physical spaces, in addition to having full command of two languages, which results in a self-identity that includes multiple additive traits. Poetry has served her as a suitable vehicle for the articulation of her dual ethnicity, through which she reflects a turning of her exilic experience into an affirmation of a compounded cultural identity that blurs the boundaries between her ancestral home and her permanent exile home.

Espaillat uses memory, metaphor, imagery, meter and rhyme -- the poetic tools at her disposal -- to construct a symbolic bridge between two cultures and two languages. However, embracing a hyphenated ethnic identity entails adaptability and creativity, and successful biculturalism requires acceptance of the

new while retaining aspects of the old in order to maintain cultural survival. Espaillat's poetry embodies compounded ethnic allegiances -- rich with images, metaphors, and language – to illustrate the ongoing process of defining, redefining, and embracing a personally and professionally enriching bicultural and bilingual identity.

The rate at which a person will acculturate to his or her new host country depends in part on individual adaptability. "Learning Bones," published in *Mundo y Palabra* (2001), highlights individual differences in the process of acculturation as the speaker contrasts herself with her father in order to illustrate this point. This poem offers insightful reflections on the transition from an ancestral vehicle of communication (the Spanish language) and a worldview based on tradition—as exemplified by the father—to the speaker's acquisition of a new language (English) and a modern worldview based on utility and function. It begins with the statement, "I'm learning bones to please my father's ghost" (line 1). This line suggests the speaker's desire for some form of reconciliation with her father and with what he represents—in this case, the fierce adherence to ancestral culture and customs. The speaker is looking to the past with a different perspective (gained through age and experience) regarding the way her father viewed the world while she was growing up. Differences in age and maturity are likely to play a role in acculturation: the young are generally more flexible, adapting more rapidly to new environments, whereas adults are more cemented in their own identity because they have already defined personalities and belief systems. The narrator is learning the human skeleton by its Latin nomenclature in the same way that her father knew and recited its parts—a symbolic way in which he held on to his ethnic roots. The father is portrayed as being very proud of his Hispanic heritage. Unwilling to forego his cultural identity, he was rigid like "stone" and would not call the "Sternum" a "breastbone" (10,12). He held on to propriety and tradition and could not adapt to a new environment and time: "He didn't like my century" (19). In contrast, the speaker, "gospelled by [her] own time…[she] worshipped use," the utility and "function" of things (i.e., "glands"), and embraced modernity rather than tradition (13,16).

In addition to adaptability, individual personality may also play an important role in the process of acculturation. "Learning Bones" implies that the contrasting differences between the speaker and her father, concerning adaptation to a new environment, are partially based on their respective personalities. According to acculturation psychology, the speaker's father, who "wanted things to be, and to be there / forever in their place" (21-22) may exhibit traits of a philistine personality defined as "high in fear and low in curiosity… holding fast to social traditions and rejecting modernity… [being] non-adaptive in new social contexts" (Rudmin 11). The speaker, on the other hand, has a creative personality: evident in the fact that she is a poet in the first place, and illustrated in the poem by her desire to know "the mind's evasions, or the work of dreams" (18). A creative personality has a "balance of fear and curiosity…. [It] seeks controlled and coherent change … maintaining but modifying schemas of the minority culture to adapt to the dominating pressures of modernity…. [It] widens the control of … environment and adapts to a continually increasing sphere of social reality" (Rudmin 11). In the poem, the speaker is portrayed as looking towards the future and adapting appropriately, while the father looks towards the past and is unable to effectively negotiate the changes that occur around him. The final lines address the father's decline in health and his eventual death, years after the initial setting of the poem. It concludes with the speaker's resolution to learn the human bones by their Latin lexicon in an attempt to celebrate her late father's unyielding grasp for his cultural identity because "we make amends in any way we can" (39).

In a recent interview, Espaillat states that the poem "Translation," published in *Callaloo* (2000), "is a much more mature poem, and reflects a deeper understanding of the subtle process of acculturation" (Interview with Cruz-Hacker July 9 2004). Throughout six stanzas, the speaker makes comparisons between languages and cultures—between Spanish and English and between Dominican and American cultural norms—through the use of imagery and cultural symbolism. At the heart of the poem is the issue of *transculturation*: a term coined circa 1940 by the Cuban anthropologist Fernando Ortiz in Contrapunteo cubano del tabaco y

el azúcar, and which addresses the two-way process of acculturation that involves and affects both the minority and the majority cultures (Trigo 99).

The poem begins by stating that visiting "cousins from home" (the Dominican Republic) are attempting to learn English but find it difficult since English and Spanish differ considerably in their linguistic roots (Spanish belongs to the Romance Languages family and English to the Indo-European family). English's "slippery vowels" and "stiff consonants" like "Saxon spears" are contrasted with the Spanish "leisurely tongues of my home town" (lines 2-5). In the second strophe, the cousins' numerous and "laborious" attempts to speak English "fail," yet they "try again" but eventually "give up" (6-7). They wonder if the speaker, being bilingual and bicultural, "think[s] in this difficult noise [English]," and wonder "how love can work / in a language without diminutives" (19-20). For Dominicans, Spanish diminutives are terms of endearment integral to familial, romantic, and friendship relationships, and their absence seems to rob English speakers from being able to relate appropriately to each other (as the Dominican cousins would suppose). English does not provide such ways of addressing others, yet the speaker points out that American people love and care, despite the absence of diminutives in their mutual communications. She compares social relations between the two cultures: the extrovert and physically tangible way in which Dominicans relate with each other (e.g., demonstrative "hugs," animated "gestures", and openness to "strangers") against the "goodness of people / who seldom touch" (Anglo-Americans) but still help others in times of need with "embarrassed silence" (26-28). In spite of the obvious differences in languages and social relations, the speaker has learned to love and appreciate the United States and its mainstream culture, and implies that in turn her neighbors have learned to love and appreciate her as well (the process of transculturation). She embraces her Dominican-American cultural identity, and in the process, effectively creates a merging of the ethnic selves.

The poem thematically central to Espaillat's work is aptly titled "Bilingual/Bilingüe" and published in both *Where Horizons Go* (1998) and *Mundo y Palabra*. It is written in both English and Spanish—a literary device used to recreate the linguistic experience of bilinguality, and by extension, of biculturalism. Throughout nine couplets, the speaker contrasts her approach to learning a new language, English, and acquiring a new cultural identity (American) with her father's insistence on retaining the Spanish tongue and the Dominican culture. In the essay by the same title, "Bilingual/Bilingüe," published as the "Afterword" of *Where Horizons Go*, Espaillat expands on her father's mindset. The family were political exiles and her father "lived in the hope of return," believing that the "new home, the new speech, were temporary" (67). On the first line of the poem, the narrator states her father's theory on bilingualism: "My father liked them separate, one there / one here (allá y aquí)." He believed that "if it could be said at all, it could be said best in the language of those authors whose words were the core of his education" (Espaillat "Bilingual/Bilingüe" *WHG* 67). The father's attitude about language echoes research findings stating, "while there exists a number of markers of identity, such as social group, geography, cultural traditions, and race, for many Dominicans, language is the most significant criterion of self-identification" (Toribio 1135).

The poem "Bilingual/Bilingüe" suggests that the father needed a separation between English and Spanish out of the fear that dual linguistic and cultural allegiances "might cut in two his daughter's heart / (el corazón)," forcing her to chose English, and by implication U.S. culture, over her original Spanish language and Dominican cultural identity (line 3). It is only natural for humans to desire a continuation of their own ethnic line—not only bloodlines—and to want to maintain their respective linguistic identity. Linguists report that Dominicans "remain fiercely loyal to their native dialect, which serves as an immutable marker of Dominican identity" (Toribio 1135). The speaker's father does not want English, "the alien part to what he was—his memory, his name (su nombre)"—to "lock" his daughter in a place, both culturally and linguistically, that "he could not claim" (5-6). It is aptly ironic that the father considers English and U.S. customs the "alien part" though legally he and his family were designated as "alien" political exiles by the United States government, and by mainstream society.

This theme of alienation is commonplace to the immigrant reality. For the father, his Spanish "name"

represents more than a given name at birth or the surname of his father: it is the collection of cultural traits, customs, beliefs, memories and history that make him who he is—both his personal and ethnic identities—and which he wants his own offspring to retain and pass on to future generations. The father experiences cognitive dissonance around a perceived betrayal, exemplified by his daughter's process of learning another language and acculturating to a new set of cultural norms. Espaillat elaborates on the internal tensions many exiles and immigrants must live through in the essay "Bilingual/ Bilingüe:"

> Nostalgia, a confusion of identity, the fear that if the native language is lost the self will somehow be altered forever: all are part of the subtle flavor of immigrant life, as well as the awareness that one owes gratitude to strangers for acts of communication that used to be simple and once imposed no such debt (68).

In an effort to hold on to his own cultural and linguistic identity, the father commands, "English outside this door, Spanish inside" (line 7). This paternally imposed linguistic split causes the narrator to experience emotional discomfort, and most likely, a certain amount of guilt due to her betrayal (as perceived by the father) of adapting to a new land and language. These conflicting emotions are illustrated by the poignant question: "But who can / divide the world, the word (mundo y palabra) from / any child?" (8-10). Espaillat recollects the difficulties of his time with a father who demanded the exclusive use of Spanish in the home: "His insistence on pure Spanish made it difficult, sometimes impossible, to bring home and share the jokes of friends, puns, pop lyrics, and other staples of seven-year-old conversation. Table talk sometimes ended with tears or sullen silence" ("Bilingual/Bilingüe" *WHG* 67). Regardless of the frictions at home, the poem declares the speaker's resolve to learn English; the determination to acculturate and survive in her exilic home prevails. She is "stubborn (testaruda)" and deliberately crosses the patriarchal boundaries to embrace American culture and its language: "I hoarded secret syllables I read / until my tongue (mi lengua) learned to run / where his stumbled…" (12-14). Yet, this crossing of boundaries does not come without emotional and psychological penalties:

> Memory, folklore, and food all become part of the receding landscape that language sets out to preserve. Guilt, too, adds to the mix, the suspicion that to love the second language too much is to betray those ancestors who spoke the first and could not communicate with us in the vocabulary of our education, our new thoughts…a sense of grievance and loss may spur hostility toward the new language and those who speak it, as if the common speech of the perceived majority could weld together a disparate population into a huge, monolithic, and threatening Other. That Other is then assigned traits and habits that preclude sympathy and mold "Us" into a unity whose cohesiveness gives comfort ("Bilingual/Bilingüe" *WHG* 68).

However, this alienation does not have to be the final reality for the bilingual/bicultural individual. The heart of the poem and of Espaillat's articulations on bilingualism and biculturalism is found after the self-actualizing statement on the twelfth line, "I hoarded secret syllables," and by which the poem's narrator makes a stand against the monolingual (and the implied unicultural) paternal dictums. She decides to embrace two languages and two cultures and finds that "still the heart was one" (14). Here we see Espaillat's central belief concerning the human capacity to exhibit multiple linguistic abilities, and the potential of maintaining multiple cultural allegiances, and still remain a whole, unified individual with broader perspectives and understandings of the human condition. She briefly explains how this is possible in "Bilingual/Bilingüe:" "Luckily, there is another side to bilingualism: curiosity about the Other may be as natural and pervasive as group loyalty. If it weren't, travel, foreign residence, and intermarriage would be less common than they are" (68). The poem concludes with the speaker's hopes that her father understood, and secretly appreciated her deviations from his protective wishes—not only of his daughter, but also, and more importantly, protective of his ancestral language and culture:

> I like to think he knew that, even when,
> proud (orgulloso) of his daughter's pen,
>
> he stood outside mis versos, half in fear
> of words he loved but wanted not to hear. (15-18)

Espaillat emphasizes the positive aspects of possessing a bicultural and bilingual identity, although she does not neglect to point out some of the difficulties of negotiating a self that may have dual national and linguistic allegiances. This optimistic view of bi- and multiculturalism is a thematic concern addressed throughout her poetry, her essays, and personal expressions, through which she underscores the importance of ethnic inclusion and the avoidance of ethnocentric tendencies. This humanistic approach to migration and acculturation can be a source of positive affirmation to countless U.S. immigrants who live and love in this North American country while maintaining emotional, familial, political, and cultural ties to another land. In an interview, Espaillat stresses the positive aspects of possessing dual ethnicities:

> *I think where ethnicity is concerned, more is better, because the more people you can identify with and think of as "one of ours," the fewer people there are left to be classified as "not one of ours," and that's the classification that permits us to generalize, engage in stereotypes, think less of others, and otherwise treat them unjustly. Ideally, we would think of every human being as "one of ours," and that would be scientifically accurate, too: mankind really is, genetically, one huge family… Yes, I love having two cultures, two languages, two sets of associations, because it gives me so much more to remember, to write about and with and from! But I think that overemphasis on physical ethnicity, and exclusive loyalty to those with whom we have traceable blood ties, can be a dangerous thing as well as a source of comfort. It comforts by giving us a group that's "ours" and always "on our side," but it's dangerous when it suggests that all those others, the "not ours," are therefore not our responsibility, and perhaps even the enemy somehow. What I aim for is communication with everyone, people from every background, and what I believe is that we're all responsible for each other* (Interview Cruz-Hacker 9 July 2004).

It is evident that Espaillat has created an effective transnational identity by maintaining "*un pie aquí y el otro allá* 'one foot here and the other there'…settling into this Dominican/ American identity" (Toribio 1146). She consciously stands on the in-betweens while negotiating two places, two temporal spaces, two languages, and two ethnic identities. Moreover, whereas research and writings on the diaspora of many U.S. immigrant minorities may tend to emphasize the negative aspects of the acculturation process such as marginalization, voluntary or imposed separation, or prejudice and discrimination, throughout her writings, Espaillat transforms her exilic experiences into a successful process of new-identity-acquisition that has aided her to transcend to a place of self-affirmation that includes both worlds, the island and the mainland.

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Feminist Theory and International Relations: The Feminist Challenge to Realism and Liberalism

Tricia Ruiz

Since the end of the Cold War and the increased interdependence resulting from the globalization process, the field of international relations has faced major challenges to its core theoretical structure. It no longer revolves solely around the realist issues of war and security, but rather, international relations has broadened to include traditionally liberal concerns, such as the international political economy, socioeconomic development, human rights, non-state actors, and civil society. Apart from the two main theories of realism and liberalism, the feminist theory brings new perspectives to the international relations table. This paper will consider the feminist theory in international relations, and what can be learned from this perspective.

The first section will provide some key terms and main ideas in feminist theory, and will share its viewpoint with respect to world politics. The second section will present feminist critiques of existing international relations theory, and discuss how feminist theory explains the shortcomings of realism and liberalism. The paper will conclude by assessing the feminist theory in relation to the frameworks of realist and liberal theories. This section will ask: Does feminist theory have a separate argument strong enough to transform the field of international relations? Or if it is more a subset of other theories, can it still enhance and expand the discourse of international relations in significant ways?

Prior to presenting the main ideas in feminist international relations theory, we need to define two key terms -- 'gender' and 'patriarchy' – that are central to feminist discussion. 'Gender' is not a synonym for the term 'sex', or the biological difference between men and women, but instead "refers to the complex social construction of men's and women's identities...[and] behaviors...in relation to each other. Fundamental in the discourse on gender is the notion of power and power dynamics between genders."[1] Simply put, using the concept of gender, feminists analyze relations of power involving men and women, how that power is exerted, and how that interaction has been habitually, historically, and socially implemented over time (though not as a result of inherent or biological differences of either sex).

Lorraine Code helps us to understand the second term critical to feminist theory, 'patriarchy', which she defines as a system in which females are subordinate to men, in terms of power and status, and which is based on the belief that "it is right and proper for men to command and women to obey." Patriarchal roots, she notes, can be found as far back as Aristotle's assertion that women's biological inferiority is akin to her reasoning capabilities; later such systems became perpetuated by "the Judaeo-Christian world as under most other world religions."[2]

How do feminists use gender and patriarchy to describe the field of international relations (IR)? Overall, feminist theory says that most of the key players in IR, such as diplomats, policymakers, heads of government, and academic professionals, have been, and still are, males who come from patriarchal social and political backgrounds. Thus, discussions within IR remain largely constrained by those who lack consideration of women's roles in world politics (because they have not been trained to value and include the perspective of women). Should IR perpetuate the exclusion of women from its

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[1] Diana Thorburn, "Feminism Meets International Relations." SAIS Review v20, i2 (Summer-Fall 2000): 2. Expanded Academic ASAP, Infotrac (15 November 2003).

[2] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), PAGE, Netlibrary/eBook Collection (29 November 2003).

discipline, along with their potential contributions and additional viewpoints, IR will remain a prime example of patriarchy, in both its practice and accomplishments. Indeed, IR is frequently referred to as the "last bastion of the social sciences,"[3] indicating how rigid it remains in reconsidering itself through the 'gender lens'.

Feminists also apply the terms 'gender' and 'patriarchy' when analyzing how situations have been shaped to exclude women from the international political arena. For example, Eric M. Blanchard refers to a 'catch-22' situation, in which a candidate seeking political office will highly depend on past military service as qualification for the position, putting women at a disadvantage since they generally have less military experience. This significantly limits a woman's chances to attain a national government position directly involved with international issues of defense and security.[4] From this example alone, we can understand how the areas of domestic politics, the military, and even the topic of education (which is directly related to this example), are issues with respect to which feminists would argue that gender and patriarchy do not allow women equal access to power positions in world politics.

As with many theories, "feminist theory" reflects a wide range of perspectives generating many internal debates concerning how it should be represented. As Diana Thorburn notes, "there can never be a truly singular voice of feminist foreign policy simply because of the diversity of views within feminism itself."[5] However, a brief look at some relevant facets of the discipline can be seen through Lorraine Codes' summary of two salient areas within feminist IR theory, standpoint feminism and radical feminism.[6]

Standpoint theory considers how "the gendered construction of knowledge...[helps to] understand traditional topics in international relations" and is "alerting us to the idea that gender may be structuring how we think in the international context."[7] Author Martin Griffiths classifies feminist scholar J. Ann Tickner as a standpoint feminist.[8] Before even addressing existing IR theory, Griffiths first argues that the purpose and definition of 'theory' is in itself male-centered, because it is "oppressingly normative rather than conjectural and analytic."[9] Simply put, the processes of forming and learning theory is constructed around on automatically-accepted ideas of what is standard and normal, rather than first challenging the 'norm' and questioning if the 'standard' is objective enough. In this case, 'theory' lacks female perspective because it is not objectively sought at the onset of formulating ideas.

Tickner argues that IR is gendered to "marginalize women's voices," and stresses "that women have knowledge, perspectives and experiences that should be brought to bear on the study of international relations." For example, Tickner would argue that security, a main topic in IR, should not only be understood as "defending the state from attack," but should also consider that security for women "might be different because women are more likely to be attacked by men they know, rather than strangers from other states."[10]

In other words, in contrast to traditional IR views that view security as protecting the state from other states, feminists argue the topic of security should

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[3] Diana Thorburn. "Feminism Meets International Relations." SAIS Review v20, i2 (Summer-Fall 2000): 3. Expanded Academic ASAP, Infotrac (15 November 2003).

[4] Eric M. Blanchard. "Gender, International Relations, and the Development of Feminist Security Theory." Signs v28, i4 (Summer 2003): 1289. Expanded Academic ASAP, Infotrac (15 November 2003).

[5] Diana Thorburn. "Feminism Meets International Relations." SAIS Review v20, i2 (Summer-Fall 2000): 1-10. Expanded Academic ASAP, Infotrac (15 November 2003).

[6] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), 273, Netlibrary/eBook Collection (29 November 2003).

[7] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), 273, Netlibrary/eBook Collection (29 November 2003).

[8] Martin Griffiths, Fifty Key Thinkers in International Relations. (London; New York: Routledge, 1999). Netlibrary/eBook Collection (29 November 2003).

[9] Kjell Goldman, "International Relations: An Overview," in A New Handbook of Political Science, edited by Robert E. Goodin and Hans-dieter Klingemann. (New York: Oxford University Press, 1996), 423.

[10] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), 273, Netlibrary/eBook Collection (29 November 2003).

address acts of rape and violence, not only from foreign perpetrators, but from their own fellow citizens as well. Feminists would also add that occurrences of rape increase during times of war, and is even used as a method of ethnic cleansing among the rivalries within their state,[11] yet would never enter into typical IR discussions that focus solely on state-to-state interaction, simply because IR discussions traditionally remain focused on states as the key actors. Thus, the topic of security shows how gender consideration, excluded from the very beginning of the discussion, results in policymaking that would be subsequently exclusive of, and likely detrimental to, women. Prior to discussing any IR topic, standpoint feminist IR theory would first challenge those participating in the discussion, and those defining the key terms and issues, by critically asking them if the normative perspectives and working vocabulary are broad enough to effectively accommodate issues affecting women.

In addition to standpoint feminism, Griffiths also presents an explanation of radical feminist theory. "The radical feminist focus[es] on the lives and experiences of women...showing how women's activities are made invisible on the international scene."[12] She describes the writings of feminist Cynthia Enloe, who is famous for the question "where are the women?" One of Enloe's main arguments is that feminists should not only seek to include themselves in the higher realms of policymaking and leadership, but should search for where women have already fulfilled roles to "ensure the international system works smoothly and efficiently", such as "the work done by diplomatic wives and military prostitutes."[13]

Following this method of inquiry leads to consideration of more marginalized issues -- or "low politics" -- in IR, e.g., issues concerning sex trafficking and migration of labor. Enloe would argue that though such issues may be considered less important than the forefront issues of military and war, they serve to uphold the critical processes of smooth diplomacy and local relations between foreign states, in such areas as military bases in times of war, or at state dinners for foreign diplomats. Radical feminism stresses that women have never really been excluded from the core of international relations, but have simply not been publicly or professionally acknowledged for their past and present contributions to central issues in IR.

This leads to the next question: what are the main topics in IR, and what do feminists have to say about these issues? Theories of realism and liberalism will be considered in presenting feminist critiques of how IR issues are traditionally framed and addressed.

Realism centers its theoretical structure on how the state seeks power and defends its national interests against other competing states within a global anarchy, or where there is the lack of authority higher than the state. States seek security through a balance of power in the international arena, primarily through military means, and resorting to war, if necessary. Realists generally view the state as the key actor in international politics, and de-emphasize – or, as feminist theory argues, ignore -- the role of the individual.

Much feminist IR theory stems from a critique of realism, whose "socially constructed worldview continues to guide much thought about world politics."[14] First, feminists argue that realists overvalue the role of the state in defining international relations, without questioning how the state itself is internally structured, politically and socially. Feminist theory would consider how the state includes, or excludes, the views of its individual citizens, and how, in turn, the state's domestic views translate into foreign policies.

In challenging the concepts of a state defending its national interests, feminists would ask: who is defining the national interests? If women were included in such discussions, would the national interest be interpreted differently, and if so, how? How would such an outlook change foreign policy?

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[11] Eric M. Blanchard. "Gender, International Relations, and the Development of Feminist Security Theory." Signs v28, i4 (Summer 2003): 1289. Expanded Academic ASAP, Infotrac (15 November 2003).

[12] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), 273, Netlibrary/eBook Collection (29 November 2003).

[13] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), 272, Netlibrary/eBook Collection (29 November 2003).

[14] Charles W. Kegley and Eugene R. Wittkopf. World Politics: Trend & Transformation. (USA: Wadsworth, 2004), 36.

How would the definition of 'security' change? Would military and defense capabilities still be atop the agenda? Would women necessarily be less militaristic in their approach to IR issues?

An example of how gender studies might reflect a state's sociopolitical construction is reflected in a recent empirical study completed by Mark Tessler and Ina Warriner. To discover links between gender, feminism, and international relations within and among societies, Tessler and Warriner based their analysis on survey data from four areas in the Middle East, each quite different from one another socially, politically, and ideologically: Israel, Egypt, Palestine, and Kuwait. Seeing as how the Middle East offers an ideal example of states acting as realist actors, their findings are quite relevant to feminist IR theory. Three points deserve emphasis:

- "women are not more pacific than men in their attitudes toward international conflict"
- "regardless of the sex...[of the survey participant], persons who express greater concern for the status and role of women, and particularly for equality between women and men, are more likely than other[s]...to believe that the international disputes in which their country is involved should be resolved through diplomacy and compromise"
- "the promotion of progressive values...is likely to increase support in the Middle East for peace through diplomacy and compromise."[15]

Though the authors note these relationships can be better understood by including other countries in such studies,[16] their analysis shows that first, women are not necessarily pacifists by nature, and second, having key actors in the state system who believe in gender equality can be linked to increased use of diplomacy and compromise in their state's foreign policy.

Another feminist critique of realism concerns how realists define and emphasize power in IR discussions. Feminists would ask: who defines power, who has it, and how is it used? If power is defined by a patriarchal and realist society, which seeks global balances of power, then power is equated with military and economic strength. But how would this change if the discussion included women's viewpoints? Would the indicators of power be measured differently? Would power be seen as leadership in peace agreements, or might it be measured in terms of the ability to achieve transnational cooperation?

In relation to realism, feminist theory is clear: realism is the antithesis to achieving gender equality, both in discussion and practice, and even in its tools of war and security, patriarchy remains the central theme. States are the actors and the individual is of little importance. When the individual is de-emphasized, there is even less acknowledgement of a *female* individual, which effectively excludes feminist discussion.

In contrast to realism, liberalist theory emphasizes the role of the individual over that of the state. Instead of seeing anarchy and "a struggle for power" as a defining feature of world politics, these thinkers emphasize an international "struggle for consensus" as central to explaining international relations.[17] Liberalist tools include free trade, education, and international institutions to protect and promote the economic and civil interests of the individual.

Feminist critiques of liberalism address the economic inequalities inherent to free trade, which disproportionately affect women. Jacqui True argues that "male-centered macroeconomic indicators, such as the Gross National Product" undervalue the work of women.[18] True also reports that "on a world scale,

[15] Mark Tessler and Ina Warriner, "Gender, Feminism, and Attitudes Toward International Conflict: Exploring Relationships with Survey Data from the Middle East." World Politics 49.2 (1997): 250-281. Project Muse (15 November 2003).

[16] Mark Tessler and Ina Warriner, "Gender, Feminism, and Attitudes Toward International Conflict: Exploring Relationships with Survey Data from the Middle East." World Politics 49.2 (1997): 250-281. Project Muse (15 November 2003).

[17] Charles W. Kegley and Eugene R. Wittkopf. World Politics: Trend & Transformation. (USA: Wadsworth, 2004), 33.

[18] Jacqui True. "Feminism," in Theories of International Relations, edited by Scott Burchill and Andrew Linklater, with Richard Devetak, Matthew Paterson, and Jacqui True. New York: St. Martin's Press, 1996. (borrowed from UNLV Library, 16 Nov 2003)

women are a disadvantaged group: they own one per cent of the world's property and resources, perform sixty per cent of the labour, [and] are the majority of refugees, illiterate and poor persons." *(Ibid)*

This suggests that the capitalist structure is a patriarchal one, effectively marginalizing the participation and contributions of women in the economy, since much of their work is reflected in unpaid illegal or domestic settings that are not included in economic assessments. Indeed, liberalist institutions such as the WTO and multinational corporations have tended to create free trade agreements that weaken state protections on labor rights[19] and public social funds, which has served to negatively affect the large proportion of women in the labor force. This in turn camouflages issues of female exploitation, such as the gendered division of labor and the increase in sex trafficking worldwide.

Feminists also challenge liberalism's claim that international institutions provide for ways in which women can be become more politically and socially acknowledged and empowered. Since the leaders and the processes of formal international organizations come from patriarchal systems, their work can keep women at a disadvantage. Hilary Charlesworth critiques some of the recent formal international conferences, such as the Beijing Declaration and Agenda 21 in Rio. She notes that the wording in the documents shows that while some consensus was achieved in progressing issues critical to women, not enough was achieved to arrive at the real changes proposed by feminists. Charlesworth outlines some of the disappointing results, such as the lack of agreement on the definition of gender, and inability to secure benchmarks for measuring progress.[20] Such critiques underscore the challenges of feminist theory, because they indicate that highly publicized and widely supported liberalist women's movements do not necessarily equate with the goal of achieving real gender equality.

In light of these feminist criticisms of realism and liberalism (and the constraints working against their inclusion in IR discussions), we are led to ask: how feminist theory strong enough on its own to be considered separate from realism and liberalism?

This paper has argued that feminist theory should not be taken as a separate theory within IR, if one considers its relationships and discussion with the main IR theories of realism and liberalism. In its clear opposition against the overall realist theory, feminist theory aligns itself with liberalist ideals, especially through its view of the role of the individual and its emphasis on a cooperative world. Despite its criticisms of liberal patriarchal systems, feminist theory still relies heavily on liberalist international organizations and liberal pursuit of civil liberties in order to achieve gender equality. As feminism continues to widen perspectives in IR, its basic argument for international cooperation makes it a sub-category of liberalism,[21] and helps to strengthen and enhance the liberalist theory.

Certainly, there are strong arguments for the contention that liberalist progress has created disproportionate strife and marginalization for women, and that liberalist institutions themselves are gendered in favor of men. So with this in mind, feminist theory distinguishes itself from liberalist theory. However, in the broader context of liberalist theory, with its emphasis on the individual as the main actor – whether male or female — feminist theory and its critiques have a clear epistemological place within IR when liberalist theory is prevalent; whereas in discussions dominated by realism there is no place for the individual. Additionally, there is room for gender reconstruction of liberalist institutions, especially with the expansion of civil society and when women lead grassroots efforts. Civil society generally provides strong arenas for feminist and liberalist discussion on the importance of the individual, regardless of gender.

Of course, theory is not equivalent to implementation, and if in the future, liberalist global organizations do not reflect a more democratic structure inclusive of women's issues, this may signify what some more radical feminists are already

[19] Lorraine Code. Encyclopedia of Feminist Theories. (London; New York: Routledge, 2002), 154, Netlibrary/eBook Collection (29 November 2003).

[20] Hilary Charlesworth. "Women as Sherpas: Are Global Summits Useful for Women?" Feminist Studies v22, n3 (31 October 1998): 537. Proquest, Gender Watch (30 October 2003).

[21] Charles W. Kegley and Eugene R. Wittkopf. World Politics: Trend & Transformation. (USA: Wadsworth, 2004), 46.

predicting: that gendered institutions cannot be changed, but must be remade, regardless of shared ideals of cooperation. Still, liberalist processes of interdependence and globalization are fairly recent inclusions in IR discussions and continue to be challenged in constructive ways by criticism -- liberalist, feminist, or otherwise. There is hope for a growing recognition of the importance of the individual in a cooperative global system.

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The Ideal Woman

Jennifer Holt

Most everyone is familiar with the storybook image of America in the 1950s. Images are continually popularized of a simpler, happier time emerging from the aftermath of the Second World War. Families moved to the suburbs, fostered a baby boom, and forged a happy life of family togetherness in which everyone had a specified role. Women were considered domestic caregivers, with sole responsibility for the home and child rearing, while men 'brought home the bacon.' "Popular since the 1950s, this tenacious stereotype conjures mythic images of culture icons -- June Cleaver, Donna Reed, Harriet Nelson -- the quintessential white, middle-class housewives who stayed at home to rear children, clean house and bake cookies." (Meyerowitz, 1994) The creation of the "ideal woman" gave a clear picture to women of what they were supposed to emulate as their proper gender role in society. In effect, women began to construct their identities around this image, and may still continue to do so today.

Gender construction is nothing new to American society; nor to any other society, for that matter. In fact, nearly all societies in the world practice some form of structuring based on gender roles. The question commonly posed is whether one is born with innate concepts of gender or whether our gender preferences develop through our experience of social constructions of acceptable gender roles. I believe society plays an immense role in the construction of individual gender roles, and in turn our identity. This is not to say that society has complete control over this construction. Evidence shows that biological sex-linked factors involving hormones like testosterone do contribute to the formation of gender. However, to place this in proper perspective we would need to investigate how the social construction of testosterone as an indicator of aggression has motivated a gender role in which males are expected to be aggressive and rewarded for such behavior, while girls are expected to be very passive and should be discouraged from engaging in similar aggressive behavior (Lippa, 2002).

There is considerable evidence pointing to the view that gender construction is largely accomplished through social factors. For instance, the very term 'gender' refers to "all of the socially defined, learned, or constructed accoutrements of sex." (Lippa, 2002) Furthermore, scholars in the field of both sociology and psychology believe that gender is constructed through the modeling of appropriate behaviors and the use of systematic rewards and punishments. Evidence also shows that many aspects of gender are simply not innate, as evidenced by children who do not exhibit a gender-based preference for such things as friends, clothing or toys when placed in gender-neutral settings. Only after negative reactions from peers, the media, or social institutions like schools do many of these children begin to "like" or take on the gender roles they have come to see as appropriate for them. That which is deemed acceptable in a society is effectively self-socialized to the point where it becomes a construction of one's identity. With supporting evidence, I will show how the "ideal woman" stereotype reflected a political-economic effort to socially construct (and reward women for assimilating to) socially acceptable gender roles in the aftermath of World War II.

There are important reasons for discussing the 1950s in regard to the creation of the stereotype of the ideal woman. But only recently have historians of American culture begun to pay close attention to the socializing experiences of women from 1945 to 1960 (often referred to as the "post-war" era). Before this change, historians considered these years fairly insignificant for women, often seeing them merely as a passive link between women workers in World War II and the political activists of the 1960s. In truth, however, the ideological and institutional constraints of 1950s American society had a significant impact on the construction of women's identities during this time period.

The formulation of these constraints can be attributed to the end of World War II and the emergence of the Cold War. World War II and the propaganda of Rosie the Riveter had provided an opportunity for many women to participate in the

workforce. At the close of the war, employers reestablished the prewar sexual division of labor. To justify the discriminatory practices against women, popular culture began to create the concept of the proper role for women. "Studies of postwar culture found that government propaganda, popular magazines, and films reinforced traditional concepts of femininity and instructed women to subordinate their interests to those of returning male veterans" (Meyerowitz, 1994). In fact, women had achieved perhaps too much economic independence during World War II, which makes the oppressive qualities of the domestic ideal of the 1950s all the more harmful to the construction of women's identities.

The beginnings of the Cold War also provided an impetus for constraints placed on women in the post war era. Elaine Tyler May targets the reasoning behind this in her classic work, *Homeward Bound*, which discusses white, middle class families in the 1950s. In the midst of our Cold War instability and anxiety,

> (t)he family seemed to offer a psychological fortress, a buffer against both internal and foreign threats. In this ideological climate, independent women threatened the social order. Under cultural pressure and with limited options for work outside the home, women, contained and constrained, donned their domestic harness (Meyerowitz, 1994).

While media popularized this ideal, it is clear that institutional pressures restricted a woman's ability to act in opposition to the domestic, caregiver model.

The period immediately following the 1950s is also important to the domestic ideal and may provide the most insight into the condition of the domestic ideal among women today. The 1960s are marked by the emergence of the Women's Movement; a time of liberating experiences. For the better part of a decade, women actively generated a mass movement in the public realm, paying special attention to work force issues. Significantly, this mass movement did not occur overnight. Despite the reinforcement of the domestic ideal, women aspired to continue working after the post-war era. This reveals what might be the dominant paradox connecting the cultural domestic ideal to the reality of women's lives. "In an era marked by the quiescence of organized feminism and the celebration of domesticity by public figures and popular culture, increasing numbers of women were seeking employment outside the home" (Meyerowitz, 1994). The culture was simply not portraying a lifestyle women wanted: indeed, studies indicate as many as 80% of post-war women felt working outside of the home would lead to a more satisfied life (Renzetti & Curran, 2004). Moreover, women were educated during the 1960s at a higher rate than in any previous time, many of them in fields not traditionally thought to be accessible to women. Birth control also became readily available during this time, which increased the sexual independence and professional career options of women.

The 1960s, with its increase in women workforce participation, increased education and availability of birth control, appears to be the antithesis of the "ideal woman" of the 1950s. However, most studies indicate that while women triumphed in these other areas, they still felt it necessary to adhere to the domestic ideal as much as possible in order to maintain their identity as a "good woman, mother, and wife." So while women in effect achieved great leaps of liberation during the 1960s they were still bound by the oppression of the domestic ideal, much like the problem that working women of today face.

Throughout almost every source discussing the domestic ideal there is a consensus that media, primarily magazines and film, were the primary methods of which this model was transmitted to women, in effect the social construction agent. Women's magazines played an extremely important role in this transmission because there was a significantly large readership. For example, "By the end of the 1950s, the 'Seven Sisters' alone (Better Homes & Gardens, Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's, Redbook and Woman's Day) reached over 34 million consumers."

Secondly, women's magazines spread a very uniform picture of women as household-family orientated consumers. For the purpose of this content analysis, magazine advertisements will be the specific focus of my attention. Two significant studies were conducted regarding the roles portrayed, or perhaps even created, by the advertisements in women's magazines of the 1950s. The first study I will discuss was conducted in the 1960s by Betty Friedan regarding the advertising content of popular

women's magazines, in her classic study *The Feminine Mystique*. Friedan was perhaps the first to identify what is now referred to as the stereotype of the "ideal woman." She revealed how the feminine mystique

> held that women could find fulfillment only in sexual passivity, male domination, and nurturing maternal love. It denied women a career or any commitment outside the home and narrowed woman's world down to the home, cut her role back to housewife (Friedan, 1963).

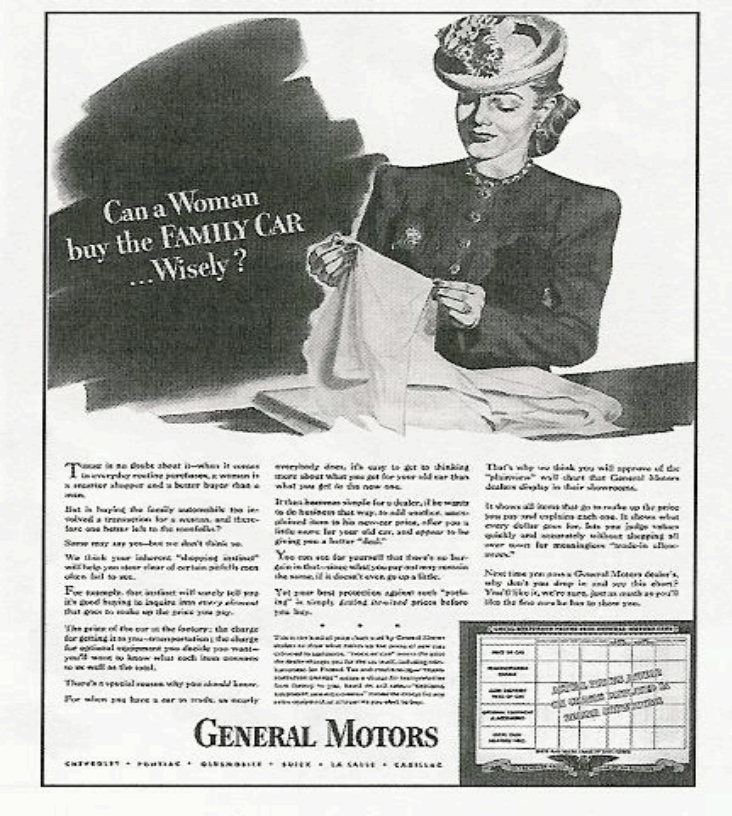
Friedan alleged that magazines did not passively participate in enforcing these gender roles, but were in fact an active force behind the creation of what she termed the "feminine monster." She claimed that the manufacturing sector "had decided to make women better consumers of home products by reinforcing and rewarding the concept of women's total fulfillment through the role of housewife and mother" (Friedan, 1963). She was greatly alarmed at how advertising had become such a powerful force in shaping the social fabric (i.e. pressuring women to stay at home); she was also alarmed by how decisively these advertisements shaped the creation of a woman's identity in terms of this ideal model.

Courtney and Lockeretz, authors of *A Woman's Place: An Analysis of Roles Portrayed by Women in Print Advertising*, also made significant contributions to the research on the "ideal" woman. Their research focused on the working and nonworking roles of women and men and the various types of products with which they were shown to be associated in the advertisements appearing in women's magazines. In accordance with the norms of the ideal woman, they found that 90% of women were shown in "nonworking roles in the home," which refers to the unpaid labor of housework and child rearing. Women were found to be eleven times more likely to be associated with housework than were men. Furthermore, they concluded that women were more likely to be consumers of cleaning aids, food, clothing and cosmetics; men, on the other hand, were shown purchasing more important and expensive items such as cars, industrial goods and services like banking and insurance. Interestingly enough, women were often shown with a male shadow of guidance and wisdom even when purchasing such items as cleaning aids and cosmetics.

Based on their research, Courtney and Lockeretz concluded there were four stereotypes underlying the ideal woman portrayed in magazine advertisements; significantly, their analysis revealed a common emphasis on projecting male superiority and feminine domesticity. The first stereotype held that a woman's place is in the home with her family: "Motherhood and the care of the home and husband are the ultimate goals of a woman's life and her greatest creative opportunity." This was reflected in the consumerism of such products as cooking and cleaning aids. It was not uncommon for such advertisements to insinuate (at times rather explicitly) that "a good wife and mother would buy this," or "a good wife would want to protect her family."

Family Circle, 1955

The second stereotype held that women do not make important decisions. This was seen by the fact that women made only trivial purchases, often with a male shadow. It was also illustrated by the idea that when women were shown outside the home, they were completing tasks such as shopping, rather than participating in the work force. The following image captures this stereotype nicely:



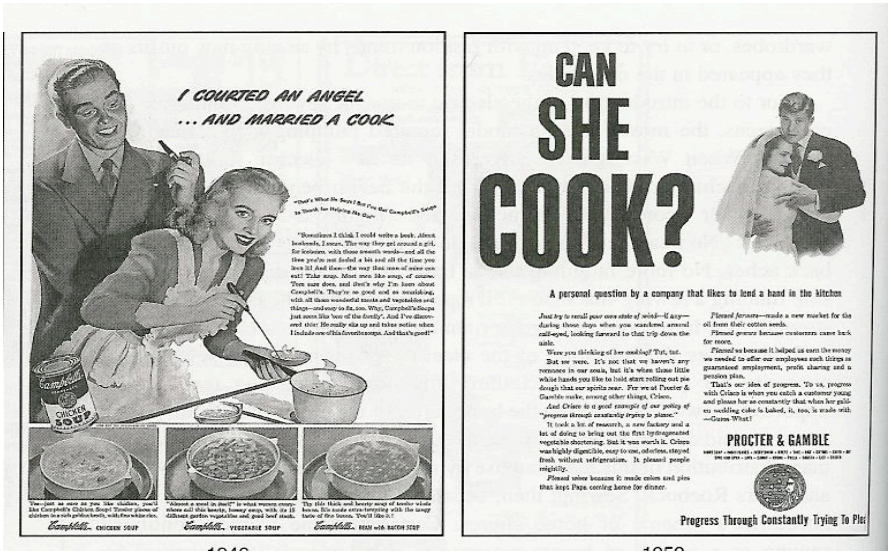
Family Circle, 1956

A third stereotype projected women as dependent on and in need of a man's protection and acceptance. This was continually perpetuated in magazine advertisements through allusions to a woman needing to please her husband by doing tasks such as cooking a correct meal or washing his clothing with the correct laundry detergent. This stereotype also dealt with the mass consumption of beauty products, for fear that if a woman was not beautiful enough for her husband he could simply get rid of her for a wife that would please him.

The idea of beauty also ties into the fourth stereotype: men regard women primarily as sexual objects and thus of a lower status. This stereotype is perhaps the most detrimental to the construction of a woman's identity. By projecting women as second-class citizens, this stereotype empowered men and society to enforce expectations of the ideal woman, thereby promoting the return to domesticity that justified the release of women from the post-war workplace.

Better Homes & Gardens, 1956

The concept of the "ideal woman," is still with us today through film, advertisements and television shows that reminisce about the happier, simpler times that the 1950s supposedly held. However, the long lasting effect of the construction of the feminine gender role on women's identities is still having an impact on the women of today. The ideal woman has now become the concept of the super woman, who is expected to complete all the tasks of an ideal woman of the 1950s while maintaining the career goals of the modern woman. The combination of the two has resulted in an ideal that is perhaps so far above the reality of women's lives that women themselves will continue to struggle and struggle but never attain it.



Better Homes & Gardens, 1950-1951

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Reporting Child Maltreatment: Challenges Faced by Teachers

Natalie B. Morejohn

Child abuse and maltreatment are complex problems with serious immediate and long-term ramifications for children, their families, and for society. These problems transcend all structures in society, including familial, educational, health, social, and legal. The long-term effects of child abuse can afflict our society for years to come, as young victims become adults (Lungren, 1996).

It is tragic that abuse and neglect in the home are now the leading causes of death for young children in this country-- more than those who die in car accidents, house fires, falls, or drownings. Everyday, thousands of children are abused both physically and emotionally, often by members of their own family (Lungren, 1996).

More than three children die each day in the United States because of child abuse in the home. Of these fatalities, 85% of the children are under 6 years of age. In 2001, Stanislaus County Child Protective Services received 11,148 referrals for child abuse from individuals and agencies. In that same year, 18 out of every 1000 children in Stanislaus County became a victim of child abuse (California Abuse Prevention Commitee, et al, 2004).

If we are to turn the tide on the increasing incidence of child abuse and neglect, we must strengthen our efforts in the areas of prevention and early intervention with youth and their troubled families. The importance of citizens as well as professionals who deal with children recognizing and helping to prevent child abuse cannot be understated (Lungren, 1996).

One of the difficulties encountered by researchers and practitioners in the area of child abuse and maltreatment is that of definition. For our purposes, we will define child abuse as: *any act of omission or commission that endangers or impairs a child's physical or emotional health and development.* This includes:

- Physical abuse or corporal punishment resulting in traumatic condition
- Physical neglect and/or inadequate supervision
- Sexual assault and/or exploitation
- Emotional abuse and/or emotional deprivation

The act of inflicting injury or allowing injury to result, rather than the degree of injury, is the determinant for intervention in child abuse cases.

Child abuse is usually not a single act of physical abuse, neglect or molestation, but is typically a repeated pattern of behavior, and a child abuser is most often a parent, stepparent, or other caretaker of a child. He or she can be found in all cultural, ethnic, occupational and socio-economic groups.

Ultimately, the actual definition of child abuse, neglect, or maltreatment is determined by the judiciary system. All states in the U.S. have laws defining child abuse and that specify the actions that can be taken to protect the child and punish the offender. When a child's safety and health are clearly threatened, child protection agencies are empowered to separate the child from his or her family (Foster, et al, 1989).

Strong traditions in North American culture work against a simple definition and recognition of when child abuse is occurring. Children in the past have been considered the property of their parents, and there has also been a tradition that "parents know best" and that discipline is a parent's right (Foster et al, 1989).

The first child abuse case ever prosecuted in the U.S. occurred in 1874, when Henry Beigh, the founder of the American Society for the Prevention of Cruelty to Animals, managed to bring a case to court by arguing that a young abused girl (Mary Ellen Wilson) deserved as much protection as animals. Up to that time, no child protection statutes had been in force (Foster, et al, 1989).

Over the past century, other protective laws and agencies have been created, but there has been ongoing reluctance on the part of the public, as well as doctors, nurses, police, lawyers, etc. to interfere

with the privacy of the family and rights of parents. In the United States, the Federal Child Abuse Prevention and Treatment Act of 1974 established guidelines for all states defining what constitutes abuse, neglect, and maltreatment. This act made reporting mandatory for some groups of professionals, e.g. teachers, health care workers, police, and recreation leaders (Foster, et al, 1989).

The purpose of this study is to describe current methods and procedures available to public elementary school teachers for assessing, detecting and reporting evidence of child abuse and neglect. (The child abuse and neglect under consideration here is typically perceived in but sustained outside the environment of public elementary schools.) A central component of my analysis involves assessing the typical knowledge and orientation of teachers with respect to procedures for reporting child abuse and neglect. In addition, this study attempts to assess the actual frequency and individual experience of reports of child abuse and neglect. Information gained could be useful in planning programs that will help teachers become more comfortable and accurate in detecting and reporting child abuse and/or neglect, and might lead to more streamlined and efficient approaches to dealing with specific cases of maltreatment.

I argue that the magnitude of child maltreatment in today's society demands more effective attention from public elementary school personnel, especially teachers. The basis of this premise is derived from this researcher's observations and from accounts and reports of people working with children. A cascade of personal and social problems can stem from child maltreatment. Oftentimes the victimized children do not receive proper care and attention from authority figures other than their parents; to compound the problem, teachers and other school personnel receive minimal training in how to recognize and handle apparent child maltreatment. If children were to receive better immediate care from teachers and other school personnel who perceive evidence of apparent child abuse or neglect, not only might the short-term/ proximate consequences be addressed more adequately, but long-term/ ultimate effects might be reduced significantly, or possibly even eliminated, as well. Fortunately, a set of mandates are in place to facilitate and motivate more effective responses from teachers and school personnel, but those who would act on these responsibilities face challenges that call for careful attention. Let's begin with the mandates.

Background Information

The first child abuse reporting law in California was enacted in 1963. These early laws mandated only physicians to report physical abuse. Over the years, numerous amendments have expanded the definition of child abuse and the persons required to report. Procedures for reporting categories of child abuse have also been clarified. In California, certain professionals are required to report known or suspected child abuse. Other citizens, not required by law to report, may also do so (TAC, Inc. 2005).

The primary intent of the reporting law is to protect the child. Protecting the identified child may also provide the opportunity to protect other children in the home. It is equally important to provide help for parents. Parents may be unable to ask for help directly, and child abuse may be an underlying means of calling attention to family problems. The report of abuse may be a catalyst for bringing about change in the home environment, which in turn may help to lower the risk of abuse in the home (TAC, Inc. 2005).

The Penal Code (PC) defines child abuse as: "a physical injury which is inflected by other than accidental means on a child by another person." It also includes emotional abuse, sexual abuse, neglect or abuse in out-of-home care. Child abuse *does not* include "mutual affray between minors," "reasonable and necessary force used by a peace officer" under specified circumstances, or spanking that is reasonable and age appropriate and does not expose the child to risk of serious injury (P.C. 11165.6, Welfare and Institutions Code [W&IC] Section 300).

Under the law, if the victim is a child (a person under the age of 18), the following types of abuse must be reported by anyone who is legally mandated to report it (regardless of the age of the perpetrator):

- A physical injury inflicted by other than accidental means on a child (P.C. 11165.6).
- Child sexual abuse including both sexual assault and sexual exploitation. Sexual assault includes sex acts with children, intentional masturbation in the presence of

children and child molestation (P.C. 11165.1).

- Willful cruelty or unjustified punishment, including inflicting or permitting unjustifiable physical pain or mental suffering, of the endangerment of the child's person or health (P.C. 11165.3). "Mental suffering" in and of itself is not required to be reported. However, it may be reported (P.C. 11166[b]).
- Unlawful corporal punishment or injury, willfully inflicted, resulting in a traumatic condition (P.C. 11165.4).
- Neglect of a child whether "severe" or "general," must also be reported if the perpetrator is a person responsible for the child's welfare. It includes acts or commissions harming or threatening to harm the child's welfare (P.C. 11165.2).
- Any of the above types of abuse or neglect occurring in out-of-home care (P.C. 11165.5).

Legally mandated reporters include "childcare custodians," "health practitioners," "employees of a child protective agency" and "commercial film and photographic print processors," which are defined as follows:

"Childcare custodian" means a teacher, an instructional aide, a teacher's aide or a teacher's assistant employed by any public or private school, or a classified employee of any public or private school, or a classified employee of any public school, who has been trained in the duties imposed by the Penal Code; administrative officer, supervisor of child welfare and attendance or certificated pupil personnel employee of any public or private school; an administrator of a public or private day camp; administrators and employees of public or private youth centers, youth recreation programs and youth organizations that have been trained in the duties imposed by this article; a licensee, an administrator or an employee of a community care facility or a child day care facility licensed to care for children; a Headstart teacher; a licensing worker or licensing evaluator; a public assistance worker; an employee of a childcare institution including, but not limited to, foster parents, group home personnel and personnel of residential care facilities; a social worker or a probation officer, or any person who is an administrator or presenter of, or a counselor in, a child abuse prevention program in any public or private school (P.C. 11165.7).

Child abuse must be reported when one who is a legally mandated reporter "…has knowledge of or observes a child in his or her professional capacity, or within the scope of his or her employment whom he or she knows or reasonably suspects has been the victim of child abuse…" (P.C. 11166[a]).

"Reasonable suspicion" occurs when "it is objectively reasonable for a person to entertain such a suspicion, based upon facts that could cause a reasonable person in a like position, drawing when appropriate on his or her training and experience, to suspect child abuse" (P.C.11166[a]). Although a bit wordy, the intent of this definition is clear: if you suspect, report (TAC, Inc. 2005).

You must make a report immediately (or as soon as practically possible) by phone. A written report must be forwarded within 36 hours of receiving the information regarding the incident (P.C.11166[a]). Written reports must be submitted on Department of Justice forms, which can be requested from your local child protective agencies (police or sheriff's department, a county probation department or a county welfare department) (P.C.11168).

The report must be made to a "child protective agency;" a child protective agency is a county welfare or probation department or a police or sheriff's department (P.C. 11165.9, P.C.11166[a]). Exceptions are reports by commercial print and photographic print processors, which are made to the law enforcement agency having jurisdiction (P.C.11166[c]).

Those persons legally required to report suspected child abuse have immunity from criminal or civil liability for reporting as required (P.C.11172[a]).

Any person not mandated by law to report suspected child abuse has immunity unless the report is proven to be false and the person reporting knows it is false, or the report is made with reckless disregard of the truth or falsity of the incident (P.C.11172[a]).

No supervisor or administrator may impede or inhibit a report or subject the reporting person to any sanction (P.C.11166[f]).

Persons other than those legally mandated to report are not required to include their names when making a report (P.C.11167[e]).

Reports are confidential and may be disclosed only to specified persons and agencies (P.C.11167.5).

Mandated reporters and others acting at their discretion are not liable civilly or criminally for photographing the victim and disseminating the photograph with the report (P.C. 11172[a]).

A physician and surgeon or dentist, or their agents by their discretion, may take skeletal x-rays of the child without the consent of the child's parent or guardian, but only for purposes of diagnosing the case as one of possible child abuse and determining the extent of such child abuse (P.C.11171[b]).

Neither the physician-patient privilege nor the psychotherapist-patient privilege applies to information reported pursuant to this article in any court proceeding or administrative hearing (P.C.11171[b]).

A person who fails to make a required report is guilty of a misdemeanor punishable by up to six months in jail and/or up to $1,000 fine (P.C.11172[e]). He or she may also be found civilly liable for damages, especially if the child-victim or another child is further victimized because of the failure to report (Landeros vs. Flood [1976] 17C.3d.399).

Any person entering employment which makes him/her a mandated reported must sign a statement, provided and retained by the employer, to the effect that he or she has knowledge of the reporting law and will comply with its provisions (P.C.11166.5[a]).

Any person who fails to report an instance of child abuse which he or she knows to exist is guilty of a misdemeanor which is punishable by confinement in the county jail for up to six months or by a fine of not more tan $1,000 or by both (P.C.11172[e]).

After the investigation is completed or the matter reaches a final disposition, the investigating agency must inform the mandated reporter of the results of the investigation and any action the agency is taking (P.C.11170[b][2]).

The Problem

Resources to manage and repair abuse and neglect, however, have not kept pace with the growing number of identified victims (Sedlak, 1996). In addition, evidence suggests that efforts to prevent abuse and neglect hold promise and deserve greater attention (U.S. Advisory Board on Child Abuse and Neglect, 1991).

According to the U.S. Department of Health and Human Services, the total number of children seriously injured by abuse or neglect had quadrupled between 1986 and 1993 (Ecker, 2001). While this increased rate may be attributable to growth in awareness and reporting, experts suggest that the numbers are too large for this to be the explanation behind the sudden escalation (Sedlak, 1996).

Abuse and neglect occur across all lines of race, religion, region, and income, and the incidence rate of abuse and neglect is identical for all races (Ecker, 2001). In addition, it is illegal not to report suspected child maltreatment in most states, but each state does have its own laws for reporting child abuse or neglect.

Children who have been harmed or who are at risk for harm are most frequently recognized by professionals who come into close or regular contact with children outside the family setting (Ecker, 2001), and teachers frequently occupy such positions. The most common source of abuse reports is the public school (Sedlak, 1996), because teachers and other school personnel have the opportunity to recognize clinical and behavioral changes that could signify problems in the child (Ecker, 2001).

Regarding the physical neglect of children, whenever possible, the family in question should be given ample opportunity to receive education about appropriate discipline, parenting skills, safe hygiene, the value of medical follow-up and access to community resources that might facilitate proper care for a child (Ecker, 2001). If school personnel can encourage reluctant or uninformed parents to recognize the value of attentive care for children, other interventions may never be necessary (Dubowitz, et al, 1994).

Regarding child sexual abuse, legal and forensic guidelines are clear and experts are available. The advice and support of experts is essential. The proper gathering of evidence is critical, both for legal reasons and for the well-being of the child (Ecker, 2001). An inappropriate or unnecessary examination

can be as traumatic as sexual abuse itself (American Academy of Pediatrics, 1999).

In general, once abuse is suspected, it is the obligation of the witness or provider to report the evidence to child protective services. When the child appears to be in imminent danger, a report to police may bring about the temporary or permanent removal of the child from the custody of the suspected perpetrators while further investigation takes place (Ecker, 2001).

In many communities, the systems to support children who would benefit from removal from an abusive or neglectful family are faltering. The investigating staff may be overworked and unable to quickly and thoroughly investigate all allegations of abuse and neglect (Ecker, 2001). In some cases, the foster care system may be overburdened and not available when needed (Sedlak, 1996). These factors add to the reluctance among nurses and school personnel or mandated reporters (i.e. teachers) to report for fear that the child will be traumatized further by removal to an unexamined or risky environment. This fear is even greater when allegations of abuse and neglect are not certain or clear (Ecker, 2001).

Accuracy in reporting helps to preserve resources so that they are available for the most needy cases. In addition, a valuable part of the management of child abuse and neglect includes selecting clinical experts to help with cases in which the signs and symptoms are confusing. In many communities, a team of experts in the identification and management of abuse and neglect is available for consultation. Online resources, if properly screened, can also help. Advice and consultation with experts remains an important part of the management of abuse and neglect (Ecker, 2001).

Parent education is a significant factor in preventing child abuse and neglect. Assessment of a family's strategies for coping with the stress of a sick or cranky child helps school personnel or mandated reporters identify families at risk and intervene with education or referral to community agencies (Ecker, 2001). Growing evidence supports the value of home visits during the immediate postnatal period. A national program, Healthy Families America, has been providing quality home visits in many communities (Ecker, 2001). Nurses' (and teachers') contributions have been critical to this program and other like it (Healthy Families America, 2001).

Children who live in poverty are at greater risk for abuse and neglect. An awareness of the factors that contribute to poverty—a lack of education, political and economic factors, and substance abuse—can help guide the nurses' (and teachers') involvement in community life. To the degree that communities can decrease the number of people living in poverty, communities can decrease the number of children at risk for abuse and neglect (Ecker, 2001). Foster care also plays an invaluable role in the treatment of child abuse and neglect. Nurses (and teachers) can make a contribution by supporting adequate funding for foster care in their communities (Ecker, 2001). The awareness of signs, symptoms and methods of prevention on the part of all professionals who come into contact with children remains a cornerstone in the management of suspected child abuse and neglect (Ecker, 2001).

So as to hopefully reduce the proximate and ultimate effects of child maltreatment, better methods for detection and report could be implemented at the place where young children are (usually) supposed to be during the day—school. The sooner child maltreatment can be detected and reported in a young child's life the better; and it is the belief of this researcher that controlled school settings provide the best opportunity for careful monitoring of child maltreatment and for sensitive and responsible methods of helping abused children.

Child maltreatment has complex implications and fears associated with it, often making it difficult to properly assess and address such issues, especially in a school setting. Abuse and neglect in general are taboo subjects, and many may not want to speak up, for fear of legal repercussions detrimental to the child's welfare. Some may be afraid to wrongfully accuse the suspect, or simply do not remember the procedures involved. In addition, signs of child sexual abuse may not be as obvious as with other kinds of abuse where bruises, etc. are visible, and many may feel it simply too much of a hassle to deal with if they are already overloaded, have never had previous experience or have had negative previous experience dealing with such type of abuse. More can be done to orient school personnel to recognize and

respond to the myriad signs if child abuse and neglect.

The Purpose of the Study

The purpose of this study was tri-fold: (1) to assess teachers' current knowledge of child abuse and neglect reporting; (2) to assess the actual frequency and experience of child abuse and neglect reporting; and most importantly (3) to assess the possible barriers that may exist to adequate/accurate reporting. After compiling results of these assessments, recommendations will be made based on the findings. This research should be of value in helping to fill the "information gap" experienced by many educators by providing information pertinent to the planning of programs to help teachers become more comfortable, and more accurate, in detecting and reporting child abuse and/or neglect. As knowledge deficits among teachers are detected in the results of my surveys, ways to reduce these deficits can be developed and implemented; for example, well-targeted in-service training programs might lead to more streamlined and efficient approaches for dealing effectively with specific cases of child maltreatment.

Methodology

The method of research for this study revolved around a simple survey/questionnaire. The questionnaire was designed to be completed in less than fifteen minutes. The questionnaire addressed demographics (gender, age, grade(s) teaching/taught, and years teaching/taught) as well as questions pertaining to: what training respondents had received regarding child abuse issues; when they had received such training; whether they felt the training had been adequate; whether they had ever suspected abuse; if so, how many times they had suspected abuse; whether they had ever officially reported abuse; if so, the number of actual reports, when the last report had been made, and the most common type of abuse reported, whether they had sought assistance from anyone else during the reporting process, and if so, to whom they had sought assistance, and the reasons they sought assistance/advice; whether they had ever suspected a case and not reported it; and if so, what their reasons were for not reporting it. Respondents were also asked to rank-order different types of abuse from most severe to least severe, and to rank order the same types of abuse from most easy to detect to most difficult to detect. They were then asked questions regarding what types of training they felt would be useful, whether they even thought more training would help address their issues, and whether they felt there were any specific barriers to reporting, and if so, what these might be.

Volunteers were recruited off campus through direct call for participants in Stanislaus County. Data was collected from three elementary schools in the Modesto City Schools district. No government agencies were used, and because this was exploratory research my focus was not limited to any particular age or racial/ethnic groups of teachers. All procedures were thoroughly explained to ensure voluntary participation. Since this was a pilot study, teachers who participated were only of the elementary school level (K-6), though future studies could be designed to include the junior high and high schools levels, which could also yield invaluable data with regards to child abuse and neglect issues. Participants were given a questionnaire packet complete with instruction sheet, consent for participation form, the actual survey, and a debriefing form at the end to be filled out at their leisure within one to two week's time (though about 15 minutes total was needed to complete the packet—10 minutes to read and 5 to write). Questionnaires were collected after distribution and were analyzed and cataloged.

Included in the study questionnaire packets were human subjects rights and risks information, for example, one risk may include being reminded of abuse and/or assault. The consent form clearly outlined what was being asked and potential participants were expected to decide for themselves, without coercion, to participate or not. Thus, we followed the ethical principles of the American Psychological Association. The consent form also contained specific information regarding whom the participants could contact if they were to become anxious or distressed.

Results

The majority of respondents were female teachers of the 40-50 year old age range (27/N=47). There were only three male respondents, and two of the respondents were former teachers now in administration or serving as school principals. Four respondents were either special education (dealing

with the learning handicapped), special intervention, or reading instructors for different grade levels. There were four no-responses to the demographics section of the questionnaire. The majority of respondents were K-6 elementary school teachers though (37/N=47), and the range of years teaching/taught was from two to 39 years.

The majority of respondents did say they had had pre-service or in-service training regarding child abuse and/or neglect, while others marked that they had had training at the college level as well. The majority of respondents had marked that their training was done some time in the 1990s, and only a few respondents had had training in the 2000s. Some had no response to the question or simply didn't remember when they had last had the training. The majority of respondents felt the training they had received was not adequate and many said they still felt uncertain about what constitutes certain types of abuse; some felt that they had not received enough updates, that their training was too brief, or that they simply lacked information pertinent to the issue(s).

The majority of respondents said that they had suspected abuse in their schools, and only six out of a total of forty-seven said they had not. The majority of respondents marked that they had only suspected abuse one to five times; the next highest amount was six to ten times, and six respondents had no response to the question.

The majority of respondents also admitted to having reported abuse in their school, but for the most part, this amounted to only one report in their careers. Two respondents indicated they had reported at least ten times, and five respondents indicated they had reported about five times.

The most common date of the last report made by respondents was one to five years ago, the next being less than a year. Fourteen respondents had no response to the question. The most common type of abuse reported was physical abuse, followed by physical neglect. Perhaps because the signs or symptoms of emotional and sexual abuse are not as obvious as physical abuse and/or neglect these types of abuse were not typically reported.

The majority of respondents did admit to having sought assistance from another person regarding reporting procedures, to simply ask if the case(s) were reportable or not, or for other reasons pertaining to the case(s). Only four respondents said they had not done so, and eight had no response to the question. Of those who had sought assistance regarding reporting, the most common resources from whom they had sought assistance were school administrators, followed by school nurses, then other teachers, then Child Protective Services (CPS). Some even responded that they sought advice from a spouse, a training binder, or the District Attorney's office. The most common reason respondents had turned to these resources for help/advice was for questions regarding reporting procedures; the next most common reason was to see if a case was reportable or not. Other reasons included seeking additional information, such as the case/background history of the suspected abuse victim, the status of current investigated case(s), safety issues, or for follow-up on a current case.

The majority of respondents marked that they had never suspected a child abuse case and not reported it, but fourteen out of the forty-seven respondents said that they had. Of those who had suspected a case and not reported it, their stated reasons for doing so included not being sure if it qualified as a type of child abuse, not having enough evidence to support the suspected case, fearing the suspected abuse would not be considered severe enough to yield removal of the child form the abusive home, presumptions based on lack of response to previously reported cases, and believing the case would not be taken seriously. One respondent discovered the child had actually lied about being abused.

The majority of respondents rank-ordered sexual abuse as the most severe or highest priority to address expediently, and physical neglect as the least severe or lowest priority to address expediently, with physical and emotional abuse falling somewhere in-between these; five of the respondents marked that they felt all types were equally severe and equally important to address expediently.

The majority of respondents rank ordered physical abuse as the most obvious or easy to detect, followed by physical neglect, then emotional abuse, and finally sexual abuse (as the most difficult to detect). [Note: There were some counterintuitive responses most likely due to misunderstanding of the wording of the question; that is, some respondents had rank ordered the types of abuse opposite to what

the majority of respondents had, i.e. physical abuse as most difficult to detect and sexual abuse as most obvious/easy to detect, which goes against common belief. It is probable these individuals misinterpreted how to rank order the various types of abuse and really meant to indicate the opposite of what they had actually marked.]

Of the types of training/tools respondents thought would be more helpful in the detection and report of child abuse, some marked that they felt educational videos, easy-to-use handbooks, placards, and visual hands-on aids would be helpful in better addressing the issues of child abuse, however, most respondents indicated that outside professional help/instructional seminars and yearly updates would be the most beneficial to them.

Though most respondents thought more training with regards to child abuse issues would help address the problems of child abuse and/or neglect, some had no response to the question, and one respondent suggested parent training would be more helpful.

Some of the common barriers to reporting had to do with teachers feeling like nothing is actually done about the cases; or that irate parents will challenge or harass them if they report. Many teachers were simply not sure what constitutes a reportable case or not. Others thought it would be difficult to prove the existence of abuse, and many believed there would not actually be any follow though. Many were afraid to wrongfully report abuse and seemed to feel that "looks" are not enough to make a case. Others who have had experience with agencies like CPS feel that too little is accomplished in response to their notification; they often fear repercussions for the child. The majority of respondents admitted to lack of information, fear of being identified as the reporter, fear of a misreport, and fear that the abuse could escalate if reported and investigated. Some responded that children have been found to be afraid to tell "family secrets", and that the "hidden symptoms" of abuse are not obvious to teachers. Many teachers felt a lack of confidence in their judgment as reporters, in addition to frustration with CPS in regard to not getting positive results previously, or felt that cases are simply ignored by such agencies.

Recommendations and Conclusions

It is the opinion of this researcher that many of these reporting barriers can be reduced or even eliminated with the simple implementation of informational devices that are sensitive/pay attention to issues teachers have admitted having problems with in regards to perceived abuse and neglect. Reporting would also be easier if agencies like CPS were to follow the legal guidelines laid out in the Penal Code to their fullest extent in as many cases as possible. The reality is that humans in general will not always perform optimally, which puts a damper on these suggestions. Still, this does not negate the fact that we should attempt improvement in a number of areas for the sake of teachers/reporters and ultimately for the sake of abused children.

For example, since many respondents admitted to a lack of confidence in their ability to accurately assess suspected abuse, perhaps an easy-to-follow flow chart could be devised that simply outlines what types of things teachers need to address in their assessments, i.e. the who, what, where, when, and how details of suspected cases. If the guidelines are met, then they might feel more comfortable/confident in deciding whether or not to make a report. The same could go for the procedures involved in making a report—another flow chart could be devised outlining exactly what teachers need to do, whom to contact for advice in making a report, and whom to make the report to. The ultimate goal here would be to reduce a teacher's inhibitions and fears regarding reporting issues, as well as to better educate them on what to report or not report, by the simple use of a flow chart outlining relevant issues and answers to FAQs.

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The Infinite Wisdom of Georg Cantor

Dan Westerman

Throughout history, there are many examples of brilliant mathematicians who changed the world with new and astounding theories. Many challenged the common notions of their time, proposing new ways of conceiving shapes, numbers, and relationships. In his Elements, written around 300 BC, Euclid discarded the belief that visual representations could justify a hypothesis, and insisted on an axiomatic system of logical proofs. In 225 BC, Archimedes had the insight to realize that he could, in theory, construct a polygon whose area was arbitrarily close to that of a given circle. Over 1800 years later, this notion of arbitrarily or infinitely close was utilized by Leibniz and Newton in the creation of Calculus, a development that changed all sciences forever. Following this long line of innovators we come to a man named Cantor, whose theory of infinite sets was so groundbreaking that it has been dubbed "one of the most disturbingly original contributions to mathematics in 2500 years" (Burton, 625).

Georg Ferdinand Ludwig Phillip Cantor was born on March 3, 1845, in St. Petersburg, Russia. Many of his relatives were artists or musicians, thus from an early age Cantor was surrounded by an environment that fostered his incredible genius and creativity. Both of his parents may originally have been Jewish, but his father later converted to Protestantism and his mother to Catholicism (Maor, 54). This rich religious background led the young Cantor to develop a deep interest in theology, especially in questions concerning the nature of the infinite.

His father wanted him to study engineering, as this would be much more profitable than mathematics, so in 1862 Cantor started at a university in Zurich, Germany. After one semester he had had enough of this mundane science, and his father finally agreed to let him study mathematics. Cantor then transferred his studies to the University of Berlin, where he was fortunate enough to study under Weierstrass, Kummer, and (less fortunately) Kronecker. In 1867, at the age of only 22, he received his PhD for a thesis on number theory, and accepted an appointment at Halle University in 1869.

Intrigued by Weierstrass' groundbreaking and rigorous analysis, Cantor wrote a series of papers on representations of functions as trigonometric series. It was these papers that led him quite unexpectedly to the study of sets of points on the real line. This topic quickly revealed itself to be much more complex than it originally seemed, and Cantor decided to begin a complete investigation into the intricate workings of sets, both finite and infinite. His next paper, *Über eine Eigenshaft des Inbegriffes aller reellen algebraischen Zahlen* (*On a Property of the System of all the Real Algebraic Numbers*), marked the birth of Set Theory (Burton, 625).

It is important here to discuss the concept of the infinite up until Cantor's time. Mathematicians felt that there were two types of infinities, the *potentially infinite* and the *actual infinite*. Of these, only the former was acknowledged as something that could be used in mathematics. The potentially infinite referred to a process which could be repeated over and over, but which at any given step was still finite. The idea of the potentially infinite can be seen in the concepts of limits and mathematical induction. The actual infinite, on the other hand, was strictly forbidden. Even the legendary Gauss expressed this view in an 1831 letter to Schumacher: "As to your proof, I must protest most vehemently against your use of the infinite as something consummated, as this is never permitted in mathematics. The infinite is but a figure of speech" (quoted in Burton, 628). Cantor could not accept this idea. In his mind, there were clearly sets, or aggregates, which were infinite. This entirely new concept required the deep investigative powers of Cantor's genius, and we now turn our attention to some of his specific results.

We begin with a definition: "By an 'aggregate' we are to understand any collection into a whole M of definite and separate objects m of our intuition or our thought" (Cantor, 85)[1]. Of fundamental importance was the ability to compare the sizes of

[1] This definition, and several others in this paper, are given in Cantor's original (translated) wording. Although they seem quite esoteric, it is interesting to see the original work. Note that in the majority of the paper we use the modern terms "set" and "cardinality," instead of Cantor's "aggregate" and "power."

two sets. At first, it seems that we can simply count the elements of each set and compare these numbers. This works for finite sets, but what about those pesky infinites? Cantor had the burst of insight to realize the relative size of two sets could be discerned by establishing a correspondence between their elements. In his words, "We say that two aggregates M and N are 'equivalent,' in signs M~N or N~M, if it is possible to put them, by some law, in such a relation to one another that to every element of each one of them corresponds one and only one element of the other" (Cantor, 86). Today, we understand the "law" to be a function that is both one-to-one and onto, that is, a bijection. We then see that two sets M and N are equivalent if there exists a bijection f: $M \to N$ (note that, since f is a bijection and thus has an inverse, the order $N \to M$ or $M \to N$ is irrelevant). With a little consideration, we see that this notion of equivalence is quite sufficient; it makes perfect sense that two sets are equal in size if we can match up their elements.

Now we can actually use this definition to see what it means to be able to count something. We can easily count the elements of any finite set. For example, consider the set {a,b,c,d}. We see that there are four elements, but how did we arrive at this conclusion? Clearly, we can just start with the first element and count 1, 2, 3, 4. What we have actually done is exhibited the bijection f: $\{a,b,c,d\} \to \{1,2,3,4\}$ given by f(a)=1, f(b)=2, f(c)=3, and f(d)=4. Since it is the set $N=\{1,2,3,\ldots\}$ of natural numbers that we use to count, we can extend the concept of counting to infinite sets with the following definitions[2].

(1) A set S is said to be *denumerable* if there exists a bijection f: $N \to S$.
(2) A set S is said to be *countable* if it is either finite or denumerable.
(3) A set S is said to be *uncountable* if it is not countable.

Thus, the set N is fundamental to our understanding of infinite sets. We can also think of a set as being denumerable if we can list all of its elements, since the very act of creating the list involves placing one element 1st, one 2nd, and so on. With this in mind, Cantor set out to determine which sets were denumerable.

We immediately see that N is denumerable by the trivial bijection f: $N \to N$ given by f(n)=n. Significantly more interesting is the fact that the set E^+ of all positive even numbers is denumerable, as is shown by f(n)=2n. We have just proved that $E^+ \sim N$, but E^+ is clearly a proper subset of N! Is this a contradiction? It definitely goes directly against Euclid's fifth common notion from Elements: "The whole is greater than the part." Indeed, when Galileo discovered that "there are as many squares as there are numbers because they are just as numerous as their roots," he thought that something was seriously wrong (quoted in Burton, 627). Similar "paradoxes" were discovered by Bolzano in the early 1800s, but it was Cantor's close friend, the famous mathematician Richard Dedekind who, in 1888, not only accepted this sort of relationship, but formalized it with a definition: "A set M is infinite if it is equivalent to a proper subset of itself; in the contrary case, M is finite." This definition of an infinite set was quite a contrast to the common practice of saying that something was infinite if it was not finite. This concept, however revolutionary, is tame compared to many of the other remarkable results of Cantor's theory.

It is easy to show that the odd numbers, the squares, and many other subsets of N are also denumerable, but what about the set Z of all integers? This set should have at least twice as many elements as N, right? Not even close. We normally think of the integers as the set $\{\ldots,-2,-1,0,1,2,\ldots\}$, but there is nothing to stop us from listing them as $\{0,1,-1,2,-2,3,-3,\ldots\}$. What we have done here is listed the integers according to the bijection f: $N \to Z$ defined by $f(n) = \frac{n}{2}$, *for n even* $\quad f(n) = \frac{1-n}{2}$, *for n odd*. Thus, Z is denumerable. Finally, it can be proved that every subset of a countable set is countable, as the examples above illustrate. None of these results have been too surprising by today's standards; all of the sets considered involve only integers.

One might now wonder if the only denumerable sets are those consisting solely of integers. For example, we know the set Q of rational numbers is

[2] From here on we use N to be the set of natural numbers, which should not be confused with the general set N which Cantor used in his definitions.

dense[3], so how could we possibly list all of its elements? Remarkably, Cantor showed that this is indeed possible, but as Fermat would say the proof is too lengthy to include here. With similar proofs, he showed that NxN is denumerable, and even that a denumerable union of denumerable sets is denumerable.

Now it begins to seem that we have so many tricks up our sleeves that we can match up any two infinite sets. Surely if even the rationals are denumerable, we must wonder what is not. Cantor must also have wondered this, and his investigation into this matter brings us to a truly great theorem: The set R of real numbers is uncountable. Two proofs of this were given by Cantor, the most well known being his famous "diagonal proof." We wish to present the first proof, given in his 1874 publication, which requires a preliminary definition and theorem given in the appendix.

Theorem: The set R of real numbers is uncountable.

Proof: It suffices to show that the interval I=(0,1) is uncountable, for if R were countable then the subset I would be countable by a previous result. If, to the contrary, we assume that I=(0,1) is countable, we can list the elements of I as $I=\{x_1, x_2, x_3, \ldots\}$. First, select a closed subinterval I_1 of I such that $x_1 \notin I_1$. Next, select a closed subinterval I_2 of I_1 such that $x_2 \notin I_2$. Continuing in this fashion, we obtain a nested sequence of closed, bounded intervals $I_1 \supseteq I_2 \supseteq \ldots \supseteq I_n \supseteq \ldots$ such that $x_n \notin I_n \ \forall n \in N$. Thus, the Nested Intervals Property guarantees the existence of a real number ξ such that $\xi \in I_n \ \forall n \in N$. But then $\xi \neq x_n \ \forall n \in N$. But $\xi \in I$ since $I \supseteq I_n \ \forall n \in N$, so we have produced an element of I that is not on our list, which contradicts that we had listed all the elements of I. Hence, (0,1), and therefore R, are uncountable. QED

An immediate consequence of this theorem is that the set R-Q of all irrational numbers is uncountable, for if R-Q were countable then $(R\text{-}Q)\cup(Q)=R$ would be countable. Consequently, there are infinitely many more irrationals than rationals.

We have now confirmed that uncountable sets exist, and thus that there are different "sizes" of infinity. Considering this, we would like some way of ordering these sizes, and for this we would like to have symbols representing each size. Cantor of course realized this, and gave the following definition: "We will call by the name 'power' or 'cardinal number' of M the general concept which, by means of our active faculty of thought, arises from the aggregate M when we make abstraction of the nature of its various elements m and of the order in which they are given" (Cantor, 86). Upon deciphering this into English, we realize that the cardinal number of a set is what we know about the set if we do not consider what its elements are: the only thing we can see in this case is its size. Thus, the cardinality of a set represents how large it is. The notation used for the cardinal number of a set S is $\overline{\overline{S}}$. A very important remark is that, for sets A and B, $\overline{\overline{A}} = \overline{\overline{B}} \Leftrightarrow A \sim B$. As a standard basis from which to work, Cantor defined $\overline{\overline{N}} = \aleph_0$ *and* $\overline{\overline{R}} = c$.[4] Full details on comparing the sizes of sets by ordering the cardinals are given in the appendix, but for now we will accept $\aleph_0 < c$.

We now must ask if there exist cardinals greater than c. That is, are there sets that are even bigger than R? Cantor was sure that there must be, and also thought that he knew exactly where to find one: the real plane. Specifically, he reasoned that there must be more points in the unit square than in the unit interval. After many fruitless attempts to prove this, in 1877 he finally ended up proving just the opposite: the unit square is equivalent to the unit interval! Thus, there are just as many points in the two dimensional plane as on the one dimensional line! This completely unexpected result prompted a letter from Cantor to Dedekind, exclaiming "I see it but I do not believe it" (quoted. in Dunham, 273). In fact, it was later proven that $\overline{\overline{R^n}} = c \ \forall n \in N$.

[3] A rational number is simply a fraction. To say that Q is dense means that between any two real numbers there lies a rational number.

[4] Considering the domain (0,1), the functions $f(x)=(b-a)x + a$ and $f(x)=\tan(\pi x-\pi/2)$ show that, for any interval (a,b) of real numbers, we have (a,b)~(0,1)~R, and thus $\overline{\overline{(a,b)}} = \overline{\overline{(0,1)}} = \overline{\overline{R}} = c$.

Where, then, can we find a more abundant set than *R*? Still convinced that such sets must exist, Cantor persevered and was finally rewarded with the theorem that today bears his name.

Cantor's Theorem: If A is any set, then $\overline{\overline{A}} < \overline{\overline{P(A)}}$.[5]

Proof: We begin by showing that *P(A)* is at least as large as *A*, and then show by contradiction that *P(A)* is not equivalent to *A*.

First, consider f: $A \to P(A)$ given by f(a)={a}. This function maps all of the elements of A to some of the elements of *P(A)* (it is 1-1), so *P(A)* must be at least as large as *A*. Thus, $\overline{\overline{A}} \le \overline{\overline{P(A)}}$.

Now, assume $\overline{\overline{A}} = \overline{\overline{P(A)}}$. Then we have $A \sim P(A)$. By definition, this means there exists a bijection g: $A \to P(A)$. Now we consider the set $B=\{a \in A: a \notin g(a)\}$. *B* is clearly a subset of *A*, and so $B \in P(A)$. Hence, since g is a bijection, there must be some $x \in A$ such that g(x)=*B*. We now ask whether or not x is an element of *B*. There are two cases:

Case 1: Assume $x \in B$.

Then by definition of *B*, we have $x \notin g(x)$. But g(x)=*B*, so $x \notin B$, which contradicts our assumption. Thus, this case is impossible.

Case 2: Assume $x \notin B$.

Then by definition of *B*, we have $x \in g(x)$. But g(x)=*B*, so $x \in B$, which contradicts our assumption. Thus, this case is also impossible.

Since both cases lead to contradictions, we are forced to conclude that our initial assumption was false. That is, $\overline{\overline{A}} \ne \overline{\overline{P(A)}}$.

Hence, we have $\overline{\overline{A}} \le \overline{\overline{P(A)}}$ and $\overline{\overline{A}} \ne \overline{\overline{P(A)}}$.

Therefore, $\overline{\overline{A}} < \overline{\overline{P(A)}}$.

QED

So: the set P(*R*) is larger than *R*, but this theorem actually goes far beyond finding a set with greater cardinality than *R*. Since, for any set A, P(A) is itself a set, we can construct P[P(A)], and P[P[P(A)]], and so on. We then obtain the following sequence:

$\aleph_0 < c < \overline{\overline{P(R)}} < \overline{\overline{P(P(R))}} < \overline{\overline{P(P(P(R)))}} < \ldots$. Thus, we have a profound truth: there is an infinite hierarchy of infinities.

To us, Cantor's theory seems amazing. It is a beautiful example of mathematical ingenuity at its best, and "has been called the first truly original mathematics since the Greeks" (Dunham, 280). Unfortunately, in Cantor's time it was nothing short of blasphemy. Outraged at his use of the actual infinite, and even more at the transfinite arithmetic he created in his 1895 Contributions to the Founding of the Theory of Transfinite Numbers, the mathematical community erupted into one of the most bitter disputes in history. Most wounding to Cantor were the attacks of one of his former teachers, Leopold Kronecker.

Kronecker was undoubtedly a great mathematician, but also an ultraconservative one. He believed that any math not constructible from the natural numbers alone was ridiculous, and particularly disliked Weierstrass' Analysis. He once brought his esteemed colleague to tears with a comment concerning "the incorrectness of all these conclusions used in the so-called present method of analysis" (Burton, 631). If Kronecker could not handle ε's and δ's, one can imagine his feelings towards Cantor's infinities.

As a justification for his use of the actual infinite, Cantor once argued "to deny the actual infinite means to deny the existence of irrational numbers" (Maor, 55). Unfortunately, this is exactly what Kronecker did, apparently preferring the state of mathematics in the time of Pythagoras over that of the 19th century. Kronecker's extreme distaste for the new Set Theory seemed to devolve into a personal hatred of Cantor himself, and affected much of our genius' life. Cantor always wanted to get an appointment at a more prestigious university, but Kronecker, as a senior professor at the University of Berlin, made this impossible. He even went so far as to block many of Cantor's articles from being published in all but the smallest journals. It should be noted that Cantor did have some supporters at the time, most notably Weierstrass, Dedekind, and David Hilbert, but Kronecker's opposition was just too strong.

All of these personal attacks, along with the stress of his great mathematics (particularly his attempts to

[5] P(A) is the set of all subsets of A, and is called the power set of A.

prove the continuum hypothesis), had a devastating effect on Cantor[6]. In 1884 he had his first nervous breakdown, and was committed to a psychiatric clinic in Halle. After a short time he was released, and went on developing his theory. He was again in fine form in 1888, and after years of defending his work remarked "My theory stands as firm as a rock; every arrow directed against it will return quickly to its archer" (Dunham, 283). Tragically, in 1899 the death of his son Rudolph initiated another descent. Cantor was forced back to the psychiatric clinic in 1902, 1904, 1907, and 1911, and finally retired from Halle University in 1913. By this time his theories were beginning to gain much more widespread acceptance, but the damage had been done, and Cantor died in the clinic on January 6, 1918 (Dunham, 279).

This was indeed a tragic end to one of the most brilliant men the world has ever known, but his ideas live on, continuing to amaze and inspire countless mathematicians. Particularly, the great German mathematician David Hilbert would not allow Cantor's theory to die. He regarded this new field as "the finest product of mathematical genius and one of the supreme achievements of purely intellectual human activity" (quoted in Burton, 629). Hilbert also defended the Set Theory from future attackers, insisting "no one will expel us from the paradise that Cantor has created" (quoted in Dunham, 281). Clearly, Cantor left a great treasure for all future generations of mathematicians.

We conclude with a statement by Cantor himself, who never for a moment doubted the truth of his revolutionary mathematics:

> *This view, which I consider to be the sole correct one, is held by only a few. While possibly I am the very first in history to take this position so explicitly, with all of its logical consequences, I know for sure that I shall not be the last!* (quoted in Dunham, 280)

[6] Modern psychiatric analysis also shows that he may have been bipolar (Dunham, 279).

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Appendix

Preliminaries for Cantor's Proof that *R* is Uncountable

Definition: A sequence of intervals $I_n, n \in N$, is *nested* if the following chain of inclusions holds: $I_1 \supseteq I_2 \supseteq ... \supseteq I_n \supseteq I_{n+1} \supseteq ...$

Theorem (Nested Intervals Property): If $I_n, n \in N,$ is a nested sequence of closed bounded intervals, then there exists a number $\xi \in R$ such that $\xi \in I_n \ \forall n \in N.$

The Ordering of Cardinal Numbers

Definitions: Let A and B be sets.

(1) $\overline{\overline{A}} = \overline{\overline{B}}$ *iff* $A \sim B$; *otherwise* $\overline{\overline{A}} \neq \overline{\overline{B}}$.

(2) $\overline{\overline{A}} \leq \overline{\overline{B}}$ *iff there exists an injection* $(1-1)$ $f : A \rightarrow B$.

(3) $\overline{\overline{A}} < \overline{\overline{B}}$ *iff* $\overline{\overline{A}} \leq \overline{\overline{B}}$ *and* $\overline{\overline{A}} \neq \overline{\overline{B}}$.

Remarks:

(i) On the set of cardinal numbers, it can be shown that the above relation $\leq$ is reflexive, transitive, and antisymmetric, and that for any two elements x and y either $x \leq y$ or $y \leq x$. Thus, it is a total order on the set of cardinal numbers. If we accept the generalized continuum hypothesis, then $\leq$ is also a well ordering on the set of cardinal numbers.

(ii) Many of the familiar properties of $\leq$ on the real numbers, such as $x \leq y$ iff x<y or x=y, can be shown to carry over to the cardinal numbers.

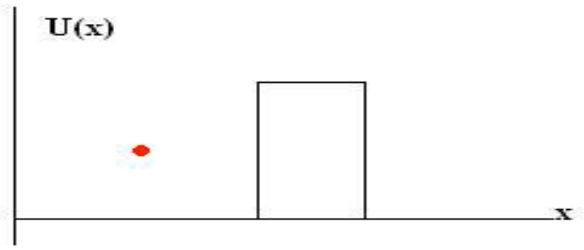
Undulation

Tony Darrin Kelly, II

A complicated concept in physics—quantum tunneling—can be tackled by employing an historical, philosophical, descriptive approach to effectively mask challenges otherwise posed by complex mathematical analyses. Drawing on Plank, Bohr, de Broglie, Schrödinger, and Born, I develop four tools for analyzing and presenting my solution to the quantum tunneling phenomenon: Plank's constant, the matter wave, Schrödinger's equation, and the probability wave.

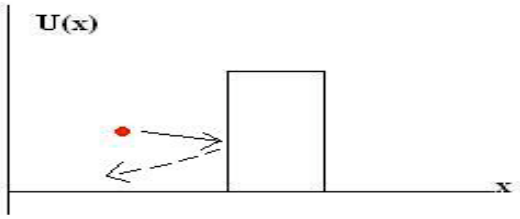
Physics is a difficult science. For some people, the word *physics* summons up ideas of complex mathematics, seemingly elaborate concepts, or images of Robinson Crusoe scientists. While a true grasp of the underlying nature of physics does rely on mathematical foundation, we can approximate this understanding by means of a conceptual, descriptive analysis. The ancient Greeks demonstrated this with their various schools of philosophical thought devoted to such issues as matter divisibility: can matter be divided into smaller pieces endlessly? We will pursue a conceptual approach to a complex problem, in which quantum mechanics will be presented with little or no mathematics. Such an approach will demonstrate that although physics may be difficult, it can be grasped with some effort. First, a question will be posed with respect to quantum tunneling. Then the conceptual tools to the problem will be given. Finally, these elements will be unified to present a readily accessible solution to the puzzle posed in the question.

Consider the following scenario: a particle is approaching a science fiction force field. We will call the particle a charged particle, perhaps an electron, and the field will be constructed of energy. If any object with less energy than the force field touches the field, this object will be reflected away.



Potential Barrier with Particle

We might expect that throwing a baseball directly at the barrier will merely cause the ball to be reflected backwards in our general direction.



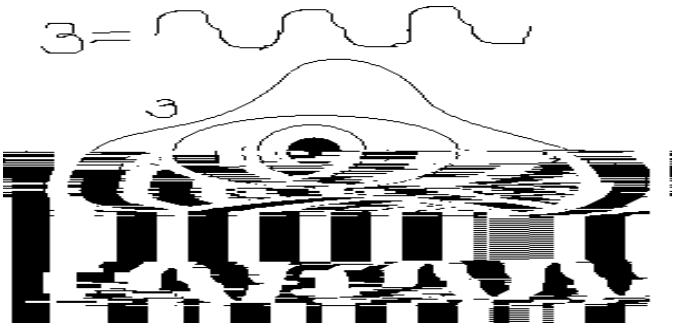
Classical Particle Reflection

However, there is a case within the realm of quantum mechanics whereby our particle can approach the barrier, only to appear on the other side! How can a particle approach a barrier that repels objects and yet come to appear on the other side? We will need to develop some tools.

The first tool will be taken from a household kitchen. Let's imagine an object we might think of as a black body. This object allows incoming radiation such as light waves to enter, but the object keeps most radiation from being emitted: the oven. Radiation can enter through a small glass opening into the oven and be reflected around the walls of the oven until it is either absorbed by the walls or finds an exit through the glass opening again. As the walls of the oven absorb the radiation, they then radiate both heat (a form of electromagnetic radiation) and other waves of their own. As long as the radiation is contained within the oven, the oven appears black, thus giving us the term black body. When a black body releases radiation outward, the energy of the radiated waves depends upon the temperature of the black body. Starting from a certain temperature, we might expect increasingly larger intensities if we increase the frequency of our radiation. Thankfully, this is not the case, as we can see if we imagine the intensities of objects such as fire. While a fire's

temperature may increase (and thus the intensity), the intensity of the radiation peaks for these various temperatures: a fire of a certain temperature will have peak intensity at a given frequency, but only by increasing the temperature will we be able to see higher frequencies with a higher peak intensity. This maximum intensity is noted by Plank's constant, denoted by the letter "h." Plank's tool is the idea that emitted radiation can only have frequencies of discrete (specific) values. We might think of the energy associated with these frequencies as rungs on a ladder. If we stood on the top rung of a ladder, and then hopped to a lower rung, we would "radiate" a wave. In this case, we radiate a sound wave of a certain frequency. If we stood on the top rung and jumped down to an even lower rung, we would emit a higher frequency wave with more energy; however, we find we can only radiate when we jump specific levels downward.

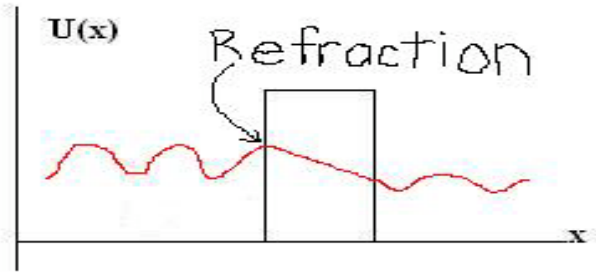
The second tool is taken from Bohr and de Broglie. Bohr tells us that there is only so far we can go before we reach the bottom rung of our ladder. More specifically, Bohr tells us that there is some minimum energy that our particle, the electron, may have while it is moving around an atom. However, when we combine this idea with Louis de Broglie, we have the foundation of our second tool. Louis de Broglie showed that our electron also behaves like a wave. This means that matter behaves in a fashion called a matter wave. This is a very important tool and idea. If matter behaves like a wave, especially on an atomic level, then that means particles have wavelike characteristics, such as being able to pass through our window opening in the oven. We will call this tool a *matter wave.*



Bohr's Atom with de Broglie Electron-wavelengths

The third and fourth tools are an extension of the matter wave. Schrödinger gave us the third tool, which is an equation to describe a matter wave, but Max Born's physical interpretation of the Schrödinger equation is the fourth tool. Born has shown that the wave equation can be used to determine the probability wave of finding the particle described by the wave. Thus, we will view the waveform in terms of probability. Examining the Bohr atom and de Broglie electron-wavelengths, we determine that the wavelengths determine the average probability, but not specific locations, of finding the electrons. Consider the concept in Schrödinger's Cat. There are many states, many waves that describe the condition of the cat when we are not observing the feline directly. There is a superposition of states, and in this case, can be simplified to various probability waves of one wave describing the "cat as alive" and another wave describing the "cat as not alive." The superposition of these waves and when we open the box will determine the state of the cat. Likewise, we do not know the exact locations of the electrons in our Bohr-de Broglie atom, but if we look and pinpoint the exact location directly, we then do not know precisely where the electron was before we looked (whether it has always been in the same spot or elsewhere), as we did not know the condition of the cat before we looked.

Using these tools we can now unify them and provide a solution to our particle barrier problem:



Matter Wave consideration

The particle is a matter wave with some probability of existing on either side of the barrier. When the electron appears upon the other side, we call this quantum tunneling. The tunneling becomes less likely to occur as we make our object larger (as in our baseball earlier.) Furthermore, we can apply this concept further. If matter can be seen as a matter wave, and these waves are waves of probability, then we can logically expect money to appear in our

wallets. By opening and closing our wallets and looking inside them intermittently, given enough time, there is the probability that money should appear within the wallet. We should note, however, that the chance of some currency appearing within our wallet will take some amount of time beyond the lifetime of the universe. There is a non-zero probability that the money might appear during the course of time, but the time needed for this large of an object is more time then we have time to offer.

We have shown many complicated concepts that have shaken the foundations of classical physics and placed a foundation for quantum mechanics. However, we have shown the quantum tunneling in aspects that did not require rigorous, if any, mathematics. Throughout this treatise, we have demonstrated that although physics is a difficult science, a grasp of mathematics' technicalities allow for a communication of both simple and complex concepts. We have found a science that affects both the seen and the unseen, and that the realm of physics can be enjoyable to just sit in ponder or a place to rigorously advance our understanding of the universe.

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Exploration of a Lung Cancer Cell Line: Resistance and Sensitivity to Taxol

Eliza Hyatt

Through the years, we have become increasingly aware of the risk and prevalence of cancer in various forms. Although the causes attributed to these cancers can range from genetic makeup to lifestyle choices, one form that has received much media attention is lung cancer. It is supposed to be the most preventable form of cancer, but, out of all deaths due to cancer, the deaths of 32% of men and 25% of women are attributed to lung cancer. With new technologies available to help treat and survive cancer, this is a staggering number of people. One of the ways to treat cancer is with the use of a drug called taxol, which holds great promise for cancer sufferers.

Cancer occurs when a cell does not function properly or begins to divide uncontrollably. Normally, cells have a predetermined lifespan. When they are too old or need to be replaced, the cell will undergo apoptosis, which is programmed cell death. After the death of the old cell, neighboring cells can undergo mitosis, which is a type of cell division, to maintain the number of healthy cells in the organism. The life cycle of cells involves a complex self-checking system that ensures the proper function of a cell. Most of the time, a cell can repair itself during the replication process. If a mutation occurs or if a cell is not the correct size, and the cell cannot repair itself, a cascade of events will take place that initiates apoptosis of the cell. If an error occurs in one of the self-checking systems, the cell may divide instead of dying. The continuous replication of this faulty cell is what leads to cancer.

It is known that only 5% of our DNA actually code for proteins that are transcribed and translated. The remaining 95% of our DNA used to be thought of as junk DNA. Part of this junk DNA included sections called Alu sequences. Alu sequences are an example of middle repetitive DNA, which, in humans, encompasses more than 5% of the entire genome. It has been found that the Alu sequences make RNA transcripts, but they are not translated into proteins. When certain cells are stressed by heat shock, increased amounts of Alu transcripts have been found to be produced along with the expected mRNA from genes that respond to stress conditions. This may indicate that the Alu sequences, along with other stretches of DNA that do not code for proteins, actually regulate or influence the expression of other genes.

Currently, a popular method of treating cancer is by way of surgical removal of any cancerous growth and then treatment with chemotherapeutic agents. One such chemotherapeutic agent is a drug called taxol, also known as paclitaxel. Taxol interferes with the normal function of microtubule growth in cancerous cells. It binds to the tubulin protein of microtubules, locking them into place. This microtubule/taxol complex is not able to disassemble, which is detrimental to the functioning of the cell because the disassembly is necessary for cell growth and division. Taxol is also able to induce programmed cell death in cancer cells by binding to Bcl-2, which is an apoptosis stopping protein, serving to hinder their function. Taxol is able to selectively target cancerous cells by interfering with the functioning of both rapidly dividing cells and cells that contain the apoptosis stopping protein.

The lung cancer cells to be studied are called adenocarcinoma cells, which were isolated in 1972 from a 58-year old Caucasian male. The A549 parent cell line is sensitive to Taxol, meaning that Taxol is effective in controlling the survival and replication of these cancer cells. The A549-T24 cells are the resistant to Taxol, meaning that these cells can tolerate the presence of Taxol even at relatively high concentrations. Since the resistant A549-T24 cells were derived from the sensitive A549 cells, any altered characteristics between the cell lines are probably due to this developed resistance, which is also a common problem in vivo. Insight about the mechanism of this developed resistance may assist future treatment of such cancers.

The mutated A549-T24 cell line has already been found to produce increased amounts of a protein necessary for cell division called tubulin. It is not known whether the increased amounts of tubulin are

due to an increased number of copies of that gene in the mutated cell line, or to an over expression of the gene that codes for the tubulin.

One of my key hypotheses is that the expression of Alu sequences in the DNA of the cells I am studying will differ for cells drawn from cell lines sensitive to Taxol and those that are resistant to it. If in fact I find a difference in the expression of Alu sequences in the A549 versus the A549-T24 cells, this could provide some clues regarding the functions of these sections of DNA in *all* cells. I will examine this by determining the methylation of these Alu sequences in each cell line. Methylation of a gene, or of a specific region on the DNA, indicates deactivation of that gene in the cell. If there is a difference in the methylation between the A549 and the A549-T24 cells, this could indicate a certain mechanism in the development of resistance to taxol.

To test for the differential methylation between two cell lines, I need to extract the DNA from each cell line. This is done by a series of centrifugations in different buffer solutions to break open the cells while keeping the DNA intact, followed by wither phenol/chloroform or ethyl alcohol washings to remove the chemicals remaining in solution. Pure samples of each kind of DNA are cut using restriction enzymes, including isoschizomers. Restriction enzymes cleave to the DNA backbone at very specific base pair sequences, and isoschizomers are pairs of restriction enzymes that cleave at the same base pair site—one will cleave regardless of methylation, while the other cannot cleave to the site if methylation is present.

A sample of DNA cut with restriction enzymes from each cell line is then used to run a gel electrophoresis. The agarose gel provides a medium for the DNA to travel through, and the electrical current helps to separate the DNA pieces on the gel by size. DNA is negatively charged and all the fragmented pieces have the same charge to mass ratio. Since they all have the same charge to mass ratio, all the DNA fragments would move the same distance in the presence of an electrical current. But by using the agarose gel, the DNA fragments move different distances based on size with the smaller fragments moving faster through the gel. The final product of electrophoresis is the presence of DNA bands along with DNA markers to show the base pair size of each DNA band.

The bands are visualized by staining with ethidium bromide so that a picture can be taken of the gel with visible DNA bands. After de-staining the gel, a Southern Blot analysis of the DNA is performed to transfer the separated DNA bands onto a nylon membrane, which can then be treated with DIG DNA probes to verify the results of the experiment. The DNA bands seen on the agarose gel using ethidium bromide are not sensitive enough to verify the outcome of the experiment, so the DNA must be transferred to a nylon membrane and visualized using another more sensitive label.

The final product of this experiment will provide the information necessary to tell whether or not the methylation patterns differ between the Alu sequences of the taxol-resistant and taxol-sensitive cell lines. Since the resistant line was developed from the sensitive line, the results may provide insight on the evolution of the cancerous cells.

The Effects of Cigarette Smoke on the Process of Angiogenesis

Aaron Rossie

The goal of my capstone experiment is to identify the trends, if any, regarding the effects of cigarette smoke on the formation of blood vessels from already existing blood vessels. The process of generating blood vessels from existent blood vessels is called *angiogenesis*. There are various proteins found in animalian blood. The protein most associated with the formation of blood vessels is called *integrin*. The key to my experiment lies in the assumption of a connection between integrin and levels of angiogenesis.

There is a widely accepted correlation in the scientific community between the presence of integrin and levels of angiogenesis. With no integrin present, angiogenesis is unable to occur. Smoke decreases integrin levels, and the decrease of integrin content lessens angiogenesis. Integrins are the main adhesion receptors used by endothelial cells to interact with their environment. They also play an important role in cell growth migrations and survival. Since angiogenesis is required for cancer (i.e. tumors) to survive, a connection between cigarette smoke and integrin levels could help determine a link between nicotine and cancer. This in turn could set a base for further understandings of how cancer functions and possibly lead to more effective means of treatment.

The cigarette smoke extract being used in this experiment comes from research cigarettes that consist of pure tobacco, lacking the chemicals found in generic-consumer cigarettes. I will use avian and rodent blood to measure for integrin and levels of angiogenesis. The use of avian and rodent blood in these experiments is permitted because they manifest acceptable similarities to human blood, which is crucial if we are to develop our results into a predictable model for humans. As any given embryo develops (i.e. mammalian, reptilian, avian, etc.) there is relatively no difference between them until a set stage is reached in their development. The use of different embryos such as avian as a model for humans is acceptable as a base of prediction, so long as it is isolated prior to reaching the differentiating stage. Rodent blood is an acceptable model for humans because, like us, rodents belong to the mammalian family, and there is little difference in blood characteristics among mammalians as a group.

My first experiment will involve the use of avian embryos. I will employ the Chorioallantoic Membrane (CAM) procedure. In this process, fertilized chicken eggs are developed and various doses of cigarette smoke are introduced to them regularly for approximately five days. The first step is to place the egg yoke and white (no more than two days old) into a cup, using 'cling wrap' to suspend the contents. I have decided to run three separate samples from a total of sixty eggs. Twenty eggs not introduced to cigarette smoke will serve as my control group. Two groups of twenty eggs are to be introduced to two millimeters of cigarette smoke daily over a five-day period.

The eggs will be 'smoked' by slightly lifting the lid off the cup, injecting the smoke into the air above the egg using a syringe, then closing the lid thereby capturing all of the smoke inside the cup along with the egg. The control eggs will be inspected and introduced into the environment over the same lapse of time as the smoked eggs, thereby giving consistent exposure between the samples. A syringe will be connected to a lit cigarette via a hose, and by closing the valve on the syringe and pulling the plunger. cigarette smoke will be drawn into the chamber of the syringe. By reversing the valve and depressing the plunger the smoke will be forced out through the needle of the syringe. The smoke in the environment surrounding the egg is then absorbed through the membrane, into the embryo, and throughout the vascular system.

The eggs must be immediately returned to the incubator, and must not be out of the incubator for any time over a two-minute period. In order for the eggs to survive, they must be maintained at thirty-seven degrees celsius and approximately eighty five percent humidity. The smoked eggs and the control eggs are set up in seperate incubators to minimize possible contamination between samples. The

embryos are developed until just before they form a beak and other distinguishing features.

On the fifth day of the experiment, the Chorioallantoic Membrane (CAM) -- a sac where all of the blood vessel growth is occurring -- is separated from the embryo and collected. The CAM grows above the embryo in the shape of a disc, which covers it from the air above. Below the embryo, and connected to the CAM at its outer edge, is the yoke white mixture that lies between the embryo and the 'cling wrap'. The CAM is collected by first cutting the edge of the CAM where it is connected to the yoke mixture. Then, using forceps, we must lift the CAM out of the cup and disconnect it from the embryo. The CAM is then further separated from any miscellaneous yoke using a saline solution. The CAM is cut in half, with one half placed in a formulin (formaldehyde) solution for preservation purposes and the other half placed in a freezing mold. The freezing mold has a colored freezing gel added to help protect the CAM during the freezing process, using three colors to differentiate the samples from one another. The samples stored in the freezing mold will later be microscopically sliced to test for integrin amounts using immunohisto chemistry. The CAM placed in the formulin solution must be transferred to another solution within thirty-eight hours or the sample will begin to deteriorate. This new solution is also saved for later testing.

Several issues will come into focus once the experiment is completed. One issue concerns the difference between our research cigarettes and consumer cigarettes (which contain additional additives). There is also a problem of justifying that the cigarette smoke was successfully absorbed by the membrane. This will plausibly lead to chemical testing for tar in the membranes and for nicotine content in the blood. When trying to establish a reliable correlation between smoking and angiogenesis, there is a problem to address involving any "outliers" that do not fall into the trend. These will have to be explained by reference to possible chemical glitches in the individual membrane or possible flaws in my procedure. The major issue to address relates to the use of other animalian embryos as the basis for framing a model applicable to human test subjects. Not only are the similarities between animals open to question but so is the use of embryos as a sample for drawing conclusions about mature adults.

The Infinite Wisdom of Georg Cantor

Dan Westerman

Throughout history, there are many examples of brilliant mathematicians who changed the world with new and astounding theories. Many challenged the common notions of their time, proposing new ways of conceiving shapes, numbers, and relationships. In his Elements, written around 300 BC, Euclid discarded the belief that visual representations could justify a hypothesis, and insisted on an axiomatic system of logical proofs. In 225 BC, Archimedes had the insight to realize that he could, in theory, construct a polygon whose area was arbitrarily close to that of a given circle. Over 1800 years later, this notion of arbitrarily or infinitely close was utilized by Leibniz and Newton in the creation of Calculus, a development that changed all sciences forever. Following this long line of innovators we come to a man named Cantor, whose theory of infinite sets was so groundbreaking that it has been dubbed "one of the most disturbingly original contributions to mathematics in 2500 years" (Burton, 625).

Georg Ferdinand Ludwig Phillip Cantor was born on March 3, 1845, in St. Petersburg, Russia. Many of his relatives were artists or musicians, thus from an early age Cantor was surrounded by an environment that fostered his incredible genius and creativity. Both of his parents may originally have been Jewish, but his father later converted to Protestantism and his mother to Catholicism (Maor, 54). This rich religious background led the young Cantor to develop a deep interest in theology, especially in questions concerning the nature of the infinite.

His father wanted him to study engineering, as this would be much more profitable than mathematics, so in 1862 Cantor started at a university in Zurich, Germany. After one semester he had had enough of this mundane science, and his father finally agreed to let him study mathematics. Cantor then transferred his studies to the University of Berlin, where he was fortunate enough to study under Weierstrass, Kummer, and (less fortunately) Kronecker. In 1867, at the age of only 22, he received his PhD for a thesis on number theory, and accepted an appointment at Halle University in 1869.

Intrigued by Weierstrass' groundbreaking and rigorous analysis, Cantor wrote a series of papers on representations of functions as trigonometric series. It was these papers that led him quite unexpectedly to the study of sets of points on the real line. This topic quickly revealed itself to be much more complex than it originally seemed, and Cantor decided to begin a complete investigation into the intricate workings of sets, both finite and infinite. His next paper, *Über eine Eigenshaft des Inbegriffes aller reellen algebraischen Zahlen* (*On a Property of the System of all the Real Algebraic Numbers*), marked the birth of Set Theory (Burton, 625).

It is important here to discuss the concept of the infinite up until Cantor's time. Mathematicians felt that there were two types of infinities, the *potentially infinite* and the *actual infinite*. Of these, only the former was acknowledged as something that could be used in mathematics. The potentially infinite referred to a process which could be repeated over and over, but which at any given step was still finite. The idea of the potentially infinite can be seen in the concepts of limits and mathematical induction. The actual infinite, on the other hand, was strictly forbidden. Even the legendary Gauss expressed this view in an 1831 letter to Schumacher: "As to your proof, I must protest most vehemently against your use of the infinite as something consummated, as this is never permitted in mathematics. The infinite is but a figure of speech" (quoted in Burton, 628). Cantor could not accept this idea. In his mind, there were clearly sets, or aggregates, which were infinite. This entirely new concept required the deep investigative powers of Cantor's genius, and we now turn our attention to some of his specific results.

We begin with a definition: "By an 'aggregate' we are to understand any collection into a whole M of definite and separate objects m of our intuition or our thought" (Cantor, 85)[1]. Of fundamental importance was the ability to compare the sizes of

[1] This definition, and several others in this paper, are given in Cantor's original (translated) wording. Although they seem quite esoteric, it is interesting to see the original work. Note that in the majority of the paper we use the modern terms "set" and "cardinality," instead of Cantor's "aggregate" and "power."

two sets. At first, it seems that we can simply count the elements of each set and compare these numbers. This works for finite sets, but what about those pesky infinites? Cantor had the burst of insight to realize the relative size of two sets could be discerned by establishing a correspondence between their elements. In his words, "We say that two aggregates M and N are 'equivalent,' in signs M~N or N~M, if it is possible to put them, by some law, in such a relation to one another that to every element of each one of them corresponds one and only one element of the other" (Cantor, 86). Today, we understand the "law" to be a function that is both one-to-one and onto, that is, a bijection. We then see that two sets M and N are equivalent if there exists a bijection f: $M \to N$ (note that, since f is a bijection and thus has an inverse, the order $N \to M$ or $M \to N$ is irrelevant). With a little consideration, we see that this notion of equivalence is quite sufficient; it makes perfect sense that two sets are equal in size if we can match up their elements.

Now we can actually use this definition to see what it means to be able to count something. We can easily count the elements of any finite set. For example, consider the set {a,b,c,d}. We see that there are four elements, but how did we arrive at this conclusion? Clearly, we can just start with the first element and count 1, 2, 3, 4. What we have actually done is exhibited the bijection f: $\{a,b,c,d\} \to \{1,2,3,4\}$ given by f(a)=1, f(b)=2, f(c)=3, and f(d)=4. Since it is the set $N=\{1,2,3,\ldots\}$ of natural numbers that we use to count, we can extend the concept of counting to infinite sets with the following definitions[2].

(1) A set S is said to be *denumerable* if there exists a bijection f: $N \to S$.
(2) A set S is said to be *countable* if it is either finite or denumerable.
(3) A set S is said to be *uncountable* if it is not countable.

Thus, the set N is fundamental to our understanding of infinite sets. We can also think of a set as being denumerable if we can list all of its elements, since the very act of creating the list involves placing one element 1st, one 2nd, and so on. With this in mind, Cantor set out to determine which sets were denumerable.

We immediately see that N is denumerable by the trivial bijection f: $N \to N$ given by f(n)=n. Significantly more interesting is the fact that the set E^+ of all positive even numbers is denumerable, as is shown by f(n)=2n. We have just proved that $E^+ \sim N$, but E^+ is clearly a proper subset of N! Is this a contradiction? It definitely goes directly against Euclid's fifth common notion from Elements: "The whole is greater than the part." Indeed, when Galileo discovered that "there are as many squares as there are numbers because they are just as numerous as their roots," he thought that something was seriously wrong (quoted in Burton, 627). Similar "paradoxes" were discovered by Bolzano in the early 1800s, but it was Cantor's close friend, the famous mathematician Richard Dedekind who, in 1888, not only accepted this sort of relationship, but formalized it with a definition: "A set M is infinite if it is equivalent to a proper subset of itself; in the contrary case, M is finite." This definition of an infinite set was quite a contrast to the common practice of saying that something was infinite if it was not finite. This concept, however revolutionary, is tame compared to many of the other remarkable results of Cantor's theory.

It is easy to show that the odd numbers, the squares, and many other subsets of N are also denumerable, but what about the set Z of all integers? This set should have at least twice as many elements as N, right? Not even close. We normally think of the integers as the set $\{\ldots,-2,-1,0,1,2,\ldots\}$, but there is nothing to stop us from listing them as $\{0,1,-1,2,-2,3,-3,\ldots\}$. What we have done here is listed the integers according to the bijection f: $N \to Z$ defined by $f(n) = \frac{n}{2}$, *for n even* $\quad f(n) = \frac{1-n}{2}$, *for n odd*. Thus, Z is denumerable. Finally, it can be proved that every subset of a countable set is countable, as the examples above illustrate. None of these results have been too surprising by today's standards; all of the sets considered involve only integers.

One might now wonder if the only denumerable sets are those consisting solely of integers. For example, we know the set Q of rational numbers is

[2] From here on we use N to be the set of natural numbers, which should not be confused with the general set N which Cantor used in his definitions.

dense[3], so how could we possibly list all of its elements? Remarkably, Cantor showed that this is indeed possible, but as Fermat would say the proof is too lengthy to include here. With similar proofs, he showed that NxN is denumerable, and even that a denumerable union of denumerable sets is denumerable.

Now it begins to seem that we have so many tricks up our sleeves that we can match up any two infinite sets. Surely if even the rationals are denumerable, we must wonder what is not. Cantor must also have wondered this, and his investigation into this matter brings us to a truly great theorem: The set R of real numbers is uncountable. Two proofs of this were given by Cantor, the most well known being his famous "diagonal proof." We wish to present the first proof, given in his 1874 publication, which requires a preliminary definition and theorem given in the appendix.

Theorem: The set R of real numbers is uncountable.

Proof: It suffices to show that the interval I=(0,1) is uncountable, for if R were countable then the subset I would be countable by a previous result. If, to the contrary, we assume that I=(0,1) is countable, we can list the elements of I as $I=\{x_1, x_2, x_3, \ldots\}$. First, select a closed subinterval I_1 of I such that $x_1 \notin I_1$. Next, select a closed subinterval I_2 of I_1 such that $x_2 \notin I_2$. Continuing in this fashion, we obtain a nested sequence of closed, bounded intervals $I_1 \supseteq I_2 \supseteq \ldots \supseteq I_n \supseteq \ldots$ such that $x_n \notin I_n \ \forall n \in N$. Thus, the Nested Intervals Property guarantees the existence of a real number ξ such that $\xi \in I_n \ \forall n \in N$. But then $\xi \neq x_n \ \forall n \in N$. But $\xi \in I$ since $I \supseteq I_n \ \forall n \in N$, so we have produced an element of I that is not on our list, which contradicts that we had listed all the elements of I. Hence, (0,1), and therefore R, are uncountable. QED

An immediate consequence of this theorem is that the set R-Q of all irrational numbers is uncountable, for if R-Q were countable then $(R\text{-}Q)\cup(Q)=R$ would be countable. Consequently, there are infinitely many more irrationals than rationals.

We have now confirmed that uncountable sets exist, and thus that there are different "sizes" of infinity. Considering this, we would like some way of ordering these sizes, and for this we would like to have symbols representing each size. Cantor of course realized this, and gave the following definition: "We will call by the name 'power' or 'cardinal number' of M the general concept which, by means of our active faculty of thought, arises from the aggregate M when we make abstraction of the nature of its various elements m and of the order in which they are given" (Cantor, 86). Upon deciphering this into English, we realize that the cardinal number of a set is what we know about the set if we do not consider what its elements are: the only thing we can see in this case is its size. Thus, the cardinality of a set represents how large it is. The notation used for the cardinal number of a set S is $\overline{\overline{S}}$. A very important remark is that, for sets A and B, $\overline{\overline{A}} = \overline{\overline{B}} \Leftrightarrow A \sim B$. As a standard basis from which to work, Cantor defined $\overline{\overline{N}} = \aleph_0$ *and* $\overline{\overline{R}} = c$.[4] Full details on comparing the sizes of sets by ordering the cardinals are given in the appendix, but for now we will accept $\aleph_0 < c$.

We now must ask if there exist cardinals greater than c. That is, are there sets that are even bigger than R? Cantor was sure that there must be, and also thought that he knew exactly where to find one: the real plane. Specifically, he reasoned that there must be more points in the unit square than in the unit interval. After many fruitless attempts to prove this, in 1877 he finally ended up proving just the opposite: the unit square is equivalent to the unit interval! Thus, there are just as many points in the two dimensional plane as on the one dimensional line! This completely unexpected result prompted a letter from Cantor to Dedekind, exclaiming "I see it but I do not believe it" (quoted. in Dunham, 273). In fact, it was later proven that $\overline{\overline{R^n}} = c \ \forall n \in N$.

[3] A rational number is simply a fraction. To say that Q is dense means that between any two real numbers there lies a rational number.

[4] Considering the domain (0,1), the functions $f(x)=(b-a)x + a$ and $f(x)=\tan(\pi x-\pi/2)$ show that, for any interval (a,b) of real numbers, we have (a,b)~(0,1)~R, and thus $\overline{\overline{(a,b)}} = \overline{\overline{(0,1)}} = \overline{\overline{R}} = c$.

Where, then, can we find a more abundant set than *R*? Still convinced that such sets must exist, Cantor persevered and was finally rewarded with the theorem that today bears his name.

Cantor's Theorem: If A is any set, then $\overline{\overline{A}} < \overline{\overline{P(A)}}$.[5]

Proof: We begin by showing that *P(A)* is at least as large as *A*, and then show by contradiction that *P(A)* is not equivalent to *A*.

First, consider f: $A \to P(A)$ given by f(a)={a}. This function maps all of the elements of A to some of the elements of *P(A)* (it is 1-1), so *P(A)* must be at least as large as *A*. Thus, $\overline{\overline{A}} \le \overline{\overline{P(A)}}$.

Now, assume $\overline{\overline{A}} = \overline{\overline{P(A)}}$. Then we have $A \sim P(A)$. By definition, this means there exists a bijection g: $A \to P(A)$. Now we consider the set $B=\{a \in A: a \notin g(a)\}$. *B* is clearly a subset of *A*, and so $B \in P(A)$. Hence, since g is a bijection, there must be some $x \in A$ such that g(x)=*B*. We now ask whether or not x is an element of *B*. There are two cases:

Case 1: Assume $x \in B$.

Then by definition of *B*, we have $x \notin g(x)$. But g(x)=*B*, so $x \notin B$, which contradicts our assumption. Thus, this case is impossible.

Case 2: Assume $x \notin B$.

Then by definition of *B*, we have $x \in g(x)$. But g(x)=*B*, so $x \in B$, which contradicts our assumption. Thus, this case is also impossible.

Since both cases lead to contradictions, we are forced to conclude that our initial assumption was false. That is, $\overline{\overline{A}} \ne \overline{\overline{P(A)}}$.

Hence, we have $\overline{\overline{A}} \le \overline{\overline{P(A)}}$ and $\overline{\overline{A}} \ne \overline{\overline{P(A)}}$.

Therefore, $\overline{\overline{A}} < \overline{\overline{P(A)}}$.

QED

So: the set P(*R*) is larger than *R*, but this theorem actually goes far beyond finding a set with greater cardinality than *R*. Since, for any set A, P(A) is itself a set, we can construct P[P(A)], and P[P[P(A)]], and so on. We then obtain the following sequence:

$\aleph_0 < c < \overline{\overline{P(R)}} < \overline{\overline{P(P(R))}} < \overline{\overline{P(P(P(R)))}} < \ldots$. Thus, we have a profound truth: there is an infinite hierarchy of infinities.

To us, Cantor's theory seems amazing. It is a beautiful example of mathematical ingenuity at its best, and "has been called the first truly original mathematics since the Greeks" (Dunham, 280). Unfortunately, in Cantor's time it was nothing short of blasphemy. Outraged at his use of the actual infinite, and even more at the transfinite arithmetic he created in his 1895 Contributions to the Founding of the Theory of Transfinite Numbers, the mathematical community erupted into one of the most bitter disputes in history. Most wounding to Cantor were the attacks of one of his former teachers, Leopold Kronecker.

Kronecker was undoubtedly a great mathematician, but also an ultraconservative one. He believed that any math not constructible from the natural numbers alone was ridiculous, and particularly disliked Weierstrass' Analysis. He once brought his esteemed colleague to tears with a comment concerning "the incorrectness of all these conclusions used in the so-called present method of analysis" (Burton, 631). If Kronecker could not handle ε's and δ's, one can imagine his feelings towards Cantor's infinities.

As a justification for his use of the actual infinite, Cantor once argued "to deny the actual infinite means to deny the existence of irrational numbers" (Maor, 55). Unfortunately, this is exactly what Kronecker did, apparently preferring the state of mathematics in the time of Pythagoras over that of the 19th century. Kronecker's extreme distaste for the new Set Theory seemed to devolve into a personal hatred of Cantor himself, and affected much of our genius' life. Cantor always wanted to get an appointment at a more prestigious university, but Kronecker, as a senior professor at the University of Berlin, made this impossible. He even went so far as to block many of Cantor's articles from being published in all but the smallest journals. It should be noted that Cantor did have some supporters at the time, most notably Weierstrass, Dedekind, and David Hilbert, but Kronecker's opposition was just too strong.

All of these personal attacks, along with the stress of his great mathematics (particularly his attempts to

[5] P(A) is the set of all subsets of A, and is called the power set of A.

prove the continuum hypothesis), had a devastating effect on Cantor[6]. In 1884 he had his first nervous breakdown, and was committed to a psychiatric clinic in Halle. After a short time he was released, and went on developing his theory. He was again in fine form in 1888, and after years of defending his work remarked "My theory stands as firm as a rock; every arrow directed against it will return quickly to its archer" (Dunham, 283). Tragically, in 1899 the death of his son Rudolph initiated another descent. Cantor was forced back to the psychiatric clinic in 1902, 1904, 1907, and 1911, and finally retired from Halle University in 1913. By this time his theories were beginning to gain much more widespread acceptance, but the damage had been done, and Cantor died in the clinic on January 6, 1918 (Dunham, 279).

This was indeed a tragic end to one of the most brilliant men the world has ever known, but his ideas live on, continuing to amaze and inspire countless mathematicians. Particularly, the great German mathematician David Hilbert would not allow Cantor's theory to die. He regarded this new field as "the finest product of mathematical genius and one of the supreme achievements of purely intellectual human activity" (quoted in Burton, 629). Hilbert also defended the Set Theory from future attackers, insisting "no one will expel us from the paradise that Cantor has created" (quoted in Dunham, 281). Clearly, Cantor left a great treasure for all future generations of mathematicians.

We conclude with a statement by Cantor himself, who never for a moment doubted the truth of his revolutionary mathematics:

> *This view, which I consider to be the sole correct one, is held by only a few. While possibly I am the very first in history to take this position so explicitly, with all of its logical consequences, I know for sure that I shall not be the last!* (quoted in Dunham, 280)

[6] Modern psychiatric analysis also shows that he may have been bipolar (Dunham, 279).

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Appendix

Preliminaries for Cantor's Proof that *R* is Uncountable

Definition: A sequence of intervals $I_n, n \in N$, is *nested* if the following chain of inclusions holds: $I_1 \supseteq I_2 \supseteq ... \supseteq I_n \supseteq I_{n+1} \supseteq ...$

Theorem (Nested Intervals Property): If $I_n, n \in N,$ is a nested sequence of closed bounded intervals, then there exists a number $\xi \in R$ such that $\xi \in I_n \ \forall n \in N.$

The Ordering of Cardinal Numbers

Definitions: Let A and B be sets.

(1) $\overline{\overline{A}} = \overline{\overline{B}}$ *iff* $A \sim B$; *otherwise* $\overline{\overline{A}} \neq \overline{\overline{B}}$.

(2) $\overline{\overline{A}} \leq \overline{\overline{B}}$ *iff there exists an injection* $(1-1)$ $f : A \rightarrow B$.

(3) $\overline{\overline{A}} < \overline{\overline{B}}$ *iff* $\overline{\overline{A}} \leq \overline{\overline{B}}$ *and* $\overline{\overline{A}} \neq \overline{\overline{B}}$.

Remarks:

(i) On the set of cardinal numbers, it can be shown that the above relation $\leq$ is reflexive, transitive, and antisymmetric, and that for any two elements x and y either $x \leq y$ or $y \leq x$. Thus, it is a total order on the set of cardinal numbers. If we accept the generalized continuum hypothesis, then $\leq$ is also a well ordering on the set of cardinal numbers.

(ii) Many of the familiar properties of $\leq$ on the real numbers, such as $x \leq y$ iff x<y or x=y, can be shown to carry over to the cardinal numbers.

Development in California's Communities: Assessing the Value of Sustainable Practices

Christina Walley

My research focuses on sustainability as a basis for community practices that foster a greater balance between society, business and the environment. Sustainability refers to a way of using resources for current benefit that protects future access to those resources. By contrasting communities that use sustainable practices with those that do not, my research seeks to determine if sustainability is more beneficial to business, society and the environment than methods that do not incorporate sustainability into their plans.

The human relationship to the natural world has changed immensely over time. In the course of our development, we have become a dominant force upon the planet, especially with respect to our ability to change the environment around us to fit our needs. But sometimes the way this is accomplished destroys the resources the human population will need at a later time. Indeed, as our population grows, even more of our already strained resources will be in higher demand. It is time for us to take a closer look at the way we use our limited resources, and to ask ourselves if the way we use them now will allow them to still be available to serve the needs of the future generations.

The concept of living so as not to deplete the resources of the land, while at the same time, meeting the needs of the people, is known as sustainability. But more importantly, sustainability is a special way of relating to the world around us, and sustainability practices can be implemented in many areas of our life.

One of the leading proponents of the concept of sustainability is Dr. Karl-Henrik Robert. One of his achievements was to created an organization called "The Natural Step," a system designed in Sweden in the 1990's to outline some criteria for determining if a community is sustainable. Here are his proposed measures of a sustainable society:

> In a sustainable society, nature is not subject to systematically increasing of: (1) concentrations of substances extracted from the earth's crust; (2) concentrations of substances produced by society; (3) degradation by physical means; and (4) in that society ... human needs are met worldwide. (TNS, 2004)

His system focuses primarily on maintaining the environment, as can be seen by his first three rules, because physically, we rely almost completely on the natural world for our survival. Because of this, it is imperative that the ecosystems continue to function if we are to maintain the health of a population.

Systems work within a given time frame. Unfortunately, some human time frames are much shorter than the ones followed in nature. Sustainability forces us to see the world and its resources in a timeframe of generations rather than years. Of course, this concept of sustainability is by no means a modern idea. Native Americans had a system for determining whether or not their decisions were sustainable. They emphasized that "all major decisions of a nation must be based on how those decisions will affect at least the next seven generations (Morris, 1996)." We could stand to revisit this approach to life.

Because it is a human concept, sustainability should be assessed upon a human scale within the fundamental unit of human organization: the community. Throughout time, humans have organized themselves into social groups in order to benefit from the collective yield of their community achievements. Initially, groups consisted mainly of families, but over time, small villages grew out of the congregation of these groups, and social community was born (Sale, 1980). However, over the past few centuries, the community model has changed drastically primarily due to population growth and the way we use natural resources to fuel this growth. Today, a crisis is looming that requires a new way of dealing with the environment in which human communities exist.

The goal of my research is to explore various methods used to achieve sustainability in a system

and to compare cities and communities that use sustainable practices with those that do not, focusing primarily on cities and communities in California.

Where best to find a wide range of sustainable practices than in one of the most diverse ecological places. California is an excellent place to begin looking at the way sustainable practices can affect communities. There is a wide range of peoples, ecosystems, and problems caused by its growing population and the disparity of resources within its population. The cities of California are more diverse than you might think, and exhibit a variety of ways of relating to the world around them, including some practices that are sustainable, and many that are unsustainable. I want to begin with a general description of what a community striving to achieve sustainable practices is working towards, and what such a community is attempting to eliminate, namely the impact of unsustainable practices within their community.

A community exhibiting sustainable practices often generates its own power and food sources without depleting of its resources or extending its ecological footprint so as to take away from other communities the resources they need to sustain themselves. (Both human and natural communities can be depleted). An ecological footprint is the area within and around a community from which it draws its resources. A sustainable community puts people and their needs alongside the need to keep the surrounding ecosystems healthy. Human beings, like all living creatures, need services and resources provided by the surrounding environment, such as fresh air, clean water, food, supplies for building, and pretty much everything else too.

These communities put their energy into cultivating long-term prosperity as well as prosperity in the here and now, and find the strength to do this by emphasizing diversity. This can be seen in agriculture, where a field filled with a variety of different crops is much more productive in terms of yield per unit because diseases and pests are dealing with broken up patches of crops—they can't just go from one to the next, destroying the whole field, as can happen in monoculture fields. Sustainable agricultural practices aim to achieve a cyclical pattern of production, where inputs in the system are put to use, and then the by-products go back into the system to help make more products.

A community with unsustainable practices depletes its natural resources and must go outside its boundaries to exploit other areas for resources. Such communities have an extensive ecological footprint, one which pulls resources from an area greatly extending beyond their borders, and they often degrade the surrounding area or stretch into the domain of other communities, often impoverishing them. Many of the communities and cities in California today draw from other areas of the world for supplies and resources. This is not a problem in the case of trade; but it often becomes problematic if a community has depleted its own resources, and then brings those attitudes about resource use to new areas and depletes those reserves as well. Some examples of this are oil, lumber and labor; these are resources that California cannot supply on its own, has depleted, or chooses to protect, and then must rely on other areas to provide, often at an ecological cost invisible to us here. Perhaps we could find a better way of utilizing the many resources we have here, instead of constantly needing to find new resources elsewhere to replace what we once had enough of.

The desire for economic gain without factoring in the cost of societal or environmental impact often drives the desecration of the environment surrounding our cities. Another effect of these practices is the tendency to create monoculture. However, if everything is uniform, then if a key design fails, all of the linked elements can fail because they all have the same weaknesses. This is particularly evident in farming techniques. Monocultural crops may be easier to farm with large machinery and uniform pesticide or fertilizer inputs, but they are also more susceptible to unanticipated diseases and pests, which can easily cause the entire crop to be lost. This idea can also be applied to the way people build, think, and live.

It is important to note that these ideas of "sustainable" and "unsustainable" practices lie on opposite ends of a continuum. No community will be completely sustainable or unsustainable in its practices. In my research project, I am focusing on those practices that a community uses to further itself along the path of sustainability. My hypothesis is that the cities that incorporate sustainability into their

city operations will be more successful in the long run than cities that do not. They will be more successful in measures of social, economic and environmental conditions. Examples of these include percentages of suicides, life span of an average business or air quality levels in the city.

How should we go about measuring the success or failure of a city? In order to best measure the success of a community, there are three aspects of a community which must be considered for their importance to community vitality, and also, very importantly, for their relationship to one another. These are: society, economy and the environment. Why these aspects? The Natural Step provides a good mission statement reflecting these priorities: "Our principles of sustainability drive path-breaking models and tools that pass these three tests: Is it good for business, good for society and good for the environment (2004)?" This particular set of considerations encompasses nearly all the major spheres of city life.

These factors are also essential because their relationships to each other are integral, and if one is healthy, the others are likely to be healthy too. By using these three indicators for measuring the health of a community, a more complete picture of the situation I am studying can be achieved, and hence, measuring the success of a community based on these factors should give a fair representation of success or failure within a community.

The relationships between these three factors are very important to the sustainability of each. Society needs the environment for its essential resources, and the economy relies on the environment for raw materials. Without the integrity of the ecosystem, our economic services would be very limited.

The environment near a society is maintained by the people, or damaged by them, and often its health is dependent on the practices of humans. The economy needs a healthy society to sustain its practices, to buy its products and support its consumer base. The health of the society can have an enormous impact on the health of the environment and the economy.

Society in turn also needs the economy to promote specialization and easy access to the necessities of life that are now produced mostly along the pathways of business. The environment depends upon the vitality of the economy because if the economy is doing poorly, the result is often further degradation of the environment, whereas if the economy is healthy, there stands a chance that the benefits of its success will go to ensuring practices that will maintain the environment for future economic use.

What is really good for one of these elements is in the long run good for all three. By understanding how a sustainable environment, society, and business are each necessary in order to ensure the health of the others, the different value systems these three arenas effect can be brought into harmony.

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Interpersonal Compatibility and Social Loafing: An Introduction to a Study

Martin Lanik

Social loafing has been defined as the tendency of individuals to exert less effort when working collectively than coactively (individually). The phenomenon has been examined in over one hundred studies (for review see Karau & Williams, 1993). However, in most studies, participants in the collective condition worked independently -- without interaction -- thus limiting the generalizability of findings. Wageman (1999) argued that in this type of experimental design all participants are merely coactors, and thus, no inferences can be made about the consequences of collective tasks on individual efforts. My research is an attempt to examine the social loafing paradigm using a "true" collective task requiring high interdependence. Karau and Williams, in their meta-analytic review of social loafing, expressed the need to examine the paradigm in interacting groups. Findings of the present research will provide understanding of how social loafing manifests itself within interacting groups.

Although Schutz's (1966) FIRO-B instrument that assesses interpersonal compatibility is widely used in teambuilding in organizations, there are discrepancies in the research literature on whether compatible groups are more productive than incompatible groups. Findings of the present research will clarify the discrepancies. Also, the social loafing paradigm has not yet been studied using the FIRO-B instrument. Findings may be beneficial to organizational psychologists, managers, and team builders, because they may provide means of minimizing social loafing through proper teambuilding.

Social Loafing

Social loafing has been defined as the tendency of individuals to exert less effort when working collectively than individually (Karau & Williams,1993). Karau and Williams, in their meta-analytic review of social loafing, concluded that the paradigm is moderate in degree and generalizable across tasks and populations. They found that social loafing is robust across genders, cultures, and tasks; however, the effects are stronger for men and persons from individualistic cultures.

Historical Overview

The reduction of individual efforts in collective settings was first reported by Ringelmann (see Kravitz & Martin, 1986). During 1882 and 1887, Ringleman measured the force exerted by male students who pulled on a rope. Students pulled alone and in groups of differing sizes. Although comparisons of individual and collective performances were not of primary interest to Ringlemann, he observed that the average force exerted by an individual decreased with increasing group size. Ringlemann explained these findings as due to coordination losses.

Steiner (1966) distinguished between actual and potential productivity. Actual productivity is what the group in fact achieves, and potential productivity is the maximal output that is accomplished when the group uses its resources in the best feasible way. Thus, actual productivity equals potential productivity only when motivational losses and coordination losses are eliminated. Steiner also explained Ringlemann's findings as due to coordination losses; Steiner argued that Ringlemann's task was very challenging, and thus, motivation was optimal.

Ingham, Levinger, Graves, and Peckham (1974) replicated Ringlemann's experiment. Using a sophisticated rope-pulling equipment that maximized experimental control, Ingham et al. found that male undergraduates exerted significantly less force when pulling in dyads and triads than when pulling alone. To eliminate coordination losses, Ingham et al. conducted a second experiment. This time, participants were led to believe that they were pulling on the rope with others, who, in reality, were confederates instructed only to pretend that they were pulling on the rope. Even in this "pseudogroup" condition, participants exerted less force than when they were pulling alone. Hence, Ingham et al. established that individuals were likely to exert less

effort on collective than individual tasks due to motivational losses.

Theoretical Explanations

Social Impact Theory. Latane, Williams, and Harkins (1979) explained social loafing through the Social Impact Theory. The theory asserts that the magnitude of social influence is a function of number, immediacy, and strength of sources of social influence as they relate to targets. Magnitude of social influence decreases from individual to collective conditions in the social loafing research. Thus, participants in collective conditions feel less pressured to work hard, and their outputs are lower than of those working individually.

Arousal reduction and identifiability. Williams, Harkins, and Latane (1981) suggested that, in social loafing, presence of others reduces arousal. Participants in collective conditions are not identifiable, thus their evaluation apprehension is minimal. Lower evaluation apprehension leads to lower arousal and may manifest itself in diminished productivity. Williams et al. supported this argument with two experiments in which male undergraduates shouted and clapped alone and in groups with varying levels of identifiability. As predicted, participants who were always identifiable exerted the same amount of effort in individual and group conditions.

Evaluation potential. Harkins and Jackson (1985) argued that individuals engage in social loafing because, in collective conditions, they cannot obtain rewards or punishments for their output. Participants generated uses of an object in either identifiable or unidentifiable conditions. Participants were told that they were generating uses for either the same or a different object than the other group. Harkins and Jackson found that when participants' performance was identifiable and comparable, they performed better than participants in all other conditions. Thus, Harkins and Jackson concluded that motivation could stem from people's awareness that their performance can be compared.

Harkins and Szymanski (1988) found that the chance of comparing one's output with an objective criterion was sufficient in reducing social loafing. They identified two elements that were essential for self-evaluation: information about the output and information about the criterion. During a vigilance task, participants were either evaluated by the experimenter or not, were either provided with performance feedback or not, and were either provided with an objective criterion or not.

The Collective Effort Model

Karau and Williams (1993) suggested that theoretical explanations of social loafing preceding the Collective Effort Model were limited, in that each explained and provided predictions of the phenomenon within a restricted area. Thus, Karau and Williams argued for the need of a unified model of individuals' efforts in collective settings, and they developed the Collective Effort Model to fulfill this requirement.

The Collective Effort Model (Karau & Williams, 1993) asserts that individual performance is influenced by perceptions of associations between individual efforts and expected outcomes. Thus, individuals engage in social loafing because they perceive higher relationship between their efforts and valued outcomes in coactive (individual) conditions than collective conditions, where valued outcomes are split among all group members. On the other hand, individuals will work hard in collective settings only if they perceive their efforts to be instrumental in attaining personally valued outcomes. Individual effort leads to individual performance, which must influence group performance; group performance must lead to group outcome that is valued by the individual, and group outcome must relate to personally valued individual outcome. Individual outcomes include salaries, self-assessment information, and feelings of belonging. The Collective Effort Model assumes that persons either deliberately or subconsciously choose the extent of effort they will exert.

Fundamental Interpersonal Relations Orientation

Perhaps the most influential model of human interpersonal behavior is Schutz's (1966) Fundamental Interpersonal Relations Orientation (FIRO) theory. Schutz identified three interpersonal needs that all humans possess to a larger or smaller extent. By "interpersonal", Schutz means the relationship between interacting humans. Schutz argued that humans behave differently when they are in collective settings than when they are alone. The

term "need" depicts the requirement that an individual seeks to meet. Not fulfilling this requirement creates negative consequences. Thus, an interpersonal need refers to a requirement that can only be fulfilled through interactions with other people.

Inclusion need. According to Schutz (1966), the inclusion need refers to the internal urge to develop and preserve a desirable relationship with others with regards to interaction and connection. This need includes feelings of belongingness, acceptance, and significance. On the behavioral level, the inclusion need exhibits itself as wanting and giving attention.

Affection need. Schutz (1966) defined the affection need as the internal urge to develop and preserve a desirable relationship with others with regards to love and affection. This need includes feelings of closeness and that one is loveable. On the behavioral level, the affection need exhibits itself as wanting to be close and personal with people, and wanting to make people feel cared for and cherished.

Control need. The control need refers to the internal urge to develop and preserve a desirable relationship with others with regards to control and domination (Schutz, 1966). This need includes feelings of dominance, dependability, competence, and respect. On the behavioral level, the control need is related to the decision-making process. Individuals manifesting high need for control crave for authority, power, and domination over others. They want to make rules, lead, and influence people. On the other hand, individuals manifesting low need for control desire dependency and submission.

Interpersonal Compatibility

Interpersonal compatibility refers to the degree individual group members fulfill each others' needs (Schutz, 1966). In a compatible group, individual group members satisfy one another's needs. For example, if person A desires to be controlled, and person B desires to control, we would judge them to be compatible. However, if both persons A and B desired to control, but both loathed being controlled, we would judge them to be incompatible. On this view, incompatible groups are those in which individual group members do not satisfy one another's needs.

Reciprocal and originator compatibilities. Schutz (1966) stated that both reciprocal and originator compatibilities assess the degree to which individuals in dyads complement each other on the want-express levels. If one person expresses the behaviors wanted by the other, and if one person wants the behaviors expressed by the other, they are compatible. However, if one expresses behaviors not wanted by the other, and one wants behaviors not expressed by the other, they are incompatible.

Interchange compatibility. According to Schutz (1966), interchange compatibility refers to overall group atmosphere in a particular need area disregarding the want and express levels. It is the extent to which all group members agree or disagree on the amount of inclusion, affection, and control they desire in their group. With regards to the control need, high interchange refers to the inclination to control and influence others, and being controlled and influenced by others. Low interchange, on the other hand, refers to the inclination not to control and influence others, and not being controlled and influenced by others.

Interpersonal Compatibility and Group Productivity

Several studies supported Schutz's (1966) argument that compatible groups outperform incompatible groups (Downs & Pickett, 1977; Moos & Speisman, 1962; Reddy & Byrnes, 1972; Shalinsky, 1969). Schutz supported this argument by an experiment, in which participants in compatible groups outperformed participants in incompatible groups on three plotting tasks.

Reddy and Byrnes studied the population of middle managers. Participants, assigned to groups of 10 to 12 based on their interchange compatibility in all three areas, completed the Lego Man. Each participant received equal amount of Lego blocks, and a finished figure was provided for reference. Reddy and Byrnes measured the speed of task completion, and the group that completed the task the fastest was pronounced the winner.

In Shalinsky's (1969) experiment, groups of children ages 9.5 to 12 competed in jigsaw puzzle and singing marathon during a three week camp. Groups were composed based on interchange-compatibility scores in the area of affection;

additionally, Shalinsky computed reciprocal-compatibility scores in the area of affection for every dyad in a group.

Moos and Speisman (1962) assigned college undergraduates into dyads based on their reciprocal and role compatibilities in the area of control. Participants moved rings from one peg to the other in a defined fashion. Each member of a dyad was assigned a role; the leader instructed the follower.

Downs and Pickett (1977) constructed compatible groups, so that group members' interchange-compatibility scores agreed in at least two need areas. They identified three types of groups: low-affection compatible, high-affection compatible, and incompatible. Each group member read an article and was tested on its content. The group was tested on the content of all articles to assess its productivity and usage of resources. Interestingly, only the low-affection compatible groups outperformed the incompatible groups.

Other studies (Hill, 1975; Shaw & Webb, 1982) failed to support Schultz's (1966) prediction about the positive relationship between group compatibility and productivity. Shaw and Webb did not compose compatible or incompatible groups; instead, they assessed groups' compatibility after the completion of the task. Student participants performed class related learning tasks in groups, and the study was conducted as a part of the course. Thus, insufficient experimental control and questionable task and productivity assessments might have accounted for Shaw and Webb's findings. Similarly, Hill did not create compatible or incompatible groups; instead, Hill assessed the degree of compatibility of already existing teams. Productivity was measured by using comparative judgments of individuals that were members in two groups, and the task required only low levels of interdependence. Because both studies were executed in the field, it can be concluded that Schutz's hypothesis lacks support in the natural setting.

Focus of the Present Study

The current study builds on the foundation provided by the Collective Effort Model (Karau & Williams, 1993) and Shutz's (1966) FIRO theory of interpersonal needs. The Collective Effort Model suggests that individuals will work hard in collective settings only if they perceive their efforts to be instrumental in attaining personally valued outcomes. Schutz stated that individuals strive to fulfill their interpersonal needs in interacting groups. It seems reasonable to argue that interpersonal needs may at least partially translate into valued outcomes. Thus, persons will work hard in interacting collective settings only to the extent that they perceive their efforts to be instrumental in fulfilling their interpersonal needs and attaining other valued outcomes.

Compatible and incompatible groups of three participants will be constructed based on Schutz's (1966) interchange compatibility in the area of affection. In line with the social loafing research, participants will be led to believe that the study examines individual performances of people in groups (identifiable condition), or that the study examines performances of groups (unidentifiable condition). However, contrary to most social loafing research, participants in both unidentifiable and identifiable conditions will interact with their group members, and complete the task as a group.

Groups of participants will be instructed to put together a jigsaw puzzle. Each participant will receive a complete set of pieces to the puzzle, and each set will be marked to enable assessment of individual contributions to the group task. Individual performance will be assessed by counting the number of pieces each member contributed to the largest piece of puzzle completed by the group. Because interaction will be constant among the unidentifiable and identifiable conditions, possible coordination losses should be the same in the two conditions. On this hypothesis, any individual decrements in effort can be attributed to motivational losses (see Steiner, 1966).

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Nonverbal Communication in the Employment Interview: Gender Differences in Impression Management Techniques

Rebecca Vickers

The purpose of this literature review is to examine the gender differences in nonverbal communication exhibited in the employment interview and the impacts of these differences on the success of the applicant.

Employment Interview

One of the most popular procedures used in selection processes is the employment/selection interview (Dipboye, 1992). A selection interview is defined by Dipboye as "a dialogue initiated by one or more persons to gather information and evaluate the qualifications of an applicant for employment." Some researchers choose the term "recruitment interview" to imply that the interview is a "two-way process" (Stewart & Cash, 2003). Organizations are "recruiting" as well as "selecting" future workers and thus should present themselves in a favorable light (Stewart & Cash). While some studies have shown that interviews may provide low validity for determining an applicant's qualifications and future performance on the job, they are still one of the most widely-used selection instruments (Dipboye). This is because employers want to meet potential employees before making a final decision (Stewart & Cash).

Impression Management

In examining the employment interview, the role of impression management techniques is considered essential to the interview process (Dipboye, 1992). This is because impression management "is concerned explicitly with how people engender positive views of themselves in others while avoiding negative views" (Burgoon, Buller & Woodall, 1996). A social situation like the selection interview is of special interest in the area of impression management because the interviewee, in particular, is under extreme pressure to promote a positive image of him/herself to the interviewer in order to obtain the position (Dipboye). Furthermore, impression management is complicated by the fact that it encompasses conscious or unconscious behaviors and utilizes both verbal and nonverbal techniques (Schlenker, 1980).

It is important to note that impression management is essentially self-projection and may occur whether one is aware of it or not (Schlenker, 1980). Most individuals have been socialized so that they "encode and decode automatically" and are so well-trained that they are able to "[form] impressions of others without even realizing which specific behavior produced [the] response and often using a particular nonverbal action through habit" (Schlenker). Therefore, impression management is at work even if it is not intentional.

There has been much research to try to identify the particular objectives individuals seek in impression management (Burgoon et al., 1996). Some of the broader goals of impression management include creating an image of oneself which one wishes to project, determining how that image will be demonstrated, and defending the image if threatened (Dipboye, 1992). These are accomplished through tactics and strategies by assertive and defensive means (Tedeschi & Melburg, 1984).

As Tedeschi & Melburg (1984) explain, "tactical impression management is undertaken with clear and rather short-term objectives in mind." The Western Electric study may be used as an example of tactical impression management. In this case, workers increased production regardless of changes made to the working conditions because the workers attempted to please their supervisors and thus obtain "favorable evaluations" (Tedeschi & Melburg). The tactic utilized here was the increased production. This behavior promoted the image of a good worker to obtain the short-term goal of a positive performance evaluation. Strategic impression management focuses on "building reputational characteristics that serve the long-term interests of the individual" such as credibility and trustworthiness (Tedeschi & Melburg). An employee may engage in additional schooling, which aids the image of "well-educated." This may prove profitable in the long-run, such as a promotion a few years later (Tedeschi & Melburg).

The assertive-defensive realm of impression management is best understood by what Schlenker

describes as "the Association Principle…people attempt to claim…desirable images and disclaim undesirable images" (1980). Assertive impression management techniques are used to "claim" the image that is desired. The individual seeks to "establish a particular identity…and [is] not merely reactive to situational demands" (Tedeshi & Melburg, 1984). He/she is actively pursuing impression management techniques. Wearing a particular outfit or making a statement to impress a supervisor would be illustrations of assertive impression management.

On the contrary, defensive techniques are reactionary and are used in a situation where one is being attributed negative behaviors or characteristics which are associated with an impression they do not want (Tedeschi & Melburg, 1984). Thus, they attempt to "disclaim" that image. An example of this would be an explanation for poor quality work which would help the individual maintain a positive reputation (Tedeschi & Melburg, 1984).

Tedeschi & Melburg organized the assertive-defensive and tactical-strategic dimensions into a 2 x 2 matrix as a representation of the relationships among these aspects of impression management (see Appendix). The matrix presents four different categories: assertive-tactical, assertive-strategic, defensive-tactical, and defensive-strategic, and the goals linked to each category. The assertive-strategic element has been identified as the one most closely associated with nonverbal communication (Burgoon et al., 1996). This aspect of impression management is often used to help one build attraction, esteem, prestige, status, credibility, and/or trustworthiness in another's eyes (Tedeschi & Melburg, 1984).

Nonverbal Communication

Nonverbal communication is the "unspoken" portion of communication and includes kinesics (body movements, gestures, facial expressions), vocalics (vocal expression), haptics (touch), proxemics (space), chronemics (use of time), physical appearance, and artifacts (the use of objects) (Burgoon et al., 1996). All of these different behaviors contribute to the nonverbal communication in a message and to understanding meaning in a communication setting (Burgoon et al.). In fact, nonverbal communication has been estimated to comprise approximately 60-90% of the meaning communicated in such a social setting (Burgoon et al.). It is always important to remember that all nonverbal communication occurs in a particular social context, and the meaning may change according to the setting (Schlenker, 1980).

Due to the impact of nonverbal communication in the communication process, many researchers have investigated the relationship between nonverbal communication and an applicant's success in the employment interview (Gifford, Ng, & Wilkinson, 1985; Parsons & Liden, 1984; Goldberg & Cohen, 2004). One of the early studies performed on this topic suggested that interviewers tend to evaluate interviewees in areas such as social skill based on their nonverbal behavior (Gifford et al.). In addition, nonverbal cues are often used in instances where "information about a person is valuable" and/or "there are reasons to believe that such information can't or won't be explicitly expressed verbally or otherwise" (Schlenker, 1980). Social settings such as these would include first dates, a court trial, or the employment interview (Schlenker). Due to the fact that interviewers utilize nonverbal cues in assessing applicants, interviewees should focus on utilizing nonverbal communication cues to enhance their impression management skills.

Interpersonal Nonverbal Cues in Impression Management

Schlenker (1980) discusses two interpersonal dimensions in which people try to portray themselves. These dimensions can assist individuals in determining the impressions that they wish to project. The "power dimension" refers to the "vertical hierarchy that exists in social relationships" (Schlenker). In the power dimension, individuals are superiors through dominance, wealth, or competency/knowledge, or they are inferiors through an attitude of submission, poverty, and incompetency/lack of knowledge (Schlenker). The second "evaluative dimension" refers to the like/dislike of an individual (Schlenker). Therefore, the nonverbal behaviors are categorized "according to the amount of dominance/submission and liking/disliking they express" (Schlenker).

Individuals may use specific nonverbal behaviors to exemplify a dominant impression. For example, an erect posture, an "energy look" (moving in a

quick, purposeful manner), having "steady hands and feet," lowered eyebrows, and good eye contact are all nonverbal contributors to the personification of dominance (Schlenker, 1980). In addition, dominant people are often given and take more personal space and are the first ones to initiate touch (Schlenker). The paralanguage (or vocalics) of dominant personalities is controlled in such a way as to downplay nervousness and portray confidence, trustworthiness, and honesty (Schlenker). Conversely, submissive nonverbal behaviors would consist of slouching, raised eyebrows (suggesting surprise or fear), and no or little direct eye contact (Schlenker).

In the evaluative dimension, individuals seek to be liked or disliked through their communication. Schlenker (1980) summarizes research which explains types of nonverbal cues used when one wants to be liked. These individuals tend to "show others that they care, are interested in, and like him or her" (Schlenker). This would be accomplished by demonstrating "high immediacy," which consists of "smaller interpersonal distances," body orientation that is faced towards the other person, eye contact, and appropriate facial expressions which show that one is listening (Schlenker). Smiling has also been noted to help increase likeability and is the most "easily recognized facial sign when greeting others" (Schlenker).

Other methods for being liked are also used. One might present an image which is believed to already be liked and accepted by the target audience (Schlenker, 1980). For example, an image of "athleticism" might be exhibited by an interviewee who believes the interviewer only hires candidates with whom he can also golf. Some individuals attempt to be "aloof or unconcerned" in an attempt to play "hard to get" (Schlenker). It is important to use caution with this approach because it can seem disrespectful if taken to an extreme (Schlenker).

At times individuals do not seek to be liked (Schlenker, 1980). Examples such as a football coach, military instructor, or bully believe it to be in their best interest to be disliked (Schlenker). While this type of behavior is not always intentionally, it is important to remember that there are those whom would manage this type of impression.

Self-Management

A key to being an effective communicator is the ability to recognize the communication climate. One example of such a setting would be when one is meeting with someone who "is of higher status, competence, or power," such as their supervisor (Schlenker, 1980). In this situation, "relative submissiveness" is appropriate, even if that is not one's typical image (Schlenker). Thus, the ability to adapt ones behavior to a particular setting can be very beneficial. People who recognize the appropriate behavior in a social setting and are able to modify their behavior accordingly are often designated as high "self-monitoring" individuals (Dipboye, 1992). Those with high self-monitoring capabilities tend to appeal more to the interviewer than low self-monitors because they respond with the appropriate verbal and nonverbal communication (Dipboye). Clearly the skill with which one monitors ones impressions can have important implications in an interview situation.

Gender Differences in Nonverbal Communication

Research has also shown that men and women exhibit different nonverbal communication in normal societal situations. Some of these include: a greater capacity in women to "produce facial expressions that viewers can interpret correctly," the greater understanding of women to judge what encoders were enacting, and a sensitivity to the feelings and wishes of another and the corresponding ability to respond with appropriate nonverbal communication (LaFrance & Mayo, 1979). If such nonverbal communication differences between men and women are noticeable in daily interactions, then they should be present in other types of social settings as well, for example, the employment interview. Such forms of nonverbal communication may also affect both the images men and women portray and their ability to decode another's impressions. These differences can influence the impression management techniques and ratings of the interviewers, thereby impacting the success of the applicant.

Preliminary findings have indicated that females have been rated higher on nonverbal communication in an interview setting, therefore demonstrating their effectiveness to communicate in this manner (Parsons & Liden, 1984). In addition, a recent study found

that the stereotyping of gender communication techniques may play a role in the interviewer's evaluations of communication ability (Goldberg & Cohen, 2004). In this instance, there was little difference in ratings for men and women with low or poor nonverbal communication skills, but "men with high nonverbal skills were marked higher than any other group" (Goldberg & Cohen). The researchers of this study attributed these findings to the idea that men were rated higher because they were not expected to have strong nonverbal communication skills, simply because they were men (Goldberg & Cohen). Furthermore, they hypothesized that women with stronger verbal skills would be rated higher as well, because that is not their gender's stereotypical strength (Goldberg & Cohen). Both of these studies demonstrate that the area of gender differences in nonverbal impression management techniques calls for further investigation.

Conclusion

As a Business Administration major with a Human Resources concentration, I anticipate having many opportunities to communicate with potential employees and co-workers. A general understanding of the contribution of nonverbal communication to interpersonal relationships enables an individual to identify the type of impression they want to make, and to align their nonverbal cues accordingly. Recognizing the impressions of others empowers a person to better decode and react to nonverbal input from others. The employment interview is a specific example of a situation in which impression management is often used. Furthermore, the theories and information gleaned from studies of gender differences in nonverbal communication are applicable to daily communication as well.

In a highly competitive business environment, a number of factors can contribute to ones success or failure; clearly some of these factors involve gender differences in nonverbal communication. The employment interview is a defining point in a process leading to a specific outcome: one is either hired or rejected. In such a pivotal situation, it is possible to evaluate the impact of gender nonverbal factors on the impressions created and the final employment decision. There has been little, if any, research linking all four of these areas together (gender differences in nonverbal impression management techniques operating in the employment interview situation). I believe a compilation of the research conducted in this area will help direct subsequent research into areas that warrant further investigation. Some of these areas of study might include more effective communication between individuals of different genders, better encoding and decoding of one's nonverbal cues, and better evaluation of applicants during an employment interview, all of which would contribute to greater communication in the workplace and better employee selection decisions.

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Appendix

A Classification Scheme for Impression Management Behaviors

	TACTICAL	STRATEGIC
DEFENSIVE	Accounts - excuses, justifications Disclaimers Self-handicapping Apologies Restitution Pro-social Behavior	Alcoholism Drug Abuse Phobias Hypochondria Mental Illness Learned Helplessness
ASSERTIVE	Entitlements Enhancements Ingratiation Intimidation Exemplification Self-promotion Supplication	Attraction Esteem Prestige Status Credibility Trustworthiness

Source: Tedeschi, J.T., & Melburg, V. (1984).

The Impact of Historiography: Piracy and Religion from 1590 to 1660

Kelley Littlepage

It is the year 1636 C.E., thousands of men and women awaken to the sound of a solitary bell. They pick themselves up off a stone floor, dispersed with straw and the occasional rodent scrambling across their feet, desperately searching for a scrap of food. The air is damp, and the only light in the rooms is a six by twelve inch slate, eight feet up the wall. A tattered, old wooden door, made of the remnants of a wrecked ship, opens, and three small loaves of rye bread are handed to every person in the room - they are the only subsistence of the long day of manual labor, building the very ships that have enslaved them. The only comfort to be found comes from the words of a Christian preacher, who is allowed to preach the gospel to his fellow Christians from his cell. Those that can write, send letters home to England, begging for the charity of family members to secure a quick release from the confines of Barbary captivity.[1]

In England, the government was desperate for funds and thus had none to send, but amidst all of this chaos, an anonymous suggestion was made to King Charles I: that captives should be exchanged for British prostitutes at a rate of one prostitute for six sailors.[2] Though the suggestion was never implemented, it is reassuring to know the value of a good sailor, or more accurately, a good British whore. John Dunton observers that British women were especially prized among the Barbary States, entering into the Sultan's harem and one even became the favorite wife of the King of Morocco.[3] This was the atmosphere experienced by those who fell victim to the Barbary pirates, for captives were often a more lucrative source of income than the cargo.

The classic interpretation of piracy between 1590 and 1660 in the Mediterranean was that it was an outlet for religious animosity, pitting Christians and Muslims against one and other. Piracy was in simplest form the remnants of the Crusades. For the Christians, piracy was a Machiavellian technique to molest Eastern shores for their inability to recapture the Holy Land. For the Muslims it was a means to exact retribution for the Crusades. Unlike most of my predecessors, my thesis/Capstone will argue the contrary that piracy was driven by economics and politics and was not constrained by a dichotomy of religion and ethnicity.[4] From 1590 to 1660 piracy in the Mediterranean surged to new heights as Christians and Muslims jointly engaged in piratical acts against rival economic and political powers despite their faith. During this time period, the Barbary States, Britain, and the Ottoman Empire engaged in mutually beneficial acts of piracy and forged alliances to surmount the political power of

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[1] This story was created by including descriptions of individuals living in captivity from the following sources: George Carteret, *Carteret's Barbary Voyage of 1638* ed. P. Penrose (Philadelphia: 1929); Robert Blake, *The Letters of Robert Blake together with supplementary documents* ed. J.R. Powell (London: Navy Records Society, 1937); and *Piracy and Diplomacy in Seventeenth Century North Africa* ed. Pennell, C. R. (London: Associated University Press, 1989).

[2] State Papers, England, 1635 16/13/f.9.

[3] John Dunton, *A True Journal of the Sally Fleet, with the proceedings of the voyage* (London: Nicholes, 1637).

[4] In any study of the commerce and mercantile practices of this period, it is crucial to define the terminology of piracy and to identify the specific ethnic groups engaged in such practices. A corsair attacks vessels belonging only to countries that are enemies of his own; where states support piratical acts without publicly admitting to it. (Wolf, 113) Corsairs were often thought of as fighting a crusade or jihad through economic means, like the Knights of St John in Malta, who molested the Moors and Turks or like the British, who molested the Catholic coasts of Spain. These two example revolve around Mediterranean and European politics rather than differences of religion. Sir Francis Drake, a reputed pirate, was a corsair, "though she lent Queen's ships to his later ventures and took a royal share of the profits, Elizabeth I was always quick to deny any knowledge of Drake's plans or any responsibility for his behavior" (Mattingly, 84). In contrast, pirates "were patently contemptuous of all rulers and state authority" (Hebb, 9). Pirates answered to no government authority, and would "attack indiscriminately the ships of any nation" who cross their path; their "sole object was loot." By the seventeenth century the need for corsairs had diminished as alternative diplomatic relations became prevalent. Corsairs naturally turned to piracy, where they could perform the same duties they had before under new leadership.

the Spanish and the economic might of the Venetian merchants.

Though an extensive review of primary and secondary historical literature, my thesis/Capstone paper will establish that economics and politics were the primary promoters of piracy in the Mediterranean. The historical literature consulted will include world renown academics, such as Edwards Said, Bernard Lewis, and Fernand Braudel, and the leaders of historiographical schools of thought, including Sir Robert Lambert Playfair and Sir Godfrey Fisher. The primary source material is predominately journals, official government documents, and memoirs from ambassadors. The final product will contain a discussion of the role of religion and a dissection of economic and political relations between the Ottoman Empire, the Barbary States, and Britain.[5] While my thesis/Capstone paper focuses on the history of the time period and the interpretation of sources, this paper will concentrate on a discussion of previous historiographical approaches including Orientalism and the significance of my work to the historiography.

Historiography is the study of the way in which a historical event has been written and the changing interpretations of those events, rather than the actual studying of past events. A historiographical approach is the school of thought (of historiography) that a historian belongs to. Each school of thought has its own methodologies, theories, and patterns for studying, collecting, and interpreting history. Each school of thought privileges certain types of sources over others and encourages certain types of theories over others. For example the revisionist school of thought, to which I ascribe in this paper, argues that facts and historical information are like pieces of a puzzle. The pieces of the puzzle never change, but they can be rearranged to create different pictures based upon interpretation. In historiography, revisionism is considered to be the most controversial or extreme approach because pieces of the puzzle are often arranged in radically or extremely different ways than has been previously done. There are dozens of schools of thought including the Marxist approach, post modernism, metahistory, neo-revisionist, etc. and over the next few pages this paper will discuss the major historiographical groups that have influenced the way in which piracy in the seventeenth century Mediterranean Sea is written.

Prior to the late nineteenth century there were no firmly defined schools of thought and authors and movements were defined not by titles, but by common principles and conclusions. In the eighteenth and nineteenth century, Sir Robert Lambert Playfair and his work *The Scourge of Christendom* defined the popular approach to studying piracy in the Mediterranean. [6] Piracy was deemed the profession of Muslim "heathens" who plagued the shores of good Christian countries throughout the West until imperialistic powers were able to conquer and "civilize" the East. Playfair, like so many of his contemporaries, customarily provides accounts of the Barbary States that cease abruptly with capitulations of the city of Algiers in 1830 and present a conventional happy ending, consisting of the deliverance of the Mediterranean from the scourge that had lasted for centuries into the hands of the civilized Westerners.[1] That Playfair choose *The Scourge of Christendom* as the title of his work signifies the religious connotations of his argument and the animosity that Playfair, a British consul to Algiers in the 1860's, felt towards those he was supposed to foster a relationship with. Playfair's image of the pirate was a Muslim or a Christian convert to Islam, as if Islam were the corrupting force driving good men to evil ends. For Playfair piracy was not centralized solely around the premise of

[5] Like the terminology of piracy, the individual ethnic groups that engage in piracy were frequently and mistakenly lumped together. The term Barbary was derived from the original Berber inhabitants who were Moors, not Turks. To most of the West, these two terms held little distinction: both were Muslim, both were believed to be the militant enemies of Christendom; the Moors because they were fierce pirates and corsairs and the Turks because they were the Ottoman invaders of Eastern Europe. The Moors were North Africans, were typically Muslim or Christian by birth with medium to fair skin color, and inhabit the Barbary States. The Barbary States were satellite states of the Ottoman Empire located on the coast of North Africa and include Algiers, Sale, Tunis, and Tripoli. The Turks, on the other hand, were the citizens of the Ottoman Empire, raise from birth to be Muslims and can trace their ancestry back to the Arabian Peninsula.

[6] Sir Robert Lambert Playfair, *The Scourge of Christendom (New York: Books for Libraries Press, 1884).*

[1] Sir Godfrey Fisher, *Barbary Legend* (Westport: Greenwood Press, Publishers, 1957), pg 3.

religious differences, but rather that heathens and uncivilized nations engaged in it.

The following significant pattern emerges in the 1950's in Fisher's *Barbary Legend.*[2] Fisher belongs to the structuralist school of thought. Structuralist explores the inter-relationships to determine how meaning is produced within a culture. For historians structuralism usually involves the comparison of two cultures who define themselves based upon their relationship to each other or by rejecting the culture of each other. For Fisher the image of the East was falsely and intentionally belittled to inflate the image of superiority in the West. Fisher argues that "the alleged addiction of the peoples of North Africa to piratical attacks on southern Europe and the inclusion of them in the term 'Barbary pirates' appear to be merely a corollary to the nineteenth-century concept of a rigid dividing-line in the Mediterranean between Christians and Moslems, or between Western civilization and oriental or African barbarianism."[3] Fisher's argument is a direct rebuttal to the eighteenth and nineteenth century trend; he explores piracy as a Christian phenomenon, not as the profession of Muslim heathens.

The Annales school began in the late 1920's in France, but did not have widespread popularity until the 1960's through Braudel's masterpiece *The Mediterranean and the Mediterranean World in the Age of Philip II.*[4] The Annales school of thought stresses the importance of geography, social histories, and sociological approaches to the study of history while downplaying the importance of war, diplomacy, and politics. Braudel was the first author to argue that piracy was perpetrated by Europeans, Moors, and Turks against any enemy, whether foreign or domestic, and of any faith. Piracy was the tool to combat differences of religion, political animosity, and cultural discrepancies.

Fisher was ahead of his times and it is not until the late 1970's in Edward Said's famous work *Orientalism,* that his conclusions reemerged and produced widespread controversy and discussion.[5] Said argues that the idea of us versus them, has existed to a greater extent in the minds of orientalists, than has actually occurred in history. While Said does challenge the archetypal Western standards of thought, "most historians, even those who are citizens of Ottoman successor states, feel more comfortable with western European than with Ottoman sources because they are trained in Western techniques, models, and thought processes." [6] Edward Said's *Orientalism* is a critique of the application of Western values and standards on a non-Western culture.

The concept known as Orientalism focuses on imperialism and the relationship between the dominating Western power and subjugated "Orient" culture. Said's work describes a bias against non-Western peoples, who have been classified as the oriental "Other". Said's work represents a challenge to the academic world to look beyond the predominate biases and assumptions, for if the historian fails to come to grips with use of dominate western models in the discourse of the "Other", then the historian is participating the continuing conquest and subjugation of the culture, despite their intentions. Said argues that since the eighteenth century, and perhaps even arguably before, Western culture has fabricated the image of the Orient. This image reveals more about the illusions and imaginations of the West, than it does about the culture of the "Other". The "'Ottoman peril' lurked alongside Europe to represent for the whole of Christian civilization a constant danger" and the need for an inflated European sense of superiority in order to defeat them.[7] The existence of the Orient serves the interests of the West, it is constructed by and observed in its relation to the West. The Orient is the image of everything inferior to the West. Orientalism is the methodology of viewing the Orient in this inferior position and transcribing this viewpoint into an academic or intellectual discourse. Western historian tend to judge the Ottoman Empire based upon Western standards, but it is also true that

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[2] Sir Godfrey Fisher, *Barbary Legend (*Westport: Greenwood Press, Publishers, 1957)

[3] *Ibid.,* 23.

[4] Fernand Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II* vol. I & II (New York: Harper and Row Publishers, 1973).

[5] Edward Said, *Orientalism* (New York: Vintage Books, 1978).

[6] Daniel Goffman, *Britons in the Ottoman Empire, 1642-1660* (Seattle: University of Washington Press, 1998), 11.

[7] Said, 59-60.

historians apply these Western standards more rigorously to the "Other", precisely because they are separate. As the "Other", the need to prove themselves as an equal requires twice the effort. Western society judges everything according to their own standards, not allowing for great disparities in taste.

Orientalists writing from the eighteenth century through World War II tended to be generalists.[8] He/she made general theories about the Orient as if all of the Orient could universally be explained by simple one size fits all answers. The generalization that something was Islamic did not account for the variances from one state to another in the Middle East. Generalizations were typically made about Islamic law, Islamic culture, Islamic literature, etc. Concepts or practices found in one nation in the Middle East were therefore viewed by colonial powers as typical of all nations in the Orient. This is like visiting France today and assuming that the strict separation of church and state is prevalent in all of Europe, when in fact countries like Germany have no separation of church and state to this day.

Edward Said's *Orientalism* became one of the key parks to the school of thought known as post colonialism. Post colonialism strived to overcome the effects of imperialism and the one-sided histories created by authors like Playfair. Post colonialism endeavors to come to grips with the legacy of colonialism and the subsequent struggle for a new identity, with the removal of colonial rule. In the historical arena, post colonialism is concerned with the misguided acquisition of knowledge about the indigenous culture, either to inflate the image of the colonizers superiority or to view the culture merely through the prism of the colonizers standards. Post colonialism and Said's work have influenced countless modern day authors.

My thesis is significant not for its conclusions, which are not unlike those drawn by my predecessors, but for the time and effort I have taken to reevaluate the motivations behind seventeenth century piracy in the Mediterranean. This attempt at a reevaluation makes sense once we add Said's *Orientalism* to the historical discourse. Historians have long been taught to sift out corrupted or illegitimate accounts of events. Said emphasizes that interpretive works advocating Western modes of thought should also be held up to scrutiny or completely distanced from affecting conclusions. The most popularly read primary source documents on piracy at this time were written by individuals who spent less than six months in either the Ottoman Empire or the Barbary States or were written by missionaries who were in perpetual conflict with Islam. My research is based upon a study of government documents and primary sources written by individuals who lived in the Ottoman Empire or the Barbary States for years. Over the past few months I have sifted through hundreds of primary sources looking for sources written by individuals who spent years living in the Ottoman Empire and/or the Barbary States, who experienced the Eastern culture, and who were specifically involved in piracy and/or its effects. Historians have allowed this culture clash between East and West to dominate the their discussions of the Mediterranean. In the process, piracy in the Mediterranean has been falsely epitomized as a culture clash between East and West. But according to the sources I consulted, 17th century piracy did not serve as an outlet for this clash; rather, it is better understood in relation to political and economic conflicts between sovereign states .

My capstone research has led me to challenge the archetypal relations assumed by historians, predominately that religion was the motivating factor to engage in piracy between 1590 and 1660. Through a careful selection and examination of primary and secondary sources, I have attempted to study historical events in a manner culturally, ethnically, and religiously sensitive to all sides. Following Said's advice, I have tried to balance Western sources with Eastern sources, as well as to direct my focus away from sources that contain definite political and religious biases. Finally, I have framed my discussion of piracy as a function of political and economic relations between sovereign states rather than as a function of opposing cultural entities. How historians approach history is as important as the history they attempt to study. It is not merely enough to study history; the methods through which history is studied must be constantly questioned in the search for an improved methodology.

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[8] *Ibid.,* 255.

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Revisiting The First Amendment: The Meaning of Separation of Church and State

Caleb Couchman

"Politics is an earthly reflection
of a spiritual battle."
--- Caleb Couchman

My experiences

It was during my freshman year at Modesto Junior College, in Psychology 101, when I realized I was different. Psychology 101 was one of those classes everyone has to take, so they herded us into a huge lecture hall and the teacher gave lectures she had probably been reciting for years. But this time it wasn't just a regular lecture. The teacher had invited a gay man to discuss his homosexuality with the class, and she herself was lecturing on this topic as well: "INAH-3 hypothalamus cells in homosexual male cadavers were significantly larger than those of heterosexual counterparts," the teacher said, or words to that effect. Then the kicker: "That's something you might not have learned in Sunday school." Ouch. I suppose this may have been the first time I felt blatantly attacked for my religion. It was quite an eye opener. I don't think I said anything in class; it is easy to not get called on in those big lecture halls. I left it to the other students to ask questions of the man invited to class to discuss his homosexuality.

This event initiated an interesting development for me. I wondered if it would mark my school years. I had grown up in a world where Christianity was accepted, I had gone to Christian schools all my life. Now I was in a place where my ideas seemed foreign and out of place. I was told this would happen though, and so I accepted it and moved on. I am glad to say that for the most part this sort of experience has not repeated itself. There are subtle comments that I pick up on, "the myth of Adam and Eve," and certainly the acceptance of evolution as the explanation of Earth's beginning. But I think that most teachers probably don't even realize they are doing it.

"But is that size difference a cause or an effect of homosexual activity?" Andree Seu asks.[1] Andree is even willing to concede that homosexuality is genetically linked. She writes a concise article on how Christians should view things that may seem natural to us. This same question that came up at the beginning of my college career came up again a few days ago as I approach the end of that career. In a survey given out by sociology students to test methodology, I was asked the question, "Do you know a gay person?" The question threw me because of the things it implied about homosexuality and how they were different from my worldview. See, I now know a person who was gay and living in a homosexual lifestyle. Now he has been born again and is in his words, "looking forward to the wife God has planned for him." So I didn't know how to answer the question because it seemed to imply that you are born gay and cannot get out of it. Is my new friend gay or not? No, I guess he is not. However, the very worldview I come from says something about this simple yes or no question that is different from the question's implications. I don't mean to attack homosexuality specifically. I don't see it as different from any other sex outside of marriage, or worse than other sins. It is simply that my view on the subject is different from many people in this world, and that it has been pointed out specifically on this issue.

"Providence has given to our people the choice of
their rulers, and it is the duty, as well as the privilege
and interest of our Christian nation to select and
prefer Christians for their rulers."
--John Jay, first Supreme Court Justice

Who am I?

I wonder what I am sometimes. In politics, it is often easier to label yourself (or the other side) as one thing and say that this is who or what you are. I have noticed this phenomenon and it seems that we pick whatever group we are in and label ourselves with it and then hang around with those types of people. Latinos hang with Latinos, blacks with blacks. It doesn't have to be race though, Christians hang with Christians, liberals with liberals, teachers with fellow

[1] Andree Seu, "Born that way", World Magazine,

teachers, gays with gays, etc. Maybe it is not that you hang out with the same sort of people but I think in a way we tend to identify with people who are from the same group as us. Labels, in politics, are meant to clarify. It helps us to find voting trends or how the socio-economic status of our country is divided. The labels we put on ourselves can be race, religion, occupation, or even a hobby we have or something we enjoy (think NASCAR dads). In the end we are all human, but these labels help to add something, to make us a little bit different. Maybe they are not a bad thing.

I am a Christian. I "self-identify" as one at least. However, 85% of Americans would say that they are Christian as well. Why is it that it seems to me that Christianity and its beliefs are in the minority? When trying to define Christianity I went to see how it could be officially classified in polls. I found that 31% of the adult population identify as born-again but not evangelical. That is still near a third, which is a lot. However, evangelical Christians (a subset of born-agains that believe in some basic Biblical truths) are only 7% of the adult population.[2] This is less than some estimates of the percentage of homosexuals in America (often cited at 10%). This would be the minority that I identify with and perhaps explains why I feel that my views are hardly the norm. Even in this group I may be considered conservative. For a fair look at what evangelicals believe, I would recommend a recent National Journal report called "The Faithful."

Some liberals would define evangelical Christians in a different way. We are seen as bigoted, intolerant, people driven by exclusionary ideology. It is hard to talk to people who see us this way, in the end I can only control myself and try to show them love. Still, in stereotypes we often find some truth. I could be considered bigoted because I cling to the Bible as the source of morality and truth. Indeed, I believe that some of the political battles we face today are supremely about where we derive our morality. I could be considered intolerant because I am willing to call some things wrong. Whenever you are willing to call something wrong there will always be someone in this world who will stand up and say it is right. That is how the world currently operates. And when you declare something to be wrong, you are labeled intolerant. Tolerance used to mean that you accepted that a person has the right to live the way they pleased even if you did not approve of it. It has been usurped to mean that you must accept the way they live as wholly good and as completely acceptable as any other way of living. In fact, you cannot be critical of something today without the possibility of being labeled as intolerant towards it. This is a scary thought when all critical thought about what is good for society as a whole is shut out in order to please the individual's personal feelings on the subject. Finally, Christianity in its fundamental form is seen as exclusionary. The Bible says, "let it be known to all of you and to all the people of Israel, that by the name of Jesus Christ the Nazarene, whom you crucified, whom God raised from the dead--by this name this man stands here before you in good health. And there is salvation in no one else; for there is no other name under heaven that has been given among men by which we must be saved." (NAS, Acts 4:10,12) Jesus himself said, "I am the way, and the truth, and the life; no one comes to God but through me." (John 14:6) Christ also said, "For the gate is small and the way is narrow that leads to life, and there are few who find it." (Matthew 7:14) This is hard to hear in America where we believe that all paths lead to Heaven (if you believe in it at all). So in a way it is exclusionary, but please don't take this the wrong way. After saying these things, I must still emphasize that the good news of Jesus Christ is available to all people, everywhere, no matter what you have done. However, the gospel just doesn't fit sometimes in a world where all religions and lifestyles are said to be equally valid.

Evangelicals are sometimes called fundamentalists. When I was playing basketball, we were taught the fundamentals. These fundamentals are the core beliefs, the very essence of what makes a thing what it is. In basketball, you must excel in the fundamentals first and other skills will follow. If you lose the fundamentals, you have lost the sport entirely. Now fundamentalism has become a bad word. It is seen as being backwards. Islamic fundamentalists attacked the United States on September 11th. This may or may not be fundamental to what Islam is about (that is up for debate). However, fundamentals are not in and of

[2] http://www.barna.org/FlexPage.aspx?Page=Topics

themselves bad, and sticking to them is sometimes very important. It is disturbing then when I hear comparisons in fundamentals slip from one religion to another so easily as was done in a recent New York Times Magazine article.[3] Islam and Christianity are being lumped together as one, and the trend is quite disturbing. There will always be some that believe that religion, in general, is the opiate of the masses. However, recently, there has been a push to associate two distinct religions as very much alike in regards to their fundamentalism.

The reason I try to make this distinction about fundamentals is that its application is directly relevant to how you view the separation of church and state. One of the objections that has been laid before me is that we should look at what happens when religion controls the government. For instance, the Taliban and Iran, as well as Saudi Arabia, were/are under Shariah law and see themselves as theocracies. The problem with this thinking is that it completely ignores the differences between Islam and Christianity. These governments are built upon a belief system that is entirely different from Christianity.

Another point I have noticed is that I don't think of myself as religious. Religion now has negative connotations. I think this stems from the rules that accompany religion, as well as religion being seen as limiting freedom. As I walk in the Christian faith, I believe that the rules are quite excellent and are not there to harm me but to help me. Also I perceive myself as freed by, not limited by this religion. In short, my faith is about trying to do my best to walk with God, not about following rules.

"Despotism may govern without faith, but liberty cannot. Religion is more needed in democratic societies than in any other."

--Alexis de Tocqueville,
from Democracy in America

My Rationale

I have mentioned all of these experiences and thoughts not to complain. Persecution of Christians is happening around the world and for me to count any of my experiences as such would be foolish. Christ said, "Blessed are you when people insult you, persecute you, and falsely say all kinds of evil against you because of me. Rejoice and be glad, because great is your reward in heaven." Rejoice at persecution! Surely these aren't the words of a mere man. Persecution of Christians has, historically, caused the church to grow. No, stopping persecution is not necessarily a goal and I actually expect it as this world is a diverse place full of many contradicting ideas. But I want people on the outside to know that coming to college can be a trying experience for a Christian, especially one who is not grounded in the word of God. I want to provide examples of the kinds of biases against Christianity that permeate our thinking, perhaps without even knowing it.

In America, we have the ability to transform our government and we should use this ability to put religious freedom at the forefront of what makes America different from other nations. Other countries are heading towards the path of secularism. Secularism is the belief that morality should be based on the well-being of mankind without any consideration of religious systems and forms of worship. Secularism is also the point of view that religion should not be introduced into public education or civil affairs. Although morality should be based on the well-being of mankind, we differ in what this means and how it should be accomplished. Secularism says that religious systems have no place in determining these things. That religion, though it clearly addresses moral issues, should be kept away and should not have a place at the table in policy making. We see examples of the slow degradation of the right of religion to exist and influence policy in countries other than America. France has recently outlawed the displaying of religious symbols in public, including crosses, yarmulkes, and especially disturbing for Muslims, headscarves.[4] A British political party leader is under arrest for calling Islam evil. Perhaps this falls under freedom of speech, but freedom of speech and religion are very similar.[5] In

[3] *The New York Times Magazine,* Oct. 17, 2004, p. 46

[4] http://worldmag.com/displayarticle.cfm?id=8493

[5] http://www.cnsnews.com/ViewForeignBureaus.asp?Page=%5CForeignBureaus%5Carchive%5C200412%5CFOR20041215d.html

Canada, they are attempting to make it "hate speech" if you say that homosexuality is morally wrong.

Even in America, we see these types of issues coming up. The Plano school district recently outlawed green and red from Christmas parties because they are seen as religious.[6] A principal wouldn't allow Morgan Nyman, a second-grader, to pass out cards with religious messages on them, saying they violated the separation of church and state.[7] This basic misunderstanding of the role that religion should play in public is becoming more prevalent throughout the world.

I want to stop the mindset that this separation of church and state causes. Those of faith are being frightened to speak out for fear of reprisal and their rights to freedom of religion and speech are being taken away. I want to get away from the idea that religion and politics shouldn't mix because not only is it impossible but it is not a good idea. A recent poll by USA today said that 48% of Americans thought that the church or organized religion currently has too much political influence in America, while 40% said it had too little. However, 64% said the church had too little moral influence, while only 27% said the church had too much influence. What I don't understand is why there is a willingness to give morals to the church but not politics. Americans do not understand two things. One, that the laws we make shape our morality. But also, importantly, that while the laws shape our morality, the laws are an actual reflection of our morality. Therefore, a call to increase moral influence while not calling for an increase in political influence is not only ineffective, it doesn't make sense. We have created a dichotomy in our society in which morals can't interact with politics, and then wonder why our politics are so immoral.[8]

As a Christian, in writing this paper, I am forced to confront myself in how much I am willing to put my beliefs on others. I believe that you both can and cannot legislate morality. Morality is first and foremost personal and laws themselves do not make a person moral. However, all laws legislate someone's morality, and the laws that we make set the moral climate from which the culture as a whole stems. As a result, fighting to create laws that are moral is a necessary thing to do.

I was asked, "Do you want America to be a theocracy?" My immediate thought was, no, of course, I wouldn't, thinking of examples of Saudi Arabia and Iran. But the more I thought about it the more the answer 'no' was just too simple. I believe God has shown us how to live, and that as our Creator He knows that this is not only a good way to live, but it is the best way for us to live. If a theocracy is a state that follows the laws of God then that is the best state and the best government. However, this sort of theocracy is the idyllic one that can not come to pass here on Earth (until the end).

In the meantime, even if we can gather a "Christian" majority to vote in laws, we still must be careful to not trample on the rights of minorities that are outlined in the Constitution. This, of course, is the whole idea of Constitutional law and there is a continuing fight between forces on both sides that tends to balance the issue out in the long run. There is this idea that you will be forcing someone to do something if you make it into law. This is hardly the case as people disobey laws all the time. Indeed, some laws in this world ought not to be followed. The fear seems to be that people will lose rights or freedoms if fundamentalist Christians get their way. I suppose that this could be true, but only because we have taken as "rights" things that are wrong. In other words, only certain rights should be considered fundamental. We should not work to make everything a "right," we should keep a few broad rights as fundamental and vigorously defend these for everyone. This includes freedom of speech and religion. Thus, in America, people must be allowed to believe what they want to believe. Even as an evangelical Christian, I would not wish to have this changed, even if I had the power to "make" everyone believe the same thing through public policies. In the end, I believe that living in a land with Christian laws is conducive to freedom, not harmful to freedom.

If you want to see a country that has its government founded on Christian principles then you should look no further than the United States of America. It has not lost its religious freedom. It allows people to operate their lives in the way that they wish. It is a great country. I started off to

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[6] www.alliancedefensefund.org

[7] "Truth with triumph", World Magazine, Nov. 20, 2004

[8] www.usatoday.com/news/polls/tables/live/2004-11-22-poll.htm

criticize America but through study realized that this country was founded on ideals that have allowed the religious freedom I have. I am blessed to be living in America. Still there is room for improvement and I will look into how we can continue to expand religious freedom. I will look into the founding father's original intent and see if we are upholding that intent today. I will critique certain Supreme Court decisions and see how the Supreme Court has negatively impacted the way we perceive separation of church and state.

Reflections on the Declining Involvement of Hispanic Students in Higher Education: Evaluating the College Entrance/Graduation Rates Among Latinos at CSU Stanislaus

Mariel Zamora

Introduction: The option to attend college is a choice many high schools students look forward to making after high school graduation. Indeed, the idea of attending college is implanted long before students reach their senior year in high school. Attending college is an opportunity that is important to many different cultures, and especially to the Hispanic culture (though not necessarily *within* the Hispanic culture). In recent years there have been many legal and policy-making advances for equal opportunity education for all races, starting with the famous case of *Brown vs. Board of Education of Topeka, Kansas*. Additionally, policies have been implemented on a national scale, most notably affirmative action, in order to ensure equal opportunity in the work place and access to higher education. The question is: are the nationwide Hispanic enrollment, retention, and graduation rates concurrent with CSU Stanislaus retention, enrollment, and graduation rates? And despite advances in Hispanic student enrollment at colleges and universities, could it still be the case that Hispanic graduation, college entrance and completion rates are actually dropping? I will focus my research on (1) showing what the problem may be; (2) some reasons for the problem; (3) what is being done to address the problem; and 4) what can be done to improve the situation for Hispanic students.

If there is a hidden issue regarding lower success rates among (a larger population of) Hispanic students, it needs be addressed in an aggressive manner. As teachers, future teachers, parents, neighbors, and citizens, we should be concerned to know why so many students in this group are not succeeding. Through research on the CSU Stanislaus Hispanic retention rate, I hope to answer the question of whether Hispanic college entrance, retention, and graduation rates are indeed declining. If this is shown to be the case, my focus will then shift to what can be done to improve the situation. If I do not find a problem reflected in declining success rates among Hispanic students, perhaps I will be able to demonstrate how CSU Stanislaus is succeeding in its efforts to create an environment in which the involvement of Hispanic students is maintained or perhaps even increased.

Rational: Despite recent advances in the higher education support system, Hispanic students are often derailed as they travel along the path of higher education. Many Hispanics are facing low expectations from teachers, poor understanding of how the college system works, and little or no adult support. The sample group I plan to focus on is the Hispanic student population of California State University Stanislaus. Stanislaus, Merced and San Joaquin counties are major sources of university students and are home to many Hispanic residents. CSU Stanislaus is proud of its designation as an Hispanic serving institution. The campus provides many opportunities to aid students, and appears to have higher than average retention and graduation rates amongst the Hispanic student population. I want to investigate whether these rates can be tied to special, successful support programs, and if so, how these programs might be modeled or enhanced for replication elsewhere.

Purpose Statement: My purpose in researching this topic is that I am a Hispanic student who is concerned about other students of my own ethnicity. I am striving to be a future teacher and I believe that I need to know what is affecting some of my possible future students who may be of Hispanic descent. This issue is important because despite past legal and legislative action taken to aid Hispanic students in going to college their involvement in higher education may be declining. Therefore, it is crucial to understand why Hispanic students may not be taking advantage of these resources to benefit themselves not only as individuals, but also as members of an ethnicity group. It is important that I examine the issue now before I begin to teach, so that I may prepare responsive measures in order to help my students succeed.

Methods: In my research I plan to research the enrollment, retention, and graduation rates of CSU Stanislaus students, and the services CSU Stanislaus is providing in support of Hispanic students. CSU Stanislaus already provides many opportunities to assist students. Two programs in particular will be a major focus of my research. Student retention is handled through Students Support Services (SSS). SSS has the purpose of catering to low-income families, first generation students, and disabled students. SSS is connected to a program called TRIO, which is a federally funded program authorized under the Higher Education Act of 1965, Title IV, Part A, Subpart II and administered by the U.S. Department of Education. There are over 1,200 colleges, universities, and community colleges participating in this program. The TRIO program is something many low-income families depend on. TRIO is also available to students from middle school through college. The Student Support Services Office at CSU Stanislaus provides students with academic advising, peer advising, and free workshops and tutorial assistance.

Another opportunity for CSU Stanislaus students is found in the Faculty Mentor Program. Through this program, faculty mentors are provided to students, along with educational and recreational programs. The target groups are first generation college students and disadvantaged students, which together encompass economically, educationally, or environmentally disadvantaged students. The Faculty Mentor Program information packet claims that this service increases the retention, academic success, and graduation rate of "underrepresented minority students"(Faculty). The Faculty Mentor Program also claims to increase faculty awareness about minority students and their needs.

Another program I plan to research is the Puente program. This important program is available at community colleges. The significance of this program for my research traces to the fact that it is available at Merced College, which is a community college from which many Hispanic students transfer to Stanislaus. The Puente project is an academic program that prepares students to gain an education by helping them to enroll in four-year colleges and universities, gain a college degree, and then give back to their community by returning as mentors or teachers.

There are three areas of service that the program provides to students. These are: teaching, counseling, and mentoring. Puente also provides training to staff and faculty of high schools and colleges on how to provide this program to their students. The Puente program is currently functioning in 56 community colleges and 36 high schools in California. One interesting feature of the Puente program is that it is open to all students. Still, the Puente program offers an inside look into what community colleges are doing to involve Hispanic students in the college systems. This may be a program four-year universities should look into, in particular to see if community colleges are doing a better job with Hispanic engagement in higher education. If so, how are they able to accomplish this? However, this focus may also raise a question about the relative treatment of community colleges and state colleges in the context of state funding. These are just some of the avenues that need to be explored, in trying to implement or maintain programs designed to address Hispanic student attrition.

It is also important that the programs at CSU Stanislaus be analyzed in order to show what limitations they have or are facing. One of the recent limitations CSU Stanislaus faces is a decline in funding of student-based programs. There are budget cuts to services that many Hispanic students would rely on. For example, the SSS program is limited and due to federal funding it is only available to fewer than 5 percent of eligible youth and adults (Students).

Not only do support programs have to deal with a lack of funding, but many of the qualifications they insist on leave out students who might eventually need some services to succeed in school. This can be an issue for middle class Hispanic students at CSU Stanislaus. The SSS program has certain qualifications that an applicant must meet in order to receive assistance. For example, they must fit in the low income category, have a financial aid application filed with the financial aid office, be eligible for Pell grants, have unmet financial need, and be a first-generation college student or have a disability. This is where the difficulty for middle class Hispanics arises. A middle class Hispanic may have an unmet financial need but still not qualified to receive these services

(or they might only receive them if they can pay for them). There are Hispanic students who are not first generation and may have to work or have some assistance from their parents to attend college. Therefore, they may enter college only to eventually discover they need tutoring assistance they do not qualify for. Some of these Hispanic students may eventually become discouraged or unable to continue their education.

If there does seem to be a decrease in the retention rates of Hispanics, then recommendations should be made to address the situation. One recommendation has been made by Raymond Padilla. I am currently researching a study of his entitled *Chicana/o College students: Focus on success*. Padilla conducted this study with an emphasis on trying to increase Chicana/o success in college. He decided to focus on students who succeed in college by completing their degrees. He describes the college experience as a Black Box where the inputs and outputs are clear, but where the "in between" process of college is not sufficiently clear. He calls the college experience a black box because certain inputs go in and certain outputs come out (Padilla 3). The black box is something that students enter "with varying characteristics and experiences leaving the black box, either with a degree or as dropouts" (Padilla 1). He studied the expertise of students who have completed their degrees and were able to overcome the barriers that prevent many students from succeeding. The most significant expertise factors he emphasizes are theoretical and heuristic knowledge relevant to negotiating barriers (Padilla 1).

It is not only important to see if Hispanic students are dropping out, but also to discern how the term "drop out" is defined. This is a difficult term to define because there are numerous explanations for why a Hispanic student might leave college, whether it be for financial, personal, or academic reasons. Some students may not even fall into this category because they may enter college with the intention of never completing and for them "dropping out" is part of their original plan (Noel, 2). Drop out rates might also be skewed because some students may take a leave of absence and then continue their education later on, perhaps even at another school; it is not uncommon (though surely inappropriate) for these students to be classed as dropouts. A source I found helpful in defining the term 'dropout' -- and which also offers new perspective on how to reduce the drop out rate -- is Lee Noel's book *Reducing the Dropout Rate*.

If there is a drop in the college participation rates of Hispanics, it is important not only to develop step by step plans or programs that will help students, but also to find a new way of thinking about the phenomenon of student dropout that can be implemented in a variety of settings (Tinto, 4). It is important for educators to acknowledge the potential for student dropout and to reflect on why it might occur; it should not just be a problem for students to deal with on their own.

Moreover, I will argue that retention should not be the ultimate goal of institutional action, though it may be a desirable outcome of institutional efforts. Instead, institutions and students would be better served if a concern for the education of students, their social and intellectual growth, in particular, were the guiding principle of institutional action. When that goal is achieved, enhanced student retention will naturally follow (Tinto, 4).

Once we establish whether or not Hispanic student involvement is dropping, the issue of how students are recruited and retained must be examined. Two studies conducted by *New Directions for Institutional Research* focus on these issues. The first is "Evaluating Student Recruitment and Retention Programs," edited by Don Hossler. This study offers an evaluation of retention programs and suggestions for "establishing an evaluation oriented student information system" (Hossler, 1-3). Hossler's study goes into detail in its analysis of how financial aid affects recruitment and retention, which is a major issue facing economically disadvantaged Hispanic students. Not only does Hossler evaluate these programs, but he also gives advice on how to track the academic progress of students. He also provides information on students who could not be retained and discusses why they ended up leaving college.

The second study is "Understanding the College Choice of Disadvantaged Students", edited by Alberto F. Cabrera & Steven M. La Nasa. This study analyzes how disadvantaged students and families choose a college. Not only does it deal with students and how their disadvantages may hinder them from

attending college, but it also discusses how their parents' education level can affect them while in college or while making the decision to go to college. It also describes programs a college can provide that tend to encourage a continuing engagement of the college experience by this group of students. The focus of this study is addressed primarily to college administrators and enrollment management professionals (Cabrera & Steven, 1-3).

In conclusion, I find the issue of Hispanic involvement in higher education very important to the study of ethnic diversity at CSU Stanislaus, given its designation as an Hispanic-serving institution. This issue is also be important to other state universities and colleges in California, since California has a very large Hispanic population. It is vitally important that we find ways to engage this increasing population of students into the higher education system. Their involvement is not only beneficial to their own ethnicity group, but it helps them develop their ability to give back to their community and country. In the end, we must see that every child from every race is important and should be encouraged to receive a higher education.

SOUNDINGS