UCSB McNair Scholars Research Journal

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
2012 Volume 2

The UCSB McNair Scholars Research Journal

University of California, Santa Barbara

2012 • Volume 2

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POST-BACCALAUREATE
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UCSB McNair Scholars

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Letter from Executive Vice Chancellor Gene Lucas

It gives me tremendous pleasure to welcome you to Volume II of the UCSB McNair Scholars Research Journal. This journal recognizes the research accomplishments of a select group of eight undergraduate scholars from a wide range of disciplines. These students have successfully completed our McNair Scholars Program. Their contributions to this journal represent the hard work and intellectual creativity of students that we anticipate – indeed have every confidence -- will ultimately be leaders in their respective fields, and faculty mentors who exemplify the dedication of our campus to undergraduate success.

Named after Dr. Ronald E. McNair Jr., physicist and NASA astronaut, the McNair Scholars Program is a federally funded program geared to provide research opportunities for first-generation college, low-income, and underrepresented undergraduates as a means of preparing them for graduate school. Our McNair Scholars Program aligns with our campus goals of improving both the diversity and quality of our students, and preparing them for success beyond their undergraduate experience. By combining undergraduate research with faculty mentoring and academic support services, the McNair Scholars Program provides a path to graduate school for students from families that have not traditionally considered even a college education.

We're very proud of the success of our McNair Scholars Program and this dedicated collection of students that have completed the program and produced scholarship for publication. I congratulate the McNair Scholars, applaud the faculty mentors, and extend my appreciation to the staff of the McNair Scholars Program for their dedication and work in helping these students achieve success.

With warm regards,
Gene Lucas
Executive Vice Chancellor

Letter from Dean Melvin L. Oliver

Welcome to the second issue of the UCSB McNair Scholars Journal. The work of the scholars in this journal represents the fruits of an apprenticeship relationship that they shared with a faculty mentor to better understand and learn to carry out research in their respective fields of specialization. The research they have produced represents the result of applying creative ideas to research questions using systematic and rigorous methods of established research protocols in several areas, ranging from the social sciences to mathematics and engineering. I am certain you will agree with me that this research is both impressive and engaging.

As McNair Scholars these students were encouraged to advance their education in hopes that they will become the next generation of college and university professors. We have seen scholars in previous cohorts go on to prestigious graduate and professional schools and we have no doubt that, as a consequence of their McNair experience, these scholars too will excel in their graduate program. As first generation, and often underrepresented minorities, they are an important resource for higher education as our student population becomes more diverse and our nation's productivity becomes increasingly reliant on the academic, economic and social success of this multiethnic mosaic.

The UCSB McNair Scholars program is uniquely situated in the College of Letters and Sciences, indicating the importance of this effort as part of the College's core belief that diversity and excellence are both necessary to advance knowledge in the 21st century. I salute the Director, Dr. Beth Schneider, the Assistant Director, Monique Limón, Writing Coach Dr. Ellen Broidy, staff, graduate mentors, and the array of faculty mentors who have selflessly given of their time, for creating the kind of supportive and nurturing environment that has made the production of this journal possible. And finally, I want to salute the McNair scholar authors who, I hope, will look fondly upon this publication as one of their first in a long line of research publications in a significant academic career!

Sincerely,

Melvin L. Oliver
SAGE Sara Miller McCune Dean of Social Sciences
Principal Investigator, UCSB McNair Scholars Program

Letter from McNair Program Director, Dr. Beth Schneider

Volume II of the UCSB McNair Scholars Program is now in the hands of our students, alumni, faculty mentors, campus allies, and McNair colleagues in California and around the country. As the Director of the McNair Scholars Program since its inception, it is a pleasure to showcase the work of students, most of who graduated in 2011.

These student scholars and authors spent two years with the UCSB McNair Scholars Program. Expectations we hold for the UCSB McNair scholars are high, and all these students met them, presenting their faculty-mentored scholarship at one McNair Scholars National Research Conference as well as offering two or three poster sessions in various venues. This current group of authors not only presented their work, but they all applied to graduate school in their senior year and seventy-five percent are currently attending graduate school (University of Southern California, Wright Institute, Boston College, UCSB, California State University-Fresno, University of California-Berkeley).

The papers published in Volume II are the final versions of manuscripts our graduates were willing to see through to publication. They went the extra mile, writing and rewriting their research papers in response to a steady stream of comments from their mentors and the journal editors. Often, the final revisions were completed during a first term of graduate study, a sacrifice reflecting a serious labor of love. As undergraduate research papers, we expect that these publications will be the first of many manuscripts published by these eight students during their graduate training and in their first academic positions.

The eight young scholars whose work is showcased in this issue displayed perseverance, patience, and diligence that will serve them exceedingly well in their continued professional training. We know that our current seniors will soon follow in the path of this second published cohort. For all first-generation, low income, and underrepresented undergraduates, the existence of the journal and the labor it represents will hopefully be an inspiration to seek research opportunities, develop successful mentorships, and take seriously a future in which the McNair Scholars Program played and continues to play an important part.

With special thanks to the UCSB McNair Scholars staff, and congratulations to the scholars and in great pride,

Professor Beth E. Schneider
Director, UCSB McNair Scholars Program

Letter from the Editors
Drs. Ellen Broidy and Beth E. Schneider

The McNair Scholars Program at UCSB is pleased to bring you the second volume of the UCSB McNair Scholars Research Journal. A cooperative effort of faculty mentors, McNair staff, and most especially a dedicated cadre of student scholars, the journal represents months of research, writing, editing and reviewing on the part of all the participants.

For our scholars, preparation of their manuscripts for publication in the Journal began as a challenging and ended as a rewarding experience. Novices when they started the process, the scholars embarked on a year-long adventure in what it takes to produce academic work suitable for publication. With good humor and extraordinary patience and fortitude, they experienced the frustration of being asked to revise and revise again and then the feeling of elation that comes with a final acceptance. Through this process, the McNair staff was able to provide scholars with a practical hands-on introduction to the types of writing and revision expected of graduate students and academics.

Submission to the Journal was never a requirement of participation in the UCSB McNair Scholars Program so we were enormously gratified that a number of our students decided to allow their work to be put under the editorial microscope. Previous publications arrangements with faculty mentors meant that some scholars were unable to submit their work while others, having left UCSB to start their graduate programs, were simply not able to take on the additional tasks involved in manuscript revision. The scholars who did contribute worked diligently on their papers, rethinking, rewriting, reorganizing, and in some instances, reconceptualizing core ideas. We applaud them all for their hard work and commitment.

We trust that you will enjoy reading the work of the UCSB McNair Scholars represented in this second volume of the Journal. We look forward to bringing you the voices of new generations of scholars in subsequent volumes and thank you on behalf of the authors, mentors, and editors who made this publication possible.

Best,

Ellen Broidy
Writing Specialist, UCSB McNair Scholars Program
Adjunct Assistant Professor of Women's Studies, UCLA

Beth E. Schneider
Professor, Department of Sociology
Director, UCSB McNair Scholars Program

The Division of Childcare Labor in Gay Male Partnerships

Nathaniel Burke

Mentor: Dr. Beth E. Schneider
Department of Sociology

Abstract

Despite the vast amount of research on the household division of labor in heterosexual cohabitating couples with children and cohabitating lesbian mothers, little is known about how the labor of child-rearing is divided and agreed upon in gay male partnerships. Existing research indicates that in most heterosexual households, the mother provides most domestic childcare, and while research relating to same-sex households largely excludes childcare, occupational demands and practical economic issues are the principal factors in determining who gravitates toward domestic labor. Such findings attribute the emotional labor of childcare to monetary or economic factors, largely ignoring other factors such as home ownership, pre-existing learned childcare or domestic skills, legal guardianship, and biological parentage. This research attempts to determine what factors in addition to the economic and occupational are at play in determining how childcare is managed in gay male households. To ascertain the potential impact of these factors, the study takes a qualitative approach in conducting in-depth interviews with thirteen couples. Case studies have been obtained using initial contacts at local LGBT organizations and a snowball sampling method. The findings increase understanding of key factors in determining roles in childcare among cohabiting gay males. Data show that those fathers who earn less or have a more flexible work schedule perform more household labor, though childcare appears to be shared more than household work. Further, biological connection

does not appear to be an influential factor as it often is with lesbian mothers, though which partner prompted the initial discussion to enter into parenthood may influence the division of childcare labor.

Introduction

Research on families has largely focused on heterosexual populations, and when queer communities are mentioned, the focus is almost entirely on lesbian motherhood to the omission of gay male fatherhood. As legal barriers are removed and social opinion shifts in favor of same-sex marriage and same-sex adoption, gay and lesbian families are likely to increase in number, necessitating additional and more nuanced research. If reported data of 1 to 9 million children being raised by at least one gay or lesbian parent (Stacey and Biblarz 2001) is accurate, then investigating the workings of these families furthers the understanding of family dynamics in a growing demographic. It is understandable that research on childcare has focused on heterosexual and lesbian families with a mother present, as nurturing and care work are feminized. The feminization of care work occurs to the detriment of women who continue to be unequally burdened with this labor, and to fathers who are simultaneously lauded for performing caregiving, while being judged for not performing it as well as a woman conceivably would. Even in those families of single fathers (Risman 1998) we have a sense of those men as "making do" without a woman present to provide childcare. This continues our understanding of childrearing and nurturing as female tasks, an understanding that gay fathers clearly challenge in a way that single heterosexual fathers may not. Gay men who elect to become fathers become part of a new discourse that combines ideas of masculinity and domesticity, two concepts previously understood as diametrically opposed.

Gay male partners face many unique challenges in the process of becoming parents. They are often discriminated against because of their sexual orientation by the laws of the countries from which they may attempt to adopt, by adoption and surrogacy organizations, as well as individuals in both these agencies and foster families. This discrimination can, at any point, cause a delay in or complete halt to the adoption/surrogacy process. One father stated,

> "It [the adoption process] was hell. The whole process took about a year to get through all the parenting classes and agency approval, and then about six months to find children. We went through a few false starts after [their] foster families realized they would have two dadFs. We would just start to get to know them when the agency would pull them out."

Biologically conceiving a child for gay male partners requires both an egg donor and surrogate, and can be an extremely expensive process both financially and emotionally. One father described taking out a second mortgage on his home to fund the surrogacy process, and after having nearly given up after two miscarriages, finally became a father on a third attempt. Because of the costs of surrogacy, many gay fathers opt for adoption, though they are often given "hard-to-place" children, which are largely young boys of color and the developmentally or physically disabled (Lewin, 2009). It is important, then, to understand that becoming a gay father requires both monetary and social capital to navigate these challenges, potentially influencing the racial and/or class demographics of men who have the ability to become fathers in same-sex relationships.

Despite these challenges, the men in this study persevered, and once they become fathers found themselves faced with the new challenge of navigating the division of household and childcare labor. When the child is born or placed with the new fathers, these couples are faced with decisions ranging from who will wake up in the middle of night to feed the newborn to who is driving the teenager to school or piano lessons. This study examines the factors in addition to economic and occupational demands which influence how childcare is divided in gay male households. While the division of these tasks likely necessitates conversation and bargaining, some may occur after a person's initial performance of a task becomes institutionalized, or because they are systematically influenced by outside factors such as earning capacity or biological connection to a child. The study of gay fathers offers insight into the domestic sphere of a segment of the LGBT community, and into a relatively new form of family structure that has been insufficiently examined to date. This research has implications for understanding and challenging the gendered and heteronormative aspects of families that pervade common understandings by illuminating the potential ways in which both household and childrearing labor is shared in these families.

Literature Review

The body of literature on the household division of labor is largely informed by landmark research such as Arlie Hochschild's (1989) *The Second Shift.* In her ethnographic observation of how thirteen dual-career households divide up household labor, Hochschild describes a "stalled revolution" following the women's rights movements in which gender inequality continues to influence an imbalance in the quantity of labor women perform in the home. Hochschild found that women perform one month of twenty-four hour days more housework than their male partners, an imbalance which she attributes to gendered socialization that predisposes women toward domesticity. Later in life these relational imbalances are obscured through "family myths" and an "economy of gratitude." Family myths, stories that the couples tell themselves and each other such as "she is better with the kids," serve to hide those imbalances.

How well family myths and the relationship functions overall is based on the “economy of gratitude,” that is, how much gratitude each partner displays for roles and functions performed by their mate. While Hochschild’s research identifies this imbalance, it does not account for same-sex households in which the archetypes of “breadwinner” and “homemaker/caregiver” are not present. Her work, while unfortunately “normalizing” heterosexual households and “othering” same-sex and transgender households by omission, allows for comparative analysis, and helped to frame more recent research on dual-career and same-sex families.

The research methods and literature on the division of household labor and childcare has evolved in recent decades (Coltrane, 2000) to include daily diary methods and a more thorough analysis of daily tasks. In studies such as these that more carefully analyze household tasks, a chore such as “cooking dinner” involves all of the invisible associated components, such as keeping mental stock of supplies, dietary and financial concerns, food preferences, cooking style, skill level, and time involved. These holistic analyses of household tasks provide not only a view of the behind-the-scenes components of household labor, but more accurately display the high level of skill and effort entailed in completing these tasks. In his analysis of the previous literature on the household division of labor, Coltrane (2006) finds that while men’s household labor has slightly increased and women’s has slightly decreased, women on average still do twice as much household labor as men.

Building upon Hochschild’s study and subsequent literature on the division of household labor, Christopher Carrington (1999) looks exclusively at gay and lesbian families without children, to determine what factors may influence how labor in the home is divided. Carrington’s study consisted of a slightly larger sample size of in-depth interviews (fifty-two versus Hochschild’s fifty), a more ethnically diverse sample (though again biased toward middle-class families) and more in-depth ethnographic observation (one week spent with each family versus Hochschild's one week day and one weekend day).

Literature such as Carrington's challenges the assumed egalitarianism of same-sex couples who are presumed to divide work more equally due to similarly gendered socialization. Carrington's findings show that even in these couples, there is still not an equal division of labor, though overall it tends to be more equal than in heterosexual households. Further, Carrington finds that while the difference occurs because of "practical economic and occupational characteristics," the types of tasks performed by each partner tend to be assumed because of interest or skill. This may highlight Hochschild's "economy of gratitude" in same sex families in that each partner in a same-sex relationship is potentially less likely to be performing tasks that they find distasteful than their heterosexual counterparts.

In the last fifteen years, almost all the research on same-sex families raising children focuses on lesbians. Both Patterson (1995) and Sullivan (2004), looking at lesbian motherhood, found that there was a higher level of egalitarianism in the division of household and childcare labor than in their heterosexual counterparts. It is important to note, however, that the context of the child's birth has an influence on the division of childcare labor. Those families where the child was born or adopted in the course of the lesbian relationship tended to mirror heterosexual nuclear families though with a higher level of egalitarianism in how childcare was divided. This level of involvement in childcare varies dramatically for those families where the child was born out of a previous heterosexual relationship. As Hare and Richards (1993) state, in these families, the birth mother assumes a greater level of parental authority. Within their study none of the children referred to the birth mother's partner as "mother;" rather, the partner assumed a friend/ally role with the child and functioned as a parent in the absence of the birth mother.

The problem with these studies, and the corpus of research on lesbian motherhood, is that it tends to focus upon middle-class, Caucasian families who share an ideological commitment to egalitarian ideals formed out of second-wave feminism. Furthermore, the recent research in which lesbian families are more often formed via donor insemination hints at an important factor to consider for the gay male partnerships in that it implies an equal decision by the couple to enter parenthood together, rather than raising a child from a previous heterosexual relationship. The existing body of literature on lesbian motherhood tends to be incomplete in two ways: its attention to issues of race and ethnicity is limited, as are the complex ways of organizing household labor in stepfamilies.

Mignon Moore (2008) addresses this gap in her study of African-American lesbian stepfamilies. As one might expect, the biological parent in these relationships most often performs the greater amount of household work, including organizing and managing household expenses. Moore describes an interesting difference in the management of finances between lesbian and heterosexual households. She states that heterosexual couples view money management as a responsibility to be delegated by the higher-powered partner, whereas the lesbian families in her study viewed control over financial management as a sign of power and control. Moore (2008) states, "The position is seen as important because it directly involves the needs and considerations of the children and biological mothers have a greater motivation to make sure the children are properly cared for." In this way, the "mother" in these families is indicative of a hierarchical role that is responsible for most household decisions. Moore also indicates a unique trend in lesbian households: partners often over-report the amount of housework done by the more domestically-active "mother" which may be indicative of an inherent respect for domestic work not present in heterosexual unions. Further, in the relationships where a second-parent legal adoption had been completed, the non-biological mother gained a greater degree of decision-making power, as well as taking on a greater percentage of the childcare tasks. This indicates that legal guardianship or legal recognition of parental status is an influential factor in determining the division of labor, useful to a study of gay fatherhood.

Moore's work is one of the few studies that look specifically at African-American families. She is able to provide, then, a counterpoint to existing research and indicate how both race and class are influential factors in determining division of labor. Her research also points to the possible influence on the childcare and household division of labor of the timing of parenthood (pre or post-relationship formation).

Whether a child exists prior to the relationship and how it impacts the division of childcare labor is further touched upon by Goldberg and Perry-Jenkins (2007). Their research examines whether biology influences which mother performs the majority of housework and childcare labor, which they track before, during and after childbirth. Goldberg and Perry-Jenkins find that in families where the biological mother expects to perform more work postnatally, she most often does, though this is also impacted by economic factors. Drawing upon both gender theory and neoclassical economic theory to explain the factors that impact the division of labor in lesbian households, Goldberg and Perry-Jenkins argue that while biological mothers assumed the greater quantity of childcare, the overall division of housework remains predominantly egalitarian. The implication is that a biological connection seems to affect childcare, whereas economic/structural factors are what determine the division of non-childcare housework. One final interesting finding of Goldberg and Perry-Jenkins is that "Non-biological mothers who became legal parents experienced a greater sense of legitimacy in their parental role." Though their study, again, looks predominantly at middle-class, college educated Caucasian lesbians, it informs the larger dialogue as to the timeliness of parenthood, as well as the continued influence of legal recognition of parenthood.

While the literature on same-sex parents has advanced recently to include racial diversity in its sample, gay fathers are completely omitted within the discourse on the division of household labor. Studies such as *Gay Fatherhood* by Ellen Lewin (2009) provide ethnographic narratives of these families, though they do not address directly or comparatively their inner workings and the factors that influence power dynamics and stratification. Lewin, though, does a valuable service in her description of the methods by which these couples become parents, and their unique challenges not faced by lesbian mothers. She notes the normative assumption that men are disengaged from child rearing in contrast to lesbian motherhood, where motherhood is presumed to be an inherently female desire. This assumption, of course, is fallacious in light of Lewin's and other researchers' studies, as well as the 15-20% of census-reported gay-male families who report children living with them (UCLA. Williams Institute, 2007). Lewin, then, attempts to show the processes these families navigate in forming families and how they "do" parenthood. Because gay fathers cannot biologically conceive as easily or as inexpensively as lesbian mothers, many become parents through fostering, adoption, and shared parenting arrangements with a single woman or lesbian couple. Lewin's data show that due to the extensive costs of surrogacy, a high percentage of families choose adoption, while those that do select surrogacy are predominantly affluent white males.

Biblarz and Stacey (2010), in analyzing the body of existing literature on parenting, attempt to isolate within those studies how the gender of parents influence their findings, and how gender influences parenting and its effects. They find that the studies which most accurately measure the impact of gender upon parenting are those that study same-sex families, though again this research mainly focuses upon lesbian mothers. In the review of recent literature on gay fathers, Biblarz and Stacey found that gay fathers tend to parent more equally than heterosexual parents, although somewhat less so than lesbian mothers. Biblarz and Stacey did note, however, that some data suggest that more gay fathers are at-home parents than lesbian mothers. However, because the majority of literature focuses upon lesbian mothers who have been acculturated in second-wave feminist egalitarianism, it forces the question of whether this is the case for gay fathers, potentially explaining why data show gay fathers dividing parenting less equally than lesbian mothers.

From the contributions of previous research we can see the need to apply these concepts and findings to those families headed by gay fathers to determine whether the same factors are at play in how they divide up the labor of childcare. In studying gay fathers we would expect to discover similar findings to those on lesbian mothers, that economic factors such as income levels and flexible hours would impact who performs more housework and childcare, and that a biological connection would predispose that father toward more childcare labor. This, however, is complicated by two factors. First, gay fathers are more likely to adopt rather than to become parents through surrogacy due to financial barriers and second, we cannot assume that the biological connection of fatherhood carries an identical meaning to biological motherhood, and would therefore have the same influence upon performed quantities of childcare.

Methods

This study attempts to determine the factors that influence how gay male partners divide the labor of childcare in dual-career households. Many considerations factored into determining an appropriate population from which to draw a sample, including: whether one or both parents must be a biological parent, whether the second parent must have legally adopted the child, whether the child pre-existed the relationship, and the age of the child(ren), amongst others. Each of these variables may influence how labor is divided. In an attempt to address as many domestic situations as possible, the population identified for this study is any cohabiting gay male partnership that has a child or children under eighteen living with them at least part-time. The families who contributed to this study achieved parenthood through previous heterosexual relationships, surrogacy, private adoption and foster adoption (fost-adopt). In line with existing literature that addresses the prejudicial barriers and homophobia gay fathers face when attempting to adopt from other countries, none of the families in my study achieved parenthood through international adoption.

Subjects were located by contacting lesbian, gay, bisexual and transgender (LGBT) organizations, gay father support and social groups, churches, feminist studies and sociology departments at college campuses, as well as by posting notices in online newsletters and forums. While many large organizations such as PFLAG (Parents, Families, & Friends of Lesbians and Gays), COLAGE (Children of Lesbians and Gays Everywhere), the Human Rights Campaign, and Equality California were contacted, most respondents came from smaller social networking groups, and additional participants were located using a snowball sampling method. Participants were all offered anonymity and advised that if mentioned during the research, pseudonyms would be used.

Finding a large and diverse sample was not easy. Despite contacting over two hundred and fifty individuals, groups, organizations and companies, the sample for this study consists of thirteen couples. Further, despite contacting LGBT organizations that provide services to specific racial and ethnic groups in an attempt to obtain a racially diverse sample, most of the families that elected to participate are composed largely of Caucasian, college-educated, middle-class individuals. Further work, then, needs to be done to address more thoroughly the influences of race and ethnicity, socioeconomic status, and education upon the division of labor in gay male households.

Research subjects were asked to participate in an in-depth interview independent of their partners, and asked not to discuss the content of the interview until both partners had been interviewed. As research participants were located across the United States, interviews were conducted via telephone, with each interview averaging forty-five minutes to one hour in length. Two families were found locally in Santa Barbara; one family was interviewed in their home and the other couple was interviewed in their respective workplaces. Interview questions addressed such topics as the participant's background, family life, career, relationship with their spouse, the process by which they became a parent, financial management, non-childcare housework, and childcare-specific labor.

Each interview was recorded, transcribed, and coded and analyzed using grounded theory methods. Memos and data displays were created to identify themes within the narratives of the fathers who participated in this study. One important limitation to note is that with interviews, it is difficult to quantify accurately the amount of time each partner spends on specific household tasks. Future research should employ a mixed-methods approach involving in-depth interviews and ethnography, as well as daily journals kept by each partner to more accurately track the time spent on household labor.

While telephone interviews could be cited as potentially less rapport-building than in-person interviews, I found that the fathers in my study seemed very eager to share their stories and their lives. Many cited a lack of visibility around families headed by gay fathers and thus were excited to participate, and expressed gratitude that research was being done on this valuable and oft-ignored family structure that not only challenges existing gender ideologies, but repositions "father" at the heart of nurturing childcare.

The sample consisted of predominantly Caucasian men, with a median age of 42.5 years. Most families were located in southern and central California in largely affluent areas, which was reflected in the median income of $75,500 per respondent, $170, 000 per household. The income of these couples is worth noting in that it is higher than those reported in previous studies of lesbian and heterosexual families.

Table 1: *Sample Demographics, 13 couples, 22 interviews*

	Min	**Max**	**Median**
Respondent's Age	28	55	42.5
Child's Age	1 month	15 years	7 years
Children per Household	1	3	2
Respondent Income	$20,000	$300,000	$75,500
Household Income	$79,000	$400,000	$170,000
Relationship Status			
Married		7	
Registered Domestic Partners		5	
Neither		1	
Race			
African-American		1	
Asian/Pacific-Islander		1	
Caucasian		17	
Hispanic		4	
Other		1	
State of Residence			
California		10	
Maryland		1	
New York		1	
Oregon		1	
Gender of Child			
Female		8	
Male		15	

Findings

The ways in which the gay male partners in this study discuss fatherhood and the division of labor show how the distribution of tasks is accomplished in their families and offers insight into how the men themselves understand these concepts. Since this study did not rely on observation of the families, it is important to focus on their choice of language as representative of how they present the division of labor in their families. Each father was interviewed independently of his partner and asked the same series of questions. While each initially reported a completely equal division of labor, this vision tended to dissipate as specific tasks were discussed. Rafael Alvarez, an Outside Sales Executive stated, “You know … as far as the household chores go, I don’t think we have them specified to a certain person. It’s just … we both do it... on an as needed basis or as we have time.”

Agreement about the Division of Labor

When discussing who performed each task, there was a very high degree of agreement between the partners. Out of twenty-two independent interviews, no respondent directly contradicted his partner’s statements or assessments of how labor is divided. In describing the division of household tasks not related to childcare, the men in my study did not discuss the decision making process behind the division of these tasks, nor did they describe at length how they were performed, or their satisfaction with those tasks. Skill and interest, while discussed in general household tasks, was not a factor ever mentioned in discussions of parenting and childcare. This is an important distinction from the heterosexual men in Hochschild’s (1989) study. Among the gay men in my study, Hochschild’s concept of “family myths,” such as being “better with the kids” were not used to obscure imbalances in performing childcare labor.

Another factor absent from these fathers’ narratives, highlighted in previous research on same-sex couples, is the minimization of non-gender-normative behavior. Carrington's (1999) gay male participants, though not fathers, tended to emphasize the career and underplay the domestic activities of their partner as a way of protecting their masculinity. This is not true of the fathers in this study, who did not make any statements protecting their spouse's masculinity when discussing parental tasks. This may indicate that these gay fathers are less concerned about defending their masculinity in connection to fatherhood, or that they have conceptualized nurturing childcare as masculine, potentially reflecting societal and cultural changes. The fathers who performed less of the household work and childcare-specific labor tended to elaborate more upon how their partners behaved as fathers and less upon their performance of non-childcare tasks or upon their partner's career. Dante Harris, a controller for an investment company stated, "in the grander scheme we're looking to add more kids, and I think Joel would be an ideal stay-at-home dad." The fathers in this study have redefined fatherhood to include nurturing childcare, legitimating male domesticity.

Dividing Non-Childcare Tasks

In keeping with the trends shown in previous research on same-sex couples, the majority of non-childcare domestic tasks are often performed by the partner who earns less and has a more flexible work schedule. Joel, an IT professional for a human rights non-profit described his partner, Dante as having "longer hours," and indeed Dante reported working an average of a 10-12 hour workday, and so Joel takes a greater share of household work. Though again, the way in which most household tasks are divided is often attributed to interest or skill. Rafael Alvarez's partner, David Knapp, is a former professional chef, and so assumes a larger share of the responsibility for preparing meals. Rafael stated, "Um... you know, I think David cooks a little bit more because he's a better cook."

In all but three couples, the higher earning partner tended to hold responsibility for paying bills and managing finances. While it is theoretically possible that the higher earner has a “head for numbers,” as many subjects reported, it is potentially more likely that this is an instance of Hochschild’s “family myths” remaining alive and well, obscuring the power imbalance inherent in earning capacity. When asked about how decisions were made regarding expenses, most stated that decisions were made mutually, with the exception being those families where the children were from a pre-existing heterosexual relationship or in those where the home is not jointly owned. In these instances, the biological parent or the homeowner has more decision-making power for expenses relating to the child or the home respectively. It is also worth noting that tasks such as repairs and upkeep may also be influenced by ownership of the home. Since many states do not have community property laws for same-sex couples, legal ownership of the home may influence who performs these tasks, overriding skill or interest.

Egalitarianism in Parenting Tasks

While housework is most frequently reported as being performed by one of the partners, childcare specific tasks are more frequently reported as being performed by both, indicating a higher level of egalitarianism in parenting tasks than in other domestic labor. The data show that of all tasks related to childcare, the ones that are reported as being managed by both are those that are less time-sensitive, that is, reading, playing, teaching, and arranging social activities. This is in stark contrast to those childcare tasks that are more time-sensitive, such as feeding, transporting to and from school, and taking to medical appointments, which are most often performed by the individual who earns less or has a more flexible work schedule. Aidan Roberts, a pharmacy buyer, has a more flexible work schedule than his husband, Miles, and so arranges most play dates for their sons. He states “[It’s] mostly me. Miles works every other weekend, so I tend to round people up and drop them off." This appears to be in line with research on heterosexual families that shows fathers (typically the higher earner) performing less repetitive, more evident and higher valued tasks such as changing the oil in the car or conducting home repairs, whereas mothers (or in same-sex families, the lower-earner) are tasked with ongoing, invisible tasks such as laundry and cleaning.

Role of Hired Assistance

The majority of the families participating in this study have hired at least part-time assistance in the form of housekeepers and nannies. With a median household income of $170,000, this is unsurprising and may speak to the higher potential earning capacity of a two-male household. The hired assistance was most often housecleaners and nannies, with the higher earning couples hiring part or full-time nannies that provided daycare for children less than five years of age while the fathers were both at work. However, this did not seem to disrupt the narrative of fatherhood these men described. When asked about childcare specific tasks such as reading, teaching their children, bathing them and feeding them dinner, no families reported that tasks of this nature were performed exclusively by a nanny, indicating that these men attempt to be present and involved in the raising of their children even when hiring assistance.

When asked to describe a typical day from the moment they wake up until they go to sleep at night, the narratives of these fathers centered around their children. Even those fathers who performed less of the household and childcare labor described how their career and personal activities such as going to the gym or social activities fit in with the demands of their children. These men, despite hired assistants who provide some amount of care to their children, still held themselves accountable for nurturing childcare. Tyler Sorensen, an auto dealership owner, and his partner Jason Twine, a software designer, both described really wanting to have children. Even though they have a nanny who, combined with being Jason's personal assistant, provides housekeeping and childcare assistance, Tyler quit his job when the children were born in order to stay home with them full-time. Once they hired the nanny to provide childcare and other assistance, these men still stayed actively engaged in the care of their children. These fathers invited me to conduct the interviews in their home, so I had the opportunity to observe them interact with their children, help them with homework and talk about visiting their teacher to discuss assignments.

Influence of the Process of Becoming Parents

Legal recognition of parent's relationship. Legal recognition of the relationship between the gay male partners is one factor that may have an influence upon the division of labor. Comparing the married fathers to the registered domestic partners (RDPs), the married couples often have a greater disparity of task management between partners than the RDPs, but also have more tasks they report as sharing equally. Both married fathers and RDPs reported sharing in the acquisition of items for the home such as furniture and décor, reading to their children, teaching them, and helping with homework. Literature on cohabiting heterosexual couples (Davis, Greenstein, and Gerteisen Marks 2007) shows a higher level of egalitarianism than married couples, and it appears that this may also be true for same-sex couples.

Biological ties. Previous research has highlighted the importance of biological connection to children as it relates to the division of labor. Two of the families in this study were step-families, in that one of the male partners had become a father through a previous heterosexual relationship. Rafael and David began dating when David's two girls were 2 and 6 years old. Jacob began dating Anthony, who has full custody of his two sons from his previous marriage when the boys were 5 and 9. The biological fathers in these relationships tended to perform a greater quantity of childcare, though flexibility of schedule influenced one couple where the non-biological father tended to manage transportation to and from school and doctors appointments for the children. It is worth noting that in both of these couples, a second-parent adoption had not been completed; in previous research on lesbian and heterosexual step-families (Moore 2008), second-parent adoption tended to somewhat mitigate the imbalance in the division of labor.

Surrogacy. One might expect that within the families who achieved parenthood through surrogacy, the biological father would retain more of the responsibility for childcare. The research on lesbian motherhood (Sullivan 2004) shows that the biological mothers who become parents via assisted reproductive technology (ART) tend to perform slightly more childcare than the non-biological lesbian mother. This, however, is not the case for the gay male families who participated in this study. Three families in this study achieved parenthood through surrogacy. In one instance, both fathers contributed biological material during insemination, but deliberately elected to have no knowledge of who is the biological father. In another couple, each partner fertilized an egg from the same donor, producing half-sibling twins, again, not knowing the identity of the biological father of the resulting children. There is no notable difference between these two families and the third, where the biological father is known, or with the families who achieved parenthood through adoption. In this admittedly small sample, biological parentage does not appear to be an influential factor in the division of labor, except in gay stepfamilies.

The decision to enter parenthood. In several families, a narrative emerged that highlights the importance of the decision to enter parenthood and who initiates that discussion. One subject described being "in tears" after watching a television program on gay fathers, spurring him to initiate the discussion of becoming a parent with his partner. Another father described how he had always wanted to be a father and that it “took about a year for [his partner] to get on board.” Mark Hobbs, a professional in the healthcare industry, reported that “Michael wanted children much more than I did, it wasn’t so much a need for me.” In these instances and others, the father who initiated the discussion, expressed a greater need, or was described as being more interested in parenthood than his partner, tended to perform more of the childcare labor. This finding has ramifications for investigating the decision-making process between gay men when becoming parents, as well as what motivates a man to become a parent in absence of a female partner. Exploring the motivation to enter parenthood and how those agreements are reached with a partner allows us to better understand the nuances of power negotiations between parents. One example points to a possible trade-off: when the partner who least desires children agrees to become a parent, the other partner may do more childcare and/or housework, a “gift” to the other of becoming a parent.

Discussion

Previous research on heterosexual households has largely attributed the types of tasks women perform to socialization. Women in these studies perform more repetitive, less visible tasks. However, the data in this study of same-sex gay partners show that the fathers who perform such work are those who earn less and have a more flexible schedule. It would be, therefore, worthwhile investigating the potential error in previous research of conflating income and schedule flexibility with gendered socialization in the studies on heterosexual families. Additionally, it would be valuable to look at those families that experience a reversal of income levels or schedule flexibility to determine if the division of labor is subsequently affected.

Of particular contemporary interest is the data in this study which shows that the same-sex married fathers show less egalitarian tendencies than the registered domestic partners.

Research in the future might investigate the meanings couples apply to marriage versus domestic partnership or cohabitation and how these meanings influence the division of labor. Marriage may influence notions of self; in this study, the married couples reported more shared childcare tasks than registered domestic partners, indicating that they view themselves as a collaborative single unit, which may have consequences for the division of labor. Intriguing questions emerge related to whether and how legal recognition of the relationship might alter a couple's perceptions about who they are in the relationship and their relationships with children, influence how they divide up household labor, and how the availability of legal recognition might alter the future of same-sex relationships.

Routes to entering parenthood seem to matter. Those families who became parents via surrogacy, yet elected not to know the identity of the biological father, complicate the existing narrative of the link between biology and the division of childcare labor. In a larger and more diverse sample, the continued connection between the two can be more firmly established. Also, important to making sense of the degree of egalitarianism is the decision to enter parenthood; how that decision is negotiated between the partners may influence the division of childcare. Work on gay fathers indicates a continued need to systematically understand what motivates a person to become a parent, how that process is negotiated in the couple, and the subsequent consequences for the division of labor.

A finding that the decision to enter parenthood influences who performs more childcare also has interesting implications for heterosexual parents. If the decision to enter parenthood is influenced more by one partner, one would expect that person to perform more of the childcare labor. However, does gendered socialization overpower this? In heterosexual families where the father is more predisposed toward parenthood than the mother, does he perform more childcare labor in line with the findings of this study, or does gendered socialization of his wife overpower that decision and predispose her toward those tasks, and is this influenced by economic factors? Whatever the answer, these questions point to the need for a better understanding of why men want children. Is it for the same reasons as women, or are there differences?

From this sample we see that there is no uniform answer as to what determines who performs more of the childcare labor in gay male partnerships. Salary and flexibility in schedule influences who performs more housework, and what types of childcare-related tasks are performed, but not necessarily the type or extent of that childcare. Both legal recognition of the partnership and the decision to enter parenthood are themes that appear as potential influences upon performance of childcare tasks. To make more sense of the interactional context surrounding these matters however requires a larger sample and more in-depth interviews touching on the meaning applied to marriage and the process of deciding to become a parent. Finally, while biological connection to the child appears to be influential in stepfamilies, from the small sample of gay male couples who became fathers through surrogacy in this study, it does not appear to influence which of the fathers performs more childcare.

Further research might investigate the questions and trends apparent in this sample, as well as meanings attached to fatherhood and marriage. For example, how is entering the traditionally dyadic, hetero-only space of domestic family life with children affecting the relationships and gendered roles of gay men? Does this change our understanding of caretaking and of fatherhood? In many ways these families are indicative of a post-gender society as both lesbian and gay male families begin to meld the current understandings of motherhood and fatherhood, diminishing the significance of parental gender to the types and quantity of childcare and housework performed. As the men in this study have created and come to understand fatherhood as including caregiving and child rearing, we must investigate further the influence of race and class upon this understanding.

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Decreasing Antisocial Behavior on the Playground by Increasing Playground Supervision and Promoting Problem Solving Skills

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Abstract

Previous research on programs aimed at preventing antisocial behaviors among youth has focused primarily on efforts within the classroom. This research study focuses on decreasing antisocial behaviors on the playground by increasing the number of adult supervisors, promoting problem solving methods, and engaging students in a variety of activities. The population sample consisted of first through third grade students at an elementary school on the central coast of California. The sample size is 518 students (control n=262, experimental n=256). The adult supervisors, referred to as "playground specialists," were undergraduate students from the University of California, Santa Barbara. Playground specialists attended several training sessions to learn about the elementary school rules, problem solving methods, the dynamics that occur during recess, children's social, emotional, and cognitive skills, and possible games and activities that would likely engage the students at recess. Specialists learned about the IDEAL problem solving method used to mediate conflict on the playground as well as facilitating playground activities. The effectiveness of this intervention was measured by analysis of discipline referrals from the current academic year compared to the previous academic year. The preliminary results indicate a significant decrease in the number of discipline referrals for

months August 2010 through January 2011. Continued effectiveness of the project throughout the school year provides important insights regarding the reduction of antisocial behaviors during recess.

Introduction

Antisocial behaviors (e.g., bullying, hitting, name calling) on the playground are an alarming problem for children. Such experiences can have an effect on their physical, emotional, and cognitive development and interfere with learning during the school day. Recess is an opportune time for children to make their own decisions, create their own rules, and participate in activities they enjoy without constant interference from adults. The environmental climate during recess has an important bearing on children's learning and development. Antisocial behavior can greatly interfere with child-centered play and with the child's ability to comfortably enjoy active play with their peers because that type of behavior calls for adult intervention and can lead to depression, anxiety, cognitive problems, friendship/social problems, and oppositional behavior for victims of bullying (Jimerson, Swearer, & Espelage, 2010).

Playground Bullying

Bullying, victimization, and antisocial behaviors in school have been topics of concern for many decades (Jimerson, Swearer, & Espelage, 2010). Within the past several years, however, schools have witnessed an increase in bullying on the playground. According to Pepler et al, a child is bullied on the playground every 7 minutes ("Facts about Bullying," 2010). To put this into context, that's 204 students a day. That means that 204 children will be anxious, upset, and troubled about going to school or even worse, miss a day of school to prevent being bullied. In addition, according to the Bureau of Justice School Bullying Statistics and Cyber Bullying Statistics, children in elementary school get in fights twice as often as children in higher grades (middle and high school). However, children in lower grades have low rates of serious violent crime in comparison to children in higher grades (Bullying Statistics, 2009). According to the 2001-2002 California Student Survey, through the course of one school year about one-fourth of students across all grades reported being harassed or bullied at school because of their race, ethnicity, gender, religion, sexual orientation, or disability ("Facts about Bullying," 2010). Therefore, it is clear that bullying on the playground has become a pressing topic which many researchers have begun investigating.

As part of this ongoing investigation, educators have debated the necessity of recess. In 1998, Sharon Cromwell reported that many educators, stressing the importance of classroom learning, have argued that children would suffer no ill effects from decreasing recess time by a couple of minutes. In addition, other motivators for decreasing or eliminating recess are the concern for children’s safety and the school’s liability and the belief that recess might be disruptive to the student’s work patterns (Pellegrini, 1995). These arguments have become extremely pervasive with the result that an increasing number of schools have decreased or eliminated recess. According to the American Association for the Child’s Right to Play, 40% of elementary schools in the United States are reducing, eliminating, or considering eliminating recess (National Association of Early Childhood Specialists in State Departments of Education, 2001).

Regardless of the increasing trend towards eliminating recess, there are many educators, administrators, school principals, and professional organizations supporting and demonstrating the critical importance of recess. In a position statement, the National Association of Early Childhood Specialists in State Departments of Education (2001) argues that “recess is an essential component of education and that preschool and elementary children must have the opportunity to participate in regular periods of active, free play with peers." To support their position they state that recess contributes significantly to a child's physical, social, emotional, and intellectual development. Furthermore, recess is one of the few times during the day that children can utilize all these developmental domains in a context viewed as meaningful to the children. Nevertheless, the benefits of recess go beyond developmental domains. According to the National Association for the Education of Young Children, the benefits of recess include the development of perceptual abilities, a carefree environment for the children, a decline in tension and stress, and improvement of children's attentiveness while, simultaneously, decreasing their restlessness (National Association of Early Childhood Specialists in State Departments of Education, 2001).

Playground Supervision

Although recess can provide a number of benefits, it also comes with some challenges that must be addressed. Among the main problems surrounding recess are bullying, victimization, and other antisocial behaviors, often exacerbated by the paucity of playground supervisors. In the book *Bullying Behavior: Current issues, Research, and Interventions,* Geffer et al. (2001) discuss anti-bullying interventions, bullying prevention strategies, and the history of bullying. According to the authors, bullying and victimization incidents occur in hidden places or blind corners such as behind playground equipment where teachers cannot easily observe the children. Consequently, by increasing the number of qualified playground supervisors the number of bullying occurrences might be significantly altered. The possibility of more eyes on the playground reduces the number of hiding places for the children and subsequently reduces the number of opportunities for a child to bully or be bullied. The authors define "qualified playground supervisors" as individuals that can recognize the occurrence of bullying and respond to it in an immediate and appropriate manner.

In order to support their theory about the benefits of increasing the number of playground supervisors, Geffer et al. (2001) compared the recess climate of two distinct schools. Budget cuts at the first school resulted in combining the recesses of kindergarten through second grade with the third through fifth grade. As a result, combining of younger and older children led to insufficient age-appropriate activities for the children in higher grades. The younger children were able to play on the swing and sand boxes, but the older children had only the option of playing on the large soccer field which consequently led to boredom. The school also had to decrease the number of playground supervisors to only one for each recess. New additions to the school made matters worse by creating a number of small spaces between or behind walls or doorways where the children could hide. Thus, lack of sufficient supervision and age-appropriate activities for the older children resulted in high rates of verbal and physical bullying during recess.

The second school, in comparison, had a small playground, plenty of age appropriate activities for the children, and a large number of well-trained supervisors. The school was able to provide greater supervision because they asked the physical education teachers to co-supervise during the lunch time recess. In addition to the supervisors, the small perimeter of the playground allowed the supervisors to keep the children in view. Thus, the second school had much lower rates of bullying and intimidation on the playground.

Lewis, Colvin, and Sugai (2000) conducted an experiment in which they examined the effectiveness of implementing an intervention in an elementary school that served grades kindergarten through fifth. The strategy involved a school-wide approach of pre-correcting misbehaviors and increasing active supervision in the course of three recess periods with one week intervals. Pre-correction is a technique teachers can use before recess to remind students about proper social skills (e.g. keeping your hands and feet to yourself, using appropriate language and problem solving skills when conflicts arise, and using playground equipment properly). As for the active supervision, the playground aides were mandated to attend a 15-minute training session that discussed ways to manage their time effectively while watching over the children. During the session, the supervisors were reminded to move around constantly, scan all areas of the playground, increase their interaction with students, and decrease their communication time with the teachers.

The data for Lewis et al.'s (2000) research project was collected through observations of the students' and playground monitors' (supervisors) behaviors. The persons observing the students' behaviors were graduate students randomly assigned to look at structured (e.g. soccer, four square) and unstructured (e.g. swinging, monkey bars, playing on the jungle gym) activity. For the playground monitors (supervisors), the observers were to look for active (e.g. moving 15 feet from previous location, communicating with children) and non-active (e.g., blowing the whistle other than to indicate the end of recess to students more than 10 feet away, talking to other adults on the playground) behaviors.

Results of the Lewis et al.'s (2000) study showed positive outcomes in terms of reducing negative behavior and for increasing the quality of supervision by playground monitors. Fortunately, the researchers were able to increase the amount of active supervision. The researchers believe the staff's awareness of the school-wide system and their participation in the playground intervention led to observed low-levels of non-active supervision and high levels of active supervision. The playground monitors also reported an increase in the quality of their active supervision. Overall, the study revealed good results given the teachers and supervisors were only presented with short training sessions.

The "Power of Play" Research Project

"Power of Play" began in the summer of 2010 when, principal investigator and Professor of Education at the University of California, Santa Barbara (UCSB), Dr. Shane Jimerson became aware that most of the bullying at Isla Vista (IV) elementary was occurring during recess. Since there are about 4-5 yard supervisors employed by the school district, Dr. Jimerson believed that one of the reasons for the large frequency of bullying incidents on the playground was due to a lack of sufficient active supervision and engaging activities. Therefore, the "Power of Play" program aims to decrease bullying incidents and antisocial behaviors on the playground by increasing the number of qualified playground supervisors. It is hypothesized that by increasing the number of playground supervisors who can engage the students in activities, assist in mediating conflict, and conduct active supervision, the number of office discipline referrals during recess would decrease, relative to the office discipline referrals during the preceding academic year.

The 5-10 playground supervisors volunteering during each recess are undergraduate students that have been recruited from the University of California, Santa Barbara. The specific duties of the playground specialists included: promoting problem solving strategies to resolve conflicts among students, engaging students in constructive activities (such as soccer, tennis, board games, basketball, scooters, golf, marbles, building blocks), and attending weekly meetings to discuss strategies, challenges, and solutions to promote prosocial play during recess with first to third grade students. Although the IV elementary playground area had two handball walls, one jungle gym, one backstop for kickball or baseball, three basketball courts, one tetherball set, two picnic tables, and a large grass field, they were not being utilized by the children. Thus by drawing children's attention to available resources and by providing structure, assistance, and ideas for fun and active playground games, the playground specialists can decrease the likelihood that students will engage in troublesome behaviors due to inactivity or boredom.

In addition, teaching the elementary school students problem solving skills that they can apply when conflicts arise will be especially helpful for those involved in conflicts most frequently. They would get the most exposure to the problem solving method which would prove to be a great experience considering they are among those who would benefit the most.

Method

The "Power of Play" project specifies the following participants, process of recruitment, and data gathering procedures.

Participants

Students. The students were first, second, and third graders from a school of approximately 446 students, located on the central coast of California (See Table 1 for student distribution). A self-report student questionnaire revealed that the majority of anti-social behaviors at the school were occurring during recess. For the younger children, grades 1st and 2nd, the test was administered by reading the questions out loud and letting the children answer them individually. The ages of the children in the current study vary, but remain roughly between 6 and 9. The total sample size is 518 students (control n=262, experimental n=256[1]).

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[1] The participants in the control condition represent the baseline group which consists of the total number of first, second, and third grade students enrolled during the 2009-2010 school year. The participants in the experimental condition represent the intervention group which consists of the total number of first, second, and third grade students enrolled during the 2010-2011 school year.

	Percentage for 2010-2011 School Year
English Language Learners	55%
Students who qualify for free or reduced lunch	72%
Latino students	67%
Anglo students	22%

Table 1. Characteristics of the 446 students at Isla Vista Elementary for the 2010-2011 school year. Includes grades K-6th.

Playground Specialists. The playground specialists were undergraduate students from the University of California, Santa Barbara (UCSB). Their ages range from 19 to 24. The level of experience and interaction with young children varied from no experience to 2 years of experience as a kindergarten teacher. Volunteers were chosen based on their GPA, year in college, and career goals. Neither language proficiency in Spanish nor experience with children was part of the selection criteria.

The process of recruitment of playground specialists included fifteen minute oral presentations in applied psychology classes at UCSB conducted by Dr. Jimerson and a graduate student; asking professors of applied psychology classes within the Education Department at UCSB to share the information with students in their seminars; and posting flyers in first year residential halls. During the beginning of the study, students from applied psychology courses were targeted because of the correlation between their interests and knowledge and the aims of the study. However, later participants were recruited because of the possibility of a long-term commitment. Participation in the research study provides students with an alternative option for satisfying the requirements of an applied psychology class. Students not enrolled in the applied psychology class had the option of enrolling in research assistant units and acquiring UCSB course credit for the time they volunteer.

The students recruited as playground specialists assisted the research team by facilitating playground activities (such as kickball, soccer, four square, basketball, and tennis), resolving conflicts during recess (for example, name-calling, students pushing and shoving other students, and arguments amongst students), attending weekly research meetings where current issues and concerns can be discussed, and reviewing journal articles within the fields of education and psychology to increase their knowledge of the effects of bullying, interventions and prevention programs, and psychological disorders in young children, just to name a few. For each journal article they reviewed, they were required to write a two page summary explaining the relevance and importance of the article. Any time spent on the research project was applied towards their total hours required for the research assistant units or for the applied psychology class.

After the selection process, the undergraduates were required to participate in weekly summer training sessions that took place at the University of California, Santa Barbara before they began volunteering at the elementary school. During the training sessions the playground specialists learned about the IDEAL Problem Solving method (**I**dentify, **D**efine, **E**xplore, **A**ction, and **L**earn), how to communicate effectively with young children, and what actions to take when a child is breaking the school rules. The students were also introduced to the same video and materials that were shown to yard duty employees who were hired within the school, so that the playground specialists would understand how their training was similar to and different from those of the yard duty employees. In addition to the training sessions, they were also required to complete a LiveScan, which is essentially a background check, and have a tuberculosis test.

The IDEAL Problem Solving method is a five step scientifically-based method (See Figure 1). Dr. Shane Jimerson developed the method by combining ideas from the IV Elementary School's 'Work it Out' poster and the "Five-Step Coaching Model from Second Step: Student Success through Prevention" program. The 'Work it Out' poster was an initiative taken by the school to teach students how to solve conflicts independently. The 'Work it Out' method is comprised of seven steps that give a detailed description of how to confront disagreements. "The Second Step: Student Success through Prevention" is a research-based worldwide violence prevention program and under the auspices of a nonprofit organization entitled Committee for Children ("Second step: improve," 2010). The program's objective is to promote social competence and reduce children's social-emotional problems through increase awareness of bullying and providing classroom resources for educators.

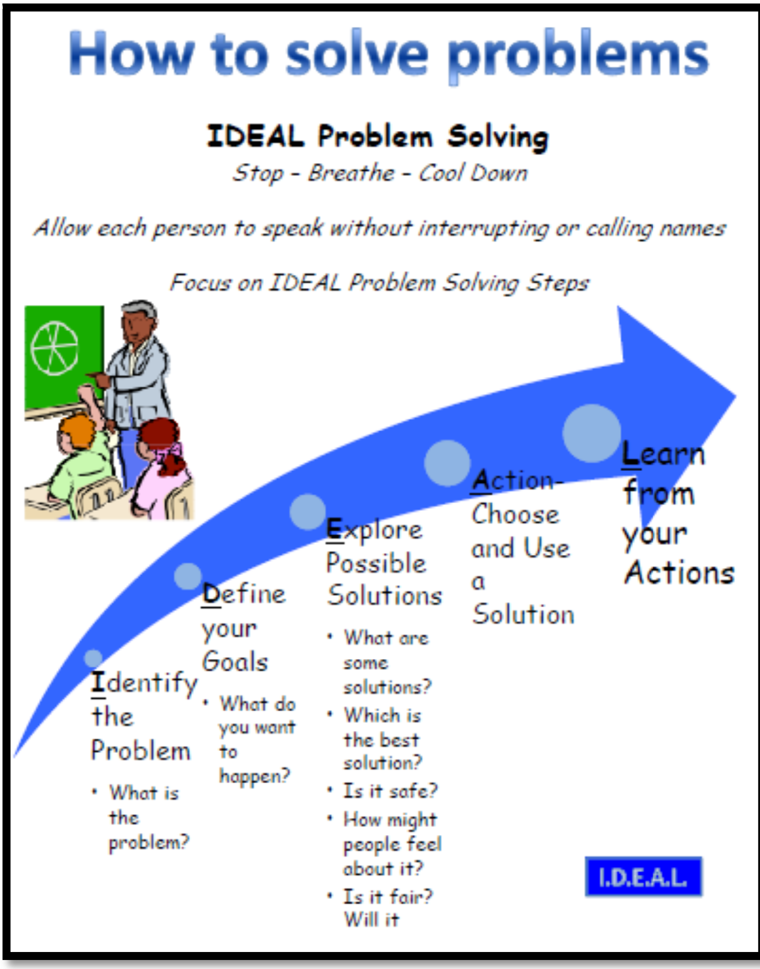

Figure 1. IDEAL Problem Solving Poster.

Elementary school students involved in conflict carry out the steps in IDEAL with the assistance of a playground specialist. The first step in the method is to identify the problem. Thus, in order to facilitate the process the playground specialist can ask "What's the problem?" or "What's going on?" Then, each child will take turns describing their perspectives. After the problem has been identified, the students must define their goals in terms of their ideal end results. To facilitate the second step, a playground specialist can ask, “What do you want to happen?” Next, the students have an opportunity to explore the different possible solutions when the playground specialist asks them “What are some solutions?” or “What is the best solution?” Once they have developed a number of solutions, the students need to come to a consensus and carry out their solution. The final step asks the students to reflect upon and determine whether the solution was successful or not. If the solution wasn’t successful at mediating the conflict, then the students need to start at the beginning and repeat the process.

After UCSB undergraduates attended all of the required training sessions, they began to attend the elementary school during the morning and lunch recess. There are a total of three recesses, including the lunch recess. The morning recess takes place from 10:25-10:45, the lunch recess is from 12:05-12:30, and the afternoon recess is from 1:30-1:40.The individual UCSB student’s availability for each quarter determined which days and times they were assigned to volunteer at the school. During the summer training sessions the undergraduates had learned which behaviors called for a discipline referral. In the event that they observe a student committing one of these infractions, they are to inform the yard supervisor because they do not have the authority to handout school discipline referrals since they are not employees of the school.

Some changes have been made to the training process. The five training sessions are no longer required due to the time consuming labor needed to train the large number of students who volunteered throughout the school year. Instead, each incoming student was required to meet with the undergraduate research assistant, the co-leader of the project, in order to learn about the sign-in process, where the equipment room and equipment is located, and get an in-depth explanation of their responsibilities.

The LiveScan was eliminated because it was not necessary due to the fact that the volunteers were not interacting with the students in an enclosed environment, such as a classroom.

Data Collection

School discipline referrals are a reliable source of information to describe problematic student behaviors. According to Tidwell et al. (2003), discipline referrals describe the complex social nature of various discipline problems involving administrators, teachers, and students. This is backed up by research studies that have found data from discipline referrals to be a reliable and efficient approach for documenting a change in children’s behavior (Polirstok & Gottlieb, 2006). Therefore, data acquired from this source are beneficial when implementing, assessing, planning, and developing programs. Given the nature of the research study, school discipline referrals are an effective strategy for evaluating the efficacy of this approach.

The discipline referrals for the 2009-2010 school year were systematically documented in three different categories: (1) type of infraction, (2) administrative decision or consequence, (3) month (See Table 2). Although there are other infractions on the school discipline referrals we only recoded the referrals that had infractions related to recess and those that occurred during recess (See Figure 2). In addition, the document clearly stated the number of referrals that were given for a specific misconduct, such as threatening a student, fighting, or playing an unauthorized game, and the total number of referrals for that month. The grade of the student was also documented. However, it did not include information about specific target students, but rather served as a representation of each grade collectively. Once the number of referrals for the 2009-2010 school year was documented, they were compared to the 2010-2011 school year. An analytical comparison of the discipline referrals provides the empirical support for examining the program’s effectiveness to decrease the frequency of antisocial behaviors.

April 2011			
Type of Infraction	Frequency	**Consequence**	Frequency
Uncooperative - Not following directions	IIII	Conference with teacher	I
Disrespectful to a student	I	Conference with principal	IIIII
Disrespectful to an adult		Loss of playground privilege	IIII
Offensive Language/Gestures	I	Writing assignment	
Unsafe Action	IIII	Detention	
Rough Play	I	Suspension to: Other room	
Fighting		Suspension to: Office	
Threatening a student		Suspension to: Home	
Damage to school or private property	III	Other: None indicated	
Stealing		Other:	
Out of bounds at recess	III	Other:	
Illegal or dangerous items at school		Other:	
Unauthorized game	I	Other:	
		TOTAL Referrals for the month:	

Table 2. Discipline Referral Data Entry Form. There are more infractions than consequences because some students had multiple infractions, but there were also some months where students had more consequences than infractions.

SCHOOL	DATE	GOLETA UNION SCHOOL DISTRICT
NAME	ROOM	**DISCIPLINE REPORT TO PARENTS**

YOUR CHILD HAS BEEN REFERRED TO THE PRINCIPAL FOR THE FOLLOWING REASON(S):

INFRACTIONS:

- ■ Uncooperative – Not following directions
- ☐ Wasting class time
- ☐ Disrupting classroom
- ■ Disrespectful to a student
- ■ Disrespectful to an adult
- ■ Offensive language/gestures
- ■ Unsafe action
- ■ Rough play
- ■ Fighting
- ■ Threatening a student
- ■ Damage to school or private property
- ☐ Off-campus without permission
- ☐ Riding bike/skates/skateboard in halls/patio
- ■ Stealing
- ■ Out of bounds at recess
- ☐ Improper lunchroom behavior
- ■ Illegal or dangerous items at school
- ■ Unauthorized game
- ☐ Failure to return signed discipline report
- ☐ ____________

DSC 7300 3/92 White – School Yellow – Parent(s) Pink – Teacher

CONSEQUENCES:

- ☐ Conference with teacher ____________
- ☐ Conference with principal ____________
- ☐ Loss of playground privilege ____________
- ☐ Writing assignment ____________
- ☐ Detention ____________
- ☐ Suspension to ☐ Other room ☐ Office ☐ Home
- ☐ ____________

Referred by (signature and title):

____

COMMENTS:

____

____________, PRINCIPAL

PLEASE SIGN AND RETURN TOMORROW.➤ I have discussed this with my child. ____________, PARENT

Figure 2. This is a copy of the school discipline referrals given to Isla Vista Elementary students. The infractions highlighted are the ones being recorded for data analysis.

Results and Discussion

The results from the data analysis comparing months August through January for the 2009-2010 and 2010-2011 school years, as shown in Figure 3, below, indicated a significant decrease in the number of discipline referrals that took place during recess. After conducting an independent samples t-test, it was found that increasing the number of adults on the playground during the morning and lunch recesses had a significant effect on the number of discipline referrals, t (518) =62.71, $p < .0001$. There was a 95% confidence interval (10.66-11.34). A comparison of the baseline

(*M*=18, *SD*=2) and intervention (*M*=7, *SD*=2) data indicates a 62% decrease in the number of referrals. Therefore, the current findings support the hypotheses that an increase in adult playground supervisors would decrease office discipline referrals.

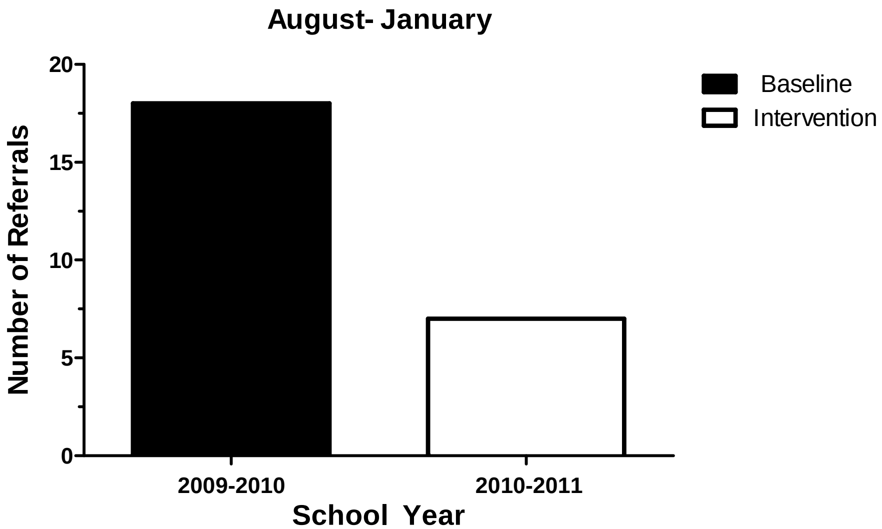

Figure 3. Number of office referrals during recess for August through January of baseline and intervention school years.

Preliminary findings from the study suggest that increasing the number of trained adults on the playground can be a new strategy for combating bullying during recess. Prior research does not indicate similar strategies being implemented throughout recess. Considering the importance of recess and the number of potential opportunities for bullying and problematical behaviors, these findings are important to future efforts to deal with this problem.

The current study illustrates how an addition of adults who can engage with and teach problem solving methods to children can decrease the number of school discipline referrals handed out during recess. In addition to the decrease in discipline referrals, the school's climate and environment can also be affected positively and improved over time. This can lead to ripple effects and improve the children's academic, developmental, and social experience.

Four conditions may have affected the research project and its outcomes. The first was language. According to the 2009-2010 Snapshot of Isla Vista School found on the school's website (2010), 55% of the 446 students were still in the process of learning English. In addition, there were a total of 25 different languages spoken by students. Therefore, language may have been a barrier when communicating with the children. Despite that, all first through third grade children have sufficient English language skills to engage in the IDEAL problem solving method.

The types of relationships the playground specialists will form with the children may influence results. Each individual has his or her own personality and that could affect the type of relationship. There is a fine line between how friendly or how strict you can be with the children as this may impact how they respond to you.

Third, playground specialists did not participate during all three recesses. Although there were a total of three recesses we only asked the playground specialists to attend the morning and lunch recess because those were the longest. The afternoon recess is only ten minutes long and we felt that the children wouldn't benefit as much in comparison to the morning recess which is twice as long. Additionally, it was decided to restrict the recess to only the morning and lunch recess because of their close proximity in time. Since the morning and lunch recess were about an hour apart the playground specialists were able to do homework at the school library during the intermission and attend both recesses without having to leave IV elementary. Nevertheless, not being present during all three recesses allowed room for antisocial behaviors, bullying incidents, and school discipline referrals to occur.

Lastly, the amount of training the playground specialists received is an important factor affecting the results. Being able to communicate effectively with children and respond appropriately to their needs is critical for building their trust and carrying out the IDEAL problem solving method. In order to address varying levels of training, mandatory attendance at the weekly research meetings may be required in the future to improve and enhance effective communication with elementary school children.

Implications and Future Research

The research study contributes to the body of knowledge on intervention strategies for antisocial behaviors on the playground by introducing new and innovative approaches for combating bullying, victimization, and antisocial behaviors. Careful review of the literature did not yield duplicate or similarly focused research studies. Therefore, the creation of new effective intervention strategy contributes to the ongoing body of scholarship by providing researchers with ideas for future programs and also motivating researchers to duplicate this study, adding different variations to the methodology. In addition, it contributes to literature in the field of school psychology by offering a model for future intervention strategies and, most importantly, by providing evidence to support critically needed modifications to the training and qualifications of playground supervisors.

The framework of the study can be applied to older populations, such as middle and high school, to determine its applicability to different grade levels. However, the problem solving method will need to be altered to match the students' cognitive levels. In addition, there can be many variations to the volunteer population. For instance, the volunteers can be retired teachers who will have had plenty of experience with a particular population or they can be current graduate students in the field of education. Additionally, physical education teachers employed by the school can serve as especially appropriate playground supervisors considering they know the children and have an extensive knowledge of creative and fun activities the children will enjoy. Lastly, researchers hope to add a teacher questionnaire to enhance the number of measurements. The questionnaire will ask the first through third grade teachers about changes, if any, to the student's behaviors and classroom climate.

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Selective Electrocatalytic Surfaces for Increased Photoelectrochemical Efficiency

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Abstract

For the production of renewable energy, an integrated system for the conversion of biomethane to gasoline and hydrogen has been proposed. The catalytic process for converting methane (CH_4) and bromine (Br_2) to gasoline and hydrogen bromide (HBr) combined with a process to regenerate the Br_2 using a solar photoelectrochemical (PEC) process can significantly increase the efficiency and lower the cost of producing renewable liquid transportation fuels and maximize the amount of stored energy extracted from solar energy. To minimize the capital cost, a particulate-based slurry PEC reactor is suggested which would use individual PEC particles; the disadvantage of the slurry reactor is that Br_2 may be reduced in place of H^+ thus lowering PEC system efficiency. To minimize the back-reaction and provide a method for Br_2 extraction, polyethylene glycol (PEG) polymers Mw ~1000 g/mol have been used to bind and remove the Br_2 in solution. To further reduce the back-reaction the cathode was coated with several different materials in an attempt to find a material that is permeable to H^+ and H_2 but not Br_2. Materials tested include Cr_2O_3, SiO_2, Al_2O_3, TiO_2, and Nafion 117.

Introduction

Water electrolysis has been utilized in many energy-related applications such as fuel cells and solar cell systems. The electrolysis of hydrobromic acid (HBr) is a closely related process and has advantages over the electrolysis of H_2O. First, the electrolysis of HBr results in the production of two fundamentally valuable products, molecular hydrogen (H_2) and molecular bromine (Br_2), compared with the electrolysis of water in which H_2 is the only product of significant value. Second the standard electrode potential required to split HBr is 1.09V compared to 1.23V for H_2O electrolysis. The existence of a lower potential requirement allows a larger selection of semiconductor materials to be used.

Artificial systems for the conversion of sunlight into chemicals using photoelectrochemical (PEC) processes have been contemplated for decades due to the fundamentally appealing property that the conversion of light to electronic excitation (as in a photovoltaic) is coupled directly to the production of a chemical which stores the energy. This overcomes energy storage, one of the major limitations of photovoltaic (PV) solar cells systems. Secondly, because a PEC process does not necessarily require electrical conductivity over large length scales, the requirements of the materials may be considerably less stringent than in PV devices. In spite of these fundamental advantages, no system has overcome technical challenges required to create a system, which is demonstrated to be a technoeconomic cost effective means of producing fuels or chemicals from sunlight.

The vast majority of research has been devoted to water splitting and most systems proposed utilizing one or more semiconductor planar photoelectrodes to absorb solar photons and convert the light to electron/hole pairs, which can be separated by internal fields within the semiconductor and conducted to physical electrode surfaces to produce products. In the photoelectrode based systems it is usually assumed that electrodes must be in contact with separate compartments connected through a semi-permeable membrane to allow immediate separation of the products, and prevent the electrode back reactions. Unfortunately, such designs require expensive structural elements that in essence have all the cost of a photovoltaic device of the same current density plus the additional cost of the electrolyte system and membrane separators. Since commercially available photovoltaics are not themselves cost effective, there is little chance a photoelectrode based solar-to-chemical conversion system will be either.

An intrinsic feature of the photoelectrochemical process is the potential to make use of short carrier path lengths from the site of creation of electron/hole pairs to the site of utilization. Whereas photovoltaic and photoelectrode based PEC systems convert the solar incident flux into a two dimensional current which moves through electrically conductive structural elements to wires or electrode sites, in principle, the electron and hole may be utilized locally to create chemical products without the need for long range electrical connectivity. If the absorbing PEC material is dispersed in a reactant containing slurry of PEC particles the process is transformed into a three-dimensional system whereby only interparticle conductivity is necessary.

The simplest and least expensive PEC system imaginable for the production of chemicals is a single continuous sun exposed tank reactor (a hole in the ground) with photoelectrocatalyst particles suspended in a common reactant medium. This extremely simple reactor design has the potential for significant capital cost savings and is the only system design shown to have the potential to produce products cost effectively.

Such single electrolyte slurry reactors have been criticized due to concerns about the back-reaction of the anode/cathode products as reactants on the cathode/anode sites respectively. This paper attempts to address these criticisms and explore the question: what is the relative importance of the back reactions in general and how it can be economically eliminated. To address this problem, the following questions were asked: (a) Does the back-reaction significantly impact system efficiency? (b) What can be done to eliminate the back-reaction without significantly impairing the forward reaction? (c) What materials are stable in an acidic HBr/Br_2 environment? (d) How would this system be modeled mathematically?

Theoretical Background

Electrolysis of water (H_2O) is the dissociation of water molecules into hydrogen and oxygen gas. Similarly, the electrolysis of hydrobromic acid (HBr) is the dissociation of HBr molecules into hydrogen and bromine. The process begins when HBr is added to H_2O and the acid dissociates into cations and anions. The H^+ cations, are attracted to the cathodic electrode surface because of the excess negative charge on the cathode; once they reach the surface they form diatomic hydrogen according to Equation 1:

<u>Cathodic</u>: $2H^+\ (aq) + 2e^- \rightarrow H_2\ (g)$
E^o (25°C) = 0.00V vs. SHE (1)

Occurring at the same rate, to preserve charge neutrality, the Br^- ions move from bulk toward the positive anodic electrode surface where they give up an electron and undergo electro-oxidation, as shown by Equation 2:

<u>Anodic</u>: 2Br- $(aq) \rightarrow Br_2\ (l) + 2e^-$
E^o (25°C) = -1.09V vs. SHE (2)

To calculate the standard cell voltage required to split HBr simply add the cathodic and anodic reaction voltages and you obtain the overall reaction

Overall reaction: $2HBr\ (aq) \rightarrow H_2\ (g) + Br_2\ (l)$
E^o (25ºC) = -1.09V vs. SHE (3)

Equation 3 demonstrates that -1.09V is required to split HBr at equilibrium. The back-reaction, described by Equation 4, occurs at the cathode and happens spontaneously.

Back reaction: Br2 (l) + 2H+ + 2e− → 2HBr(aq)

Eº (25ºC) =+1.09V vs. SHE (4)

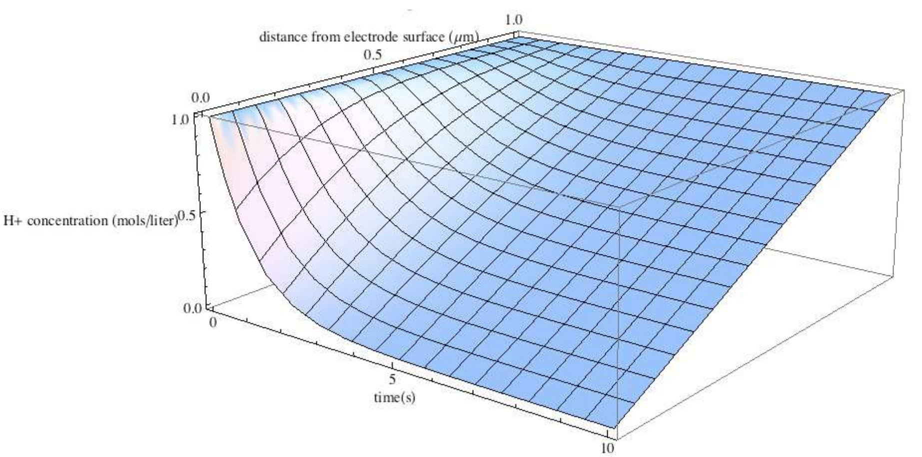
Background and Model

The reaction on the cathode can be modeled as a four-step process. First H^+ ions diffuse from bulk, through the double layer, to the cathode surface. Next, the H^+ ions are chemically adsorbed onto the electrode surface by an electron transfer from the cathode to an H^+ ion. In the next stage, the surface reaction, two absorbed ions in close proximity react to form H_2, which is no longer chemisorbed to the surface. The H_2 is however still physically adsorbed to the surface. This is the reason for the formation of hydrogen gas bubbles at the electrode surface.

Fick's second law, for non-steady state diffusion (Equation 5), describes the mass flux of H^+ ions to the electrode surface:

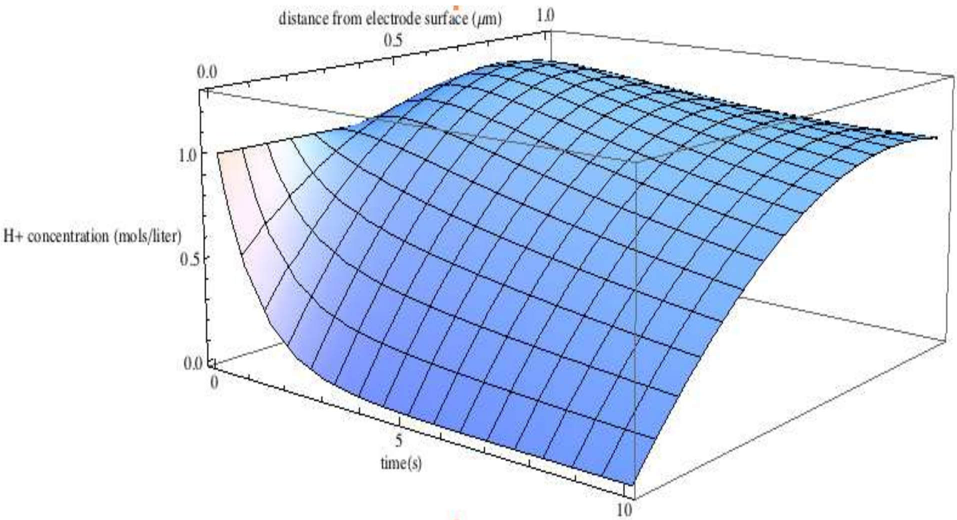
$$\frac{\partial c_{H^+}}{\partial t} = D\frac{\partial^2 c_{H^+}}{\partial x^2} \qquad (5)$$

A theoretical model, Figure 1, of this phenomenon was created using Mathematica to show how the concentration profile behaves over the first few seconds, as the double layer is set-up. The model was developed using the following assumptions: the initial concentration was the same as the bulk concentration and was approximately uniform everywhere; the concentration at edge of the double layer was equal to the bulk concentration; and that the concentration at the electrode surface for all time is equal to an exponential decay function $e^{(-)(constant)(time)}$.



<u>Figure 1</u>: Theoretical non-steady state diffusion model

Figure 1 only applies if the electrode surface is clean; however in order to eliminate the back-reaction, the electrode surface was coated with a H+ selectively permeable membrane. To model this situation the boundary conditions were changed so that the diffusion coefficient, for the distance from the electrode surface to the interface between the membrane and the solution, was changed to a larger value. The result is shown in Figure 2.



<u>Figure 2</u>: Theoretical non-steady state diffusion model with membrane

To model the system's current behavior there are several options including Equation 6, which is the Cottrell equation:

$$j = \frac{nFC_H (D_H)^{1/2}}{(\pi)^{1/2} t} \quad (6)$$

Using this equation, a plot of the current density, Figure 3, can be created by dividing the equation by the electrode surface area and using the H+ concentration at the electrode surface, which was obtained previously.

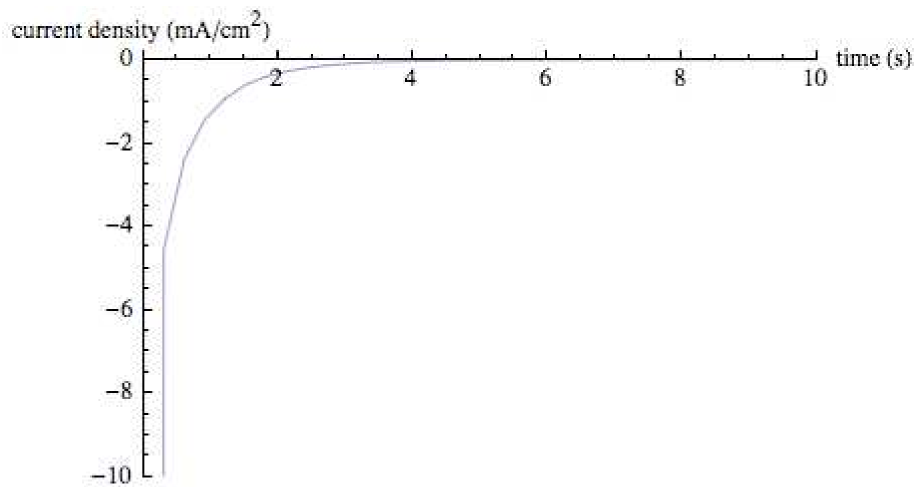
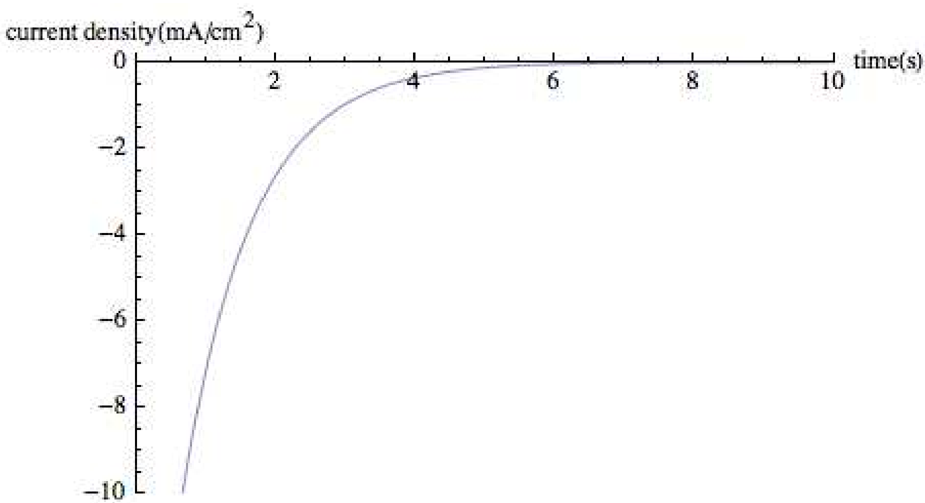


Figure 3: A theoretical plot of the current density vs. time using the Cottrell equation

Current density can also be modeled using the following modified version of the Buter-Volmer equation for the diffusion-limited case

$$j = \frac{n * F * D_H * C_H}{\delta * A} \qquad (7)$$

Figure 4 was obtained using the equation 7 and the surface concentration previously calculated.



<u>Figure 4</u>: A theoretical plot of the current density vs. time using the diffusion limited Butler-Volmer equation

Experimental

Materials

The electrolyte, a 0.1M HBr solution, was prepared by a diluting 48% wt/wt Alfa Aesar hydrobromic acid solution with ultrapure water (18 MΩ, Millipore). Several different types of electrodes were tested including carbon rod, glassy carbon disk, platinum wire and disk, and platinum thin film electrodes which consisted of a quartz slide with a 50 nm layer of titanium deposited onto the surface followed by a 150 nm layer of platinum as seen in Figure 5.

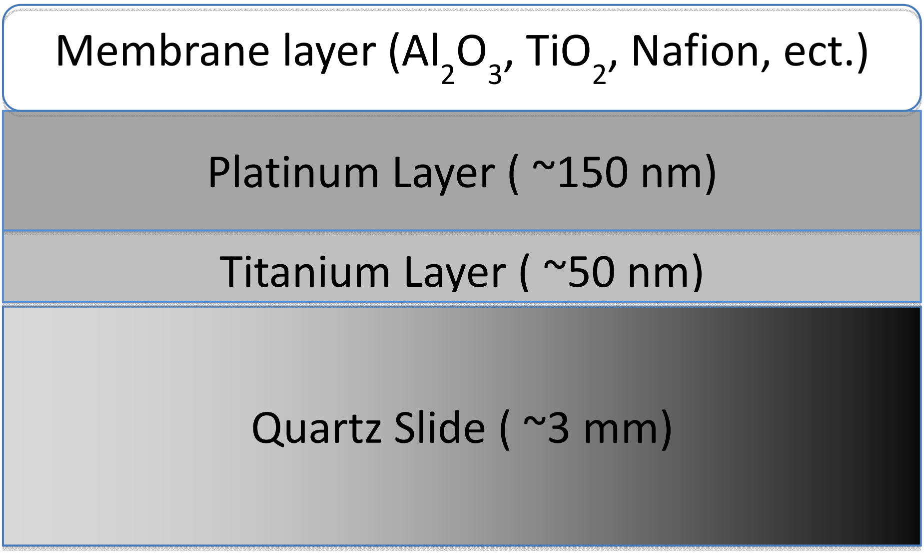
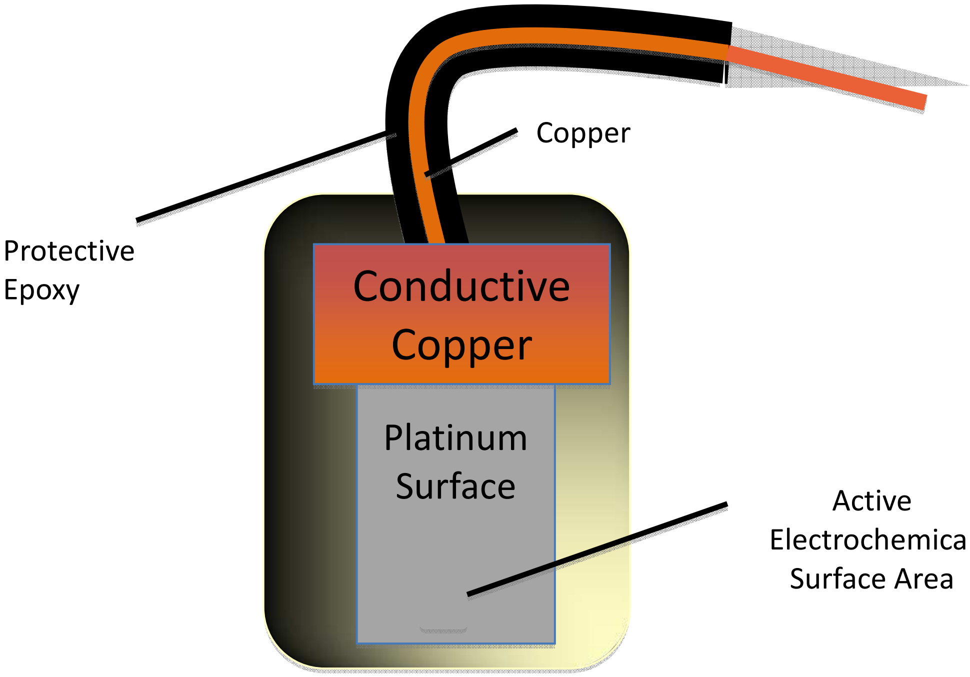


Figure 5: Thin film electrode platinum consisting of a quartz slide with a 50 nm layer of titanium deposited onto the surface followed by a 150 nm layer of platinum and in some cases an additional membrane on top of the platinum.

Electrode preparation

Each different type of electrode required a different preparation method and the preparation method for each type of electrode was dependent on the type of film/membrane deposition being attempted. After films were deposited onto the disc electrodes they were immediately ready for testing; however, after the films were deposited onto the thin film electrodes it was necessary to use a copper wire and copper tape to provide an electrical contact for the surface being tested. Once the electrical contact was in place it was necessary to completely encase the electrode in epoxy to prevent exposure of the copper, which would result in corrosion and affect the results of each experiment this is depicted in Figure 6.



<u>Figure 6</u>: Thin film electrode platinum consisting of a quartz slide with a 50 nm layer of titanium deposited onto the surface followed by a 150 nm layer of platinum and in some cases an additional membrane on top of the platinum.

Cr_2O_3 film

The Cr_2O_3 film was deposited onto a platinum disk electrode electrochemically by filling a 100ml three-necked flask with a solution of K_2CrO_4 running a cyclic voltamagram to reduce the Cr_2O_3 onto the surface of the platinum disk electrode.

SiO_2 film

The SiO_2 film was deposited onto a platinum disk electrode by a dip coating method where TEOS solution containing Si was combined with ethanol and water solution. The platinum disk electrode was then placed vertically into this solution for several hours while the solution was stirred. After this, the electrode was placed in an oven at 80C for 1 hour to allow the water to be removed.

Al_2O_3 film

The Al_2O_3 film was deposited onto the thin film electrode, shown in Figure 5, which consisted of a quartz slide with 50 nm of titanium, and 150 nm of platinum deposited onto the surface. To create the Al_2O_3 film, 10 nm of aluminum metal was deposited onto the platinum surface then the substrate was heated on a hot plate for 30 minutes in open air to allow the aluminum to oxidize and form Al_2O_3.

TiO_2 film

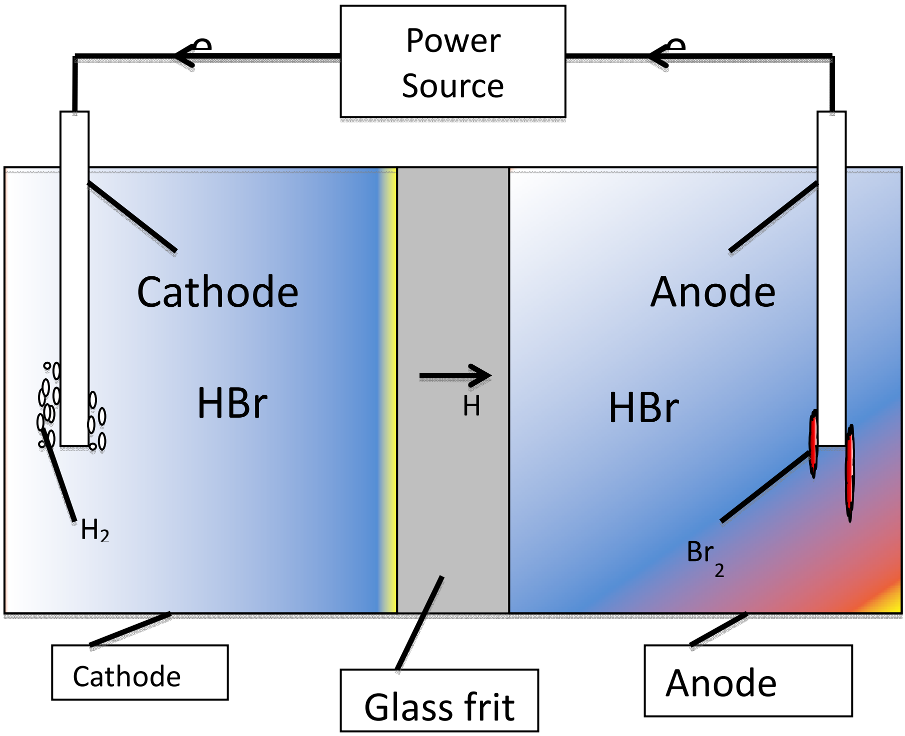
The TiO_2 film was deposited onto the thin film electrode, shown in Figure 5, which consisted of a quartz slide with 50 nm of titanium, and 150 nm of platinum deposited onto the surface. To create the TiO_2 film, 20 nm of titanium metal was deposited onto the platinum surface then the substrate was heated in an oven at 700˚C for 12 hours allow the titanium to oxidize and form TiO_2.

Nafion membrane

The Nafion membrane was originally deposited by a dip-coating method where the electrode, disc or substrate was dipped into a 5-wt% solution of Nafion 117 in isopropanol and then allowed to dry at room temperature and pressure. This procedure was not effective for creating a uniform Nafion membrane to halt the back-reaction so a different method was used. The successful method was a hot press method where the Pt substrates, which consisted of a quartz slide, with 50 nm of titanium, deposited onto it followed by a layer 150 nm of platinum, were put into a hydraulic press with a layer of 212 Nafion over most of their surface. The press was operated at 130˚C, which is the glass transition temperature of Nafion, and pressure of 300 psi.

Electrochemical experiments

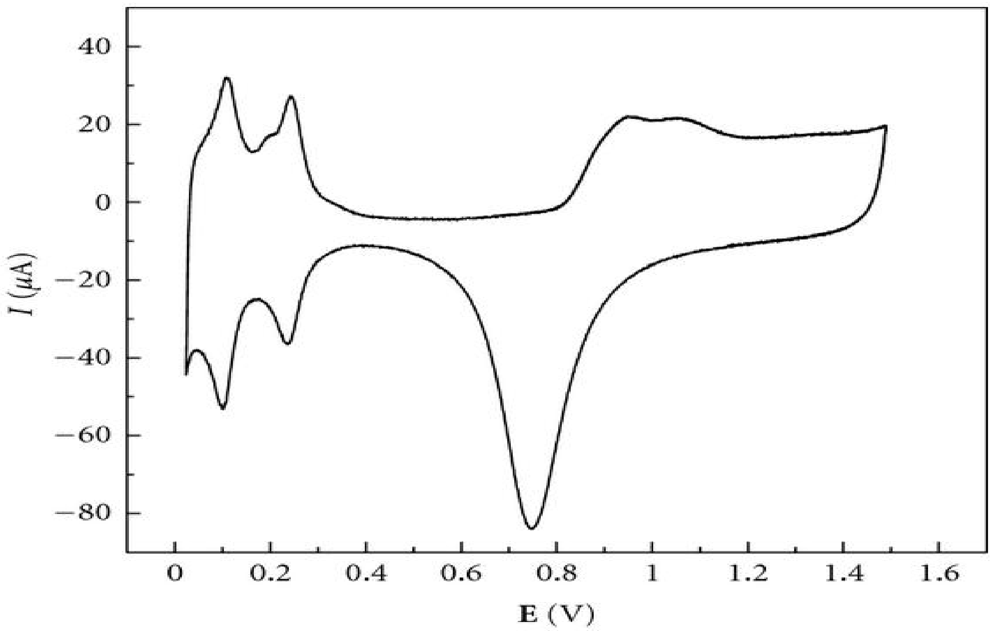
The cell that was used was a two-compartment glass cell with a saturated calomel reference electrode (SCE) and a platinum mesh counter electrode (Figure 7). The electrochemical behavior of the working electrode was measured using a Bio-logic potentiostat with the ECI-Lab program.



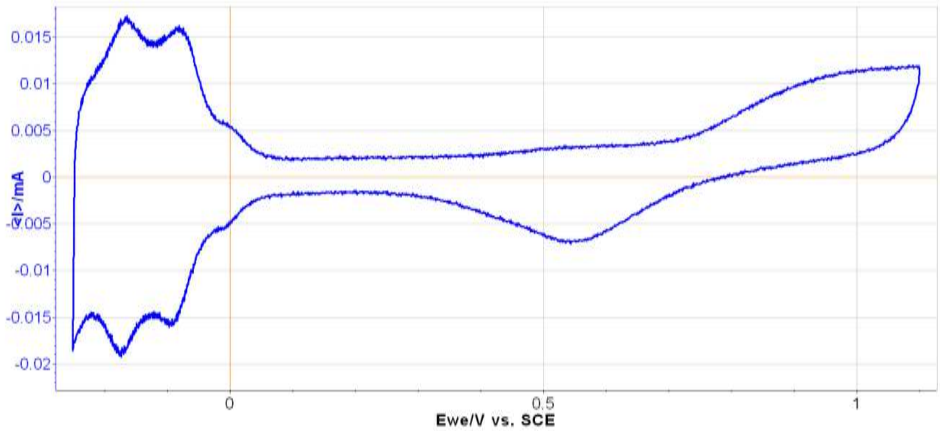
<u>Figure 7:</u> Diagram of electrochemical cell used for splitting HBr

Results and Discussion

First the quartz/titanium/platinum substrate was tested in H_2SO_4 to understand and confirm that it would behave analogously to a 'standard' platinum voltamagram show in Figure 8a. The voltamagram from the platinum coated substrate shown in Figure 8b displays many of the same peaks, which are characteristic of a pure platinum voltamagram. This confirms that the platinum substrate has nearly identical features as the 'standard' platinum curve shown in Figure 8a.

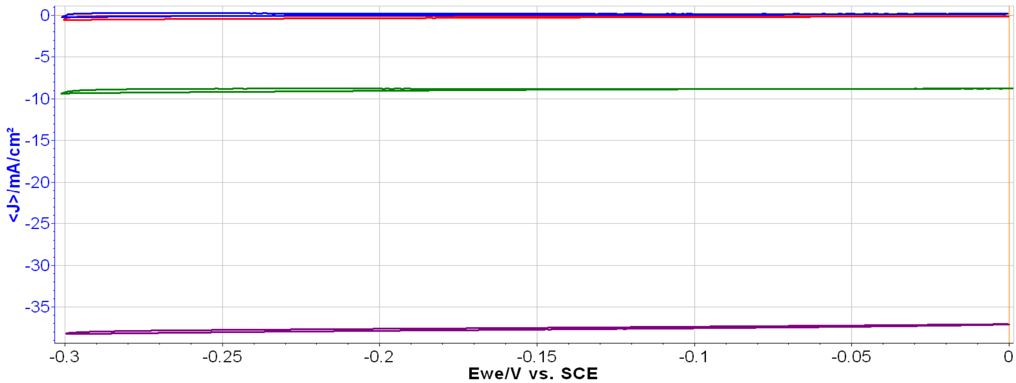


<u>Figure 8a</u>: 'Standard' Platinum cyclic voltamagram.



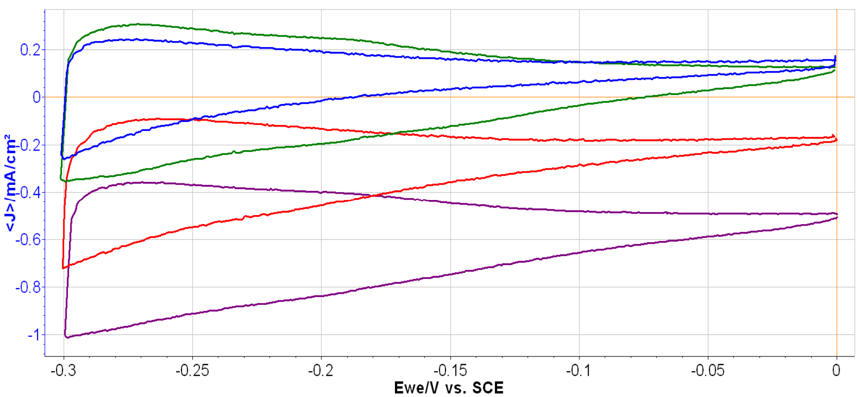
<u>Figure 8b</u>: Cyclic voltamagram of quartz/titanium/platinum substrate in H_2SO_4. Scan window -0.25V to 1.1V, scan rate 200 mV/s.

Figure 9 represents, graphically, why the back-reaction is a concern for the system we are dealing with. The reason is that the current in the region from 0 to -0.3 volts increases significantly when the concentration of Br_2 is above 0.001 molar. This is a problem because achieving a Br_2 concentration lower than that has not been demonstrated for the proposed system.



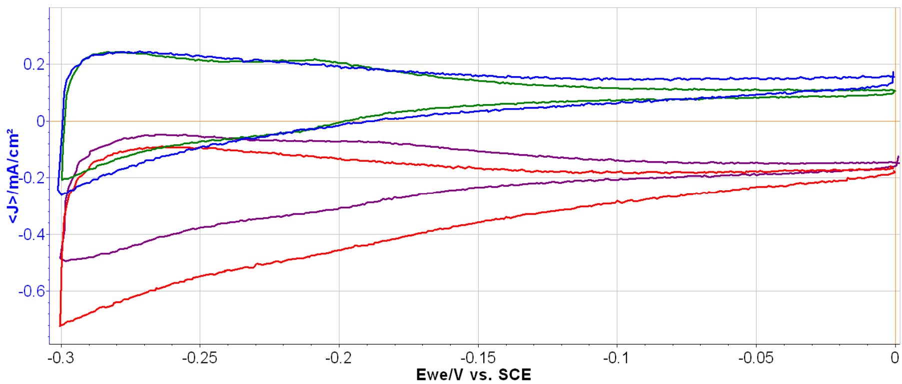
<u>Figure 9</u>: Four separate cyclic voltamagrams of a quartz/titanium/platinum substrate in different solutions. Blue scan preformed in 0.1M HBr, red scan preformed in 0.1M HBr plus 0.001M Br_2, green scan preformed in 0.1M HBr plus 0.01M Br_2, purple scan preformed in 0.1M HBr plus 0.1M Br_2. Scan window -0.3V to 0.0V, scan rate 50 mV/s.

The forward and back-reaction both produce nearly equal amounts of current when the concentration of HBr is 0.1M and the concentration of Br_2 is 0.001M; this is a difference of two orders of magnitude in concentration, and yet the back reaction is still producing a slightly larger current. As the Br_2 concentration was increased, the back-reaction current also increased and the gap between the forward and back-reaction is widened. The current density produced for 0.01M Br_2 in 0.1M HBr is approximately -10 mA/cm^2 compared to the clean HBr trial, which had a maximum current density of -0.5 mA/cm^2. At equal concentration of HBr and Br_2, both 0.1M, the back-reaction current density reached -38 mA/cm^2; assuming the best case scenario, in which the forward reaction is still producing and equal amount of current as it did when the Br_2 was not present, this means that the ratio of forward to back-reaction is 0.5 to 38 or that 1.316% of the total current density is a result of the forward reaction. In tests performed on the Al_2O_3 oxide membrane (Figure 10), the forward reaction behavior was slightly altered from the 'standard' platinum behavior that was observed in Figure 8. There were increased reductive and oxidative currents throughout the scan. One possible explanation for this difference is a miscalculation in the exposed surface area for either electrode. Still, as you can see from Figure 10, the back-reaction is present on the alumina surface and the current density is actually larger for the alumina treated surface. The result could again be due to incorrectly inputting a larger surface area than the alumina sample actually had, which the Bio-logic program uses for the current density calculation, or it could be due to a lower over potential for Br- reduction.



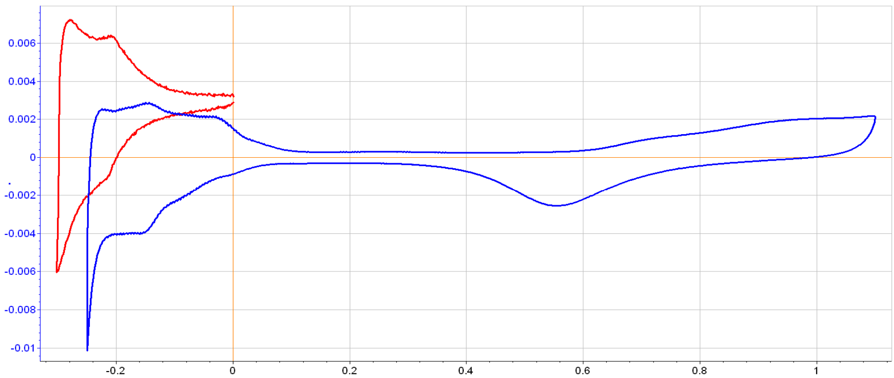
<u>Figure 10</u>: Four separate cyclic voltamagrams, two of a quartz/titanium/platinum substrate and two of a quartz/titanium/platinum/alumina substrate. Blue scan was preformed on Pt in 0.1M HBr, red scan preformed on Pt in 0.1M HBr plus 0.001M Br_2, green scan preformed on Al_2O_3 in 0.1M HBr, purple scan preformed on Al_2O_3 in 0.1M HBr plus 0.001M Br_2. Scan window -0.3V to 0.0V, scan rate 50 mV/s.

In the TiO_2 oxide layer tests (Figure 11), we see similar behavior as in the case of the Al_2O_3 sample where both the trials with only HBr in solution, representing the forward-reaction current, on clean Pt (blue line) and on TiO_2 (green line) nearly overlap. When the TiO_2 oxide layer was tested with Br_2 in solution (Figure 11, purple line) the back-reaction current was nearly equal to the back-reaction current for the clean Pt trial. What this means is that using the approach with TiO_2 was unsuccessful in preventing the back reaction.



<u>Figure 11</u>: Four separate cyclic voltamagrams, two of a quartz/titanium/platinum substrate and two of a quartz/titanium/platinum/TiO_2 substrate. Blue scan was preformed on Pt in 0.1M HBr, red scan preformed on Pt in 0.1M HBr plus 0.001M Br_2, green scan preformed on TiO_2 in 0.1M HBr, purple scan preformed on TiO_2 in 0.1M HBr plus 0.001M Br_2. Scan window -0.3V to 0.0V, scan rate 50 mV/s.

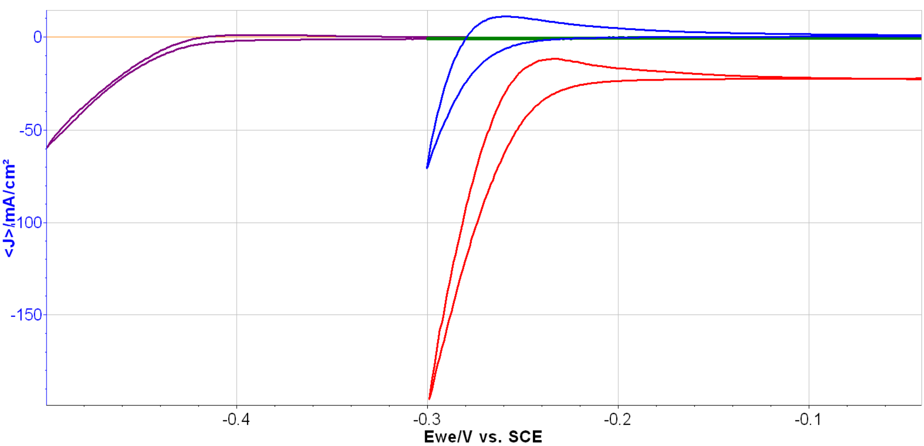
What is interesting to note about the TiO_2 membrane is that when the sample that had been covered with titanium and then heated for 12 hours at 700˚C it appears that some of the platinum may have migrated to the surface, which is possible since solid state diffusion is faster at that temperature. This hypothesis is supported by the Figure 12, because of the sharp absorption peaks and the magnitude of the current values. Having sharp absorption peaks suggests a clean Pt surface, however, since this surface was covered with 200 angstroms of Ti and then heated, it is more likely that the Pt was able to migrate to the surface in only a select few places. This would also help to explain the low current values.



<u>Figure 12</u>: Two separate cyclic voltamagrams, The red is of a quartz/titanium/platinum/TiO_2 substrate in 0.1M HBr. The blue scan was preformed on a clean Pt disc electrode in 0.5M H_2SO_4 and is a very good representation of a 'clean' platinum surface in acid media.

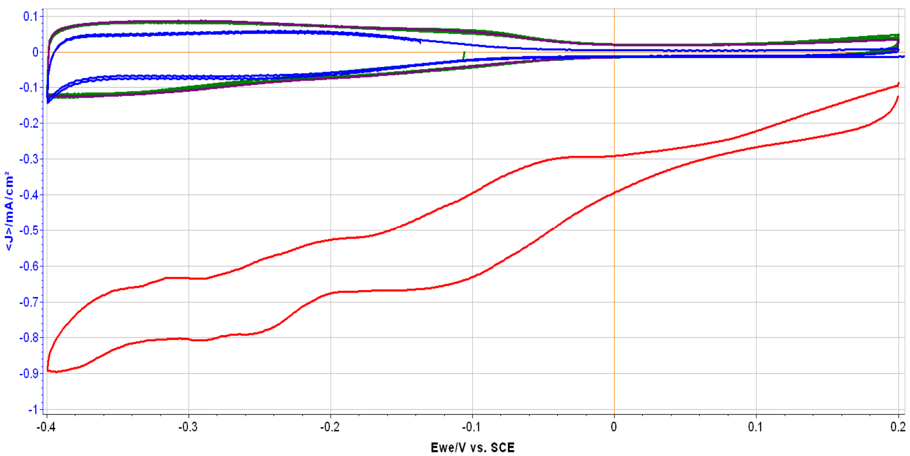
Notice that the voltamagram for show in Figure 12 displays several of the sharp adsorption peaks which are typically only seen on very clean platinum surface and when the electrochemically active surface area is small. What might have happened in this case is that some of the platinum migrated through the Ti/TiO_2 while the substrate was in the oven and then during the test only the behavior of the exposed platinum at the surface was characterized since the TiO_2 is much more of an insulator and requires a larger overpotential for hydrogen evolution than platinum does.

The results for the SiO_2 oxide membrane are shown in Figure 12. These tests were performed on platinum disc electrodes in 3M HBr for the forward-reaction only tests and 3M HBr plus 0.1M Br_2 for the back-reaction tests. The higher concentration of HBr and Br_2 is the reason for the increased current densities. As the chart below depicts, the back-reaction is effectively stopped by the SiO_2 membrane, indicated by the behavior of the purple curve, which shows zero current density where the back-reaction would usually have current density as show by the red curve. However the SiO2 membrane also inhibited the forward reaction since over 200 mV of overpotential was required to achieve a current density equal to the clean platinum in 3M HBr solution only.



<u>Figure 13</u>: Four separate cyclic voltamagrams, two of a 'clean' Pt disc electrode and two of a SiO_2 coated Pt disc electrode. Blue scan was preformed on Pt in 3M HBr, red scan preformed on Pt in 3M HBr plus 0.1M Br_2, green scan preformed on SiO_2 in 3M HBr, purple scan preformed on SiO_2 in 3M HBr plus 0.1M Br_2. Scan window -0.5V or -0.3V to 0.0V, scan rate 50 mV/s.

Figure 14 shows the results for the Cr_2O_3 membrane tested in Na_2SO_4 with argon or oxygen saturation. These tests were performed before the system was tested in with HBr or Br_2 in order to show that Cr_2O_3 is able to prevent the oxygen back-reaction. However when the electrodes coated with Cr_2O_3 were tested in HBr the results showed that the oxide was unstable in HBr due the low pH of the system and therefore the current produced was due to corrosion.



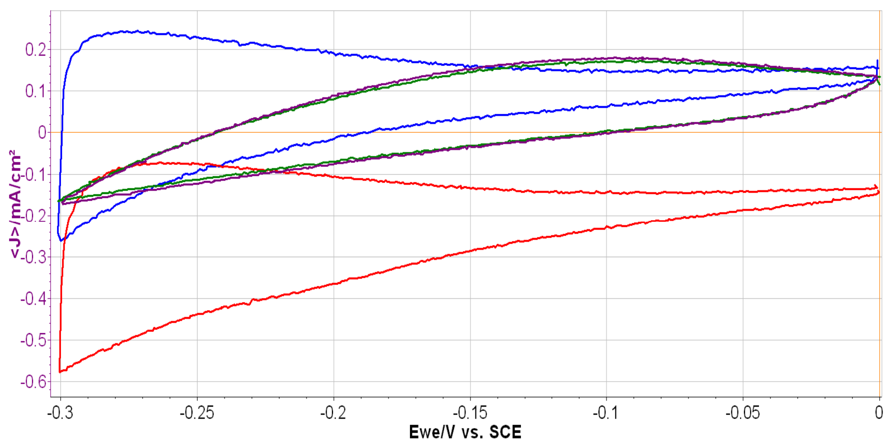
<u>Figure 14</u>: Four separate cyclic voltamagrams, two of a 'clean' Pt disc electrode and two of a SiO_2 coated Pt disc electrode. Blue scan was preformed on Pt in 0.5M $NaSO_4$ with argon saturation, red scan preformed on Pt in 0.5M $NaSO_4$ with oxygen saturation, green scan preformed on Cr_2O_3 in 0.5M $NaSO_4$ with argon saturation, purple scan preformed on Cr_2O_3 in 0.5M $NaSO_4$ with oxygen saturation. Scan window -0.4V to 0.2V, scan rate 50 mV/s.

The only membrane, which was able to prevent the back-reaction and also remain stable in the electrolyte, was Nafion 212. The presence of Br_2 does not affect the current density or which reaction is taking place when the platinum surface is covered with a Nafion membrane as shown by Figure 15.

The shapes of the curves for the Nafion coated vs. the clean platinum substrate are different. This effect is due to mass transport, which may have one or a combination of the following effects. Mass transport of H^+ ions from bulk solution to the electrode surface is what controls the reaction rate when the surface is clean. If the surface has been coated with some type of membrane, TiO_2 for example, then a different form of mass transport will most likely determine the reaction rate. This mass transport is through the TiO_2 membrane. The reason it may now be dominate is because either transport is much, much slower or the membrane layer is thicker than the double layer next to the electrode surface. The double layer is the thickness of the concentration gradient between the electrode surface and the bulk solution. Because the membrane is Nafion instead of TiO_2 the transport of H^+ ions happen by a ‘hopping’ mechanism, where protons on the SO_3H (sulfonic acid) groups "hop" from one acid site to another thereby moving through the pores. This ‘hopping’ transport of H^+ in Nafion membranes is only allowed for H^+ ions since there is a complex chemical interaction which drives it. Therefore, this type of diffusion process is different than diffusion through a solid TiO_2 and diffusion for any species other than H^+ through Nafion must happen by a different mechanism.

Since the H^+ diffusion happens by charge ‘hopping’ it is reasonable to assume that this may not be the limiting factor in determining the reaction rate, which is directly proportional to the current density. Instead it may prove productive to consider the aspect of H_2 gas desorbing from the platinum surface diffusing out of the Nafion membrane. The diffusion of the H_2 gas through the Nafion membrane is determined by the diffusion rate of gas through a porous solid. If this rate is slower than the rate of desorption of the H_2 gas from the platinum surface then a pressure of H_2 gas will build up between the Nafion membrane and the platinum surface. This will result in a slower desorption rate of the H_2 gas, eventually equilibrium will be established with a slightly increased mass transfer rate of H_2 gas through the Nafion membrane due the H_2 gas pressure under the Nafion and a slightly decreased desorption rate also due the H_2 gas pressure under the Nafion.

<u>Figure 15</u>: Four separate cyclic voltamagrams, two of a quartz/titanium/platinum substrate and two of a quartz/titanium/platinum/Nafion substrate. Blue scan was preformed on Pt in 0.1M HBr, red scan preformed on Pt in 0.1M HBr plus 0.001M Br_2, green scan preformed on Nafion in 0.1M HBr, purple scan preformed on Nafion in 0.1M HBr plus 0.001M Br_2. Scan window -0.3V to 0.0V, scan rate 50 mV/s.



Conclusion

The techniques which worked best for preventing the HBr back-reaction were the SiO_2 and Nafion membranes. Although Cr_2O_3 worked well for preventing the oxygen back-reaction, it was not stable under strongly acid conditions. The SiO_2 membrane was effective at stopping the back-reaction but required too much over potential to drive the forward reaction at a competitive current density. The Nafion membrane shows the most potential due to its ability to completely remove the back-reaction and to only slightly inhibit the forward reaction.

Having a low forward current is not a cause for concern, since a realistic system will be working in much more diluted electrolyte and with much less electricity flowing, only a few photon → electrons per particle per second, which will produce a low forward current. This is far less than the values show in the charts above which have values of milliamps (mA),a mA is around 6.241×10^{15} electrons per second. This would most likely change the limitation on the reaction rate from diffusion to or from the electrode surface to the availability of photons → electrons.

Future research on the issue of efficiency limiting back-reactions for a PEC system which uses HBr as the electrolyte should involve finding a less expensive material for the protection of the cathodic electrocatalytic site. In addition a method other than the use of a hot press for adhering the material to the electrocatalytic surface must be found. The reason is that a site of nanometer (10^{-6} m) size will not be able to undergo the procedure which was used to attach the nafion to the macro sized surfaces that were test.

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On the Riemann-Zeta Function

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Abstract

The Riemann zeta-function is an extremely useful equation in mathematics with applications in a number of different fields, including physics, statistics, and number theory. However, an important hypothesis that arises from this function, the Riemann hypothesis, has yet to be proven. Proposed by Bernhard Riemann, the Riemann hypothesis states that the distribution of the non-trivial zeros of the Riemann zeta-function all lie on the critical line, where the real part of the complex number is ½ . Through the use of modern computers, this conjecture has been shown to hold for the first 10 trillion zeros, yet it has not been proven for the general case, i.e. for all zeros. Proving the Riemann hypothesis would not only solve one of the most important problems in modern mathematics but it would also provide a deeper understanding of the overall distribution of the primes. This project discusses the Riemann zeta-function and its applications as well as discussing the Riemann hypothesis by analyzing the attempted proofs of the conjecture.

Introduction

"If I were to awaken after having slept for a thousand years, my first question would be: Has the Riemann hypothesis been proven?" – David Hilbert

David Hilbert's quote shines a light on the importance of Riemann's conjecture involving the Riemann zeta-function. In 1859 Bernhard Riemann (1826-1866) published an 8-page paper on number theory entitled *Ueber die Anzahl der Primzahlen unter einer gegebenen Grösse* (On the Number of Primes less than a Given Magnitude). Riemann presented the reader with one of the most striking conjectures in all of mathematics, one which continues to influence many conjectures and theorems. He was studying a complex variable function of the form:

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} = \frac{1}{1^s} + \frac{1}{2^s} + \frac{1}{3^s} + \cdots$$

Riemann proved that this function, where s is a complex number of the form $s = a + bi$ and $a, b \in \mathbb{R}$, can be continued analytically to an analytic function over the whole complex plane (with the exception of $s = 1$). This function, $\zeta(s)$, the Riemann zeta-function, was first studied by Leohard Euler in the eighteenth century. Euler discovered the connection between the zeta-function and primes numbers by proving the following identity:

$$\sum_{n=1}^{\infty} \frac{1}{n^s} = \prod_{p \text{ prime}} \frac{1}{1 - p^{-s}}$$

By definition, the left hand side is $\zeta(s)$ and the infinite product on the right hand side extends over all prime numbers p, i.e.

$$\prod_{p \text{ prime}} \frac{1}{1-p^{-s}} = \frac{1}{1-2^{-s}} \cdot \frac{1}{1-3^{-s}} \cdot \frac{1}{1-5^{-s}} \cdot \frac{1}{1-7^{-s}} \cdot \frac{1}{1-11^{-s}} \cdots \frac{1}{1-p^{-s}} \cdots .$$

The connection between prime numbers and the Riemann zeta-function is more evident with the above equations; however, the relationship is much deeper than it seems. The Riemann zeta-function has many consequences in prime number theory, in particular with the distribution of prime numbers.

Euler was the first to compute the values of the Riemann zeta-function at even positive integers, i.e. 2, 4, 6, … What Riemann observed differently was that $\zeta(s)$ has zeros at every negative even integer, i.e. -2, -4, -6, … Riemann was looking at the solutions to $\zeta(s) = 0$ when he made this observation, which ultimately were called the trivial zeros of the zeta-function. Any other zeros that are not in this set are called the non-trivial zeros.

Riemann proposed a conjecture about the distribution of the zeros of the zeta-function. It states that all non-trivial zeros of the Riemann zeta-function have real part ½. In other words, all non-trivial zeros of $\zeta(s)$ are of the form $s = \frac{1}{2} + bi$, where $b \in \mathbb{R}$ and i is the imaginary unit.

Riemann proposed this conjecture in his paper but was unable to offer a proof of it, stating: "Of course, it would be desirable to have a rigorous proof of this; in the meantime, after a few perfunctory vain attempts, I temporarily put aside looking for one, for it seemed unnecessary for the objective of my investigation." (Riemann 5) It would seem that Riemann underestimated how necessary a proof to his conjecture would be, the importance of which will become evident to the reader in the discussion that follows.

The Riemann Zeta-Function

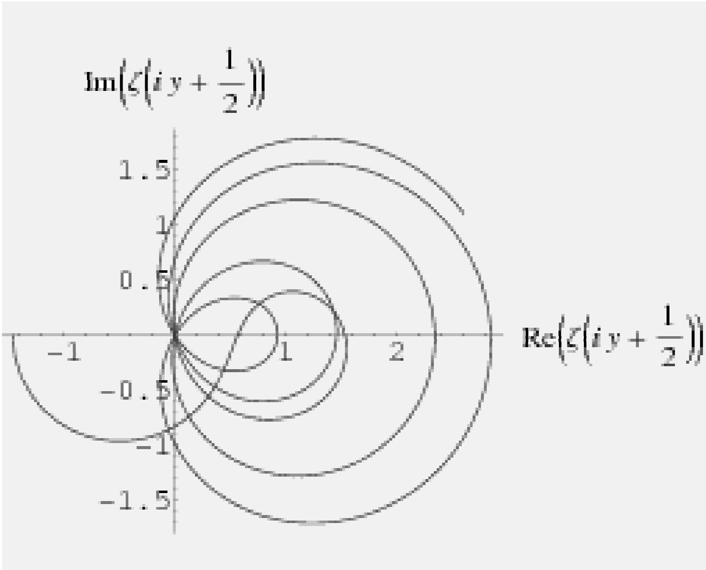
The Riemann zeta-function is a complex variable function

defined as

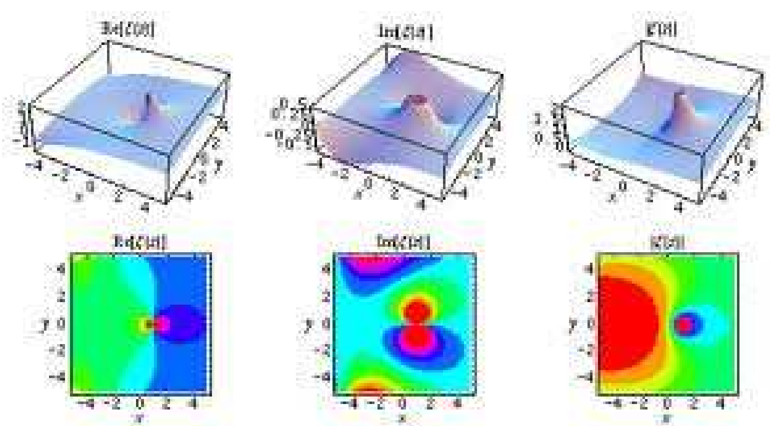
$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} = \frac{1}{1^s} + \frac{1}{2^s} + \frac{1}{3^s} + \cdots$$

The function was first considered by Euler in the context of the theory of prime numbers but its most remarkable properties were not discovered before Riemann, who considered the function when s is a complex variable of the form $s = a + bi$ with $a, b \in \mathbb{R}$. There are two types of zeros of the Riemann zeta-function, the trivial zeros and nontrivial zeros. The trivial zeros of the zeta-function occur at all negative even integers, that is, when s = -2, -4, -6, -8, … While the nontrivial zeros occur at certain values of b satisfying $s \equiv a + bi$ for s in the critical strip $0 < a < 1$.

The plot below shows the real and imaginary parts of $\zeta(1/2 + bi)$, that is the values of $\zeta(s)$ along the critical line where a = ½, as y is varied 0 to 35 (Sondow).



The following plots show the real and imaginary parts of ζ(*s*) plotted in the complex plane together with the complex modulus of ζ(*z*). The modulus of a complex number *z*, also called the complex norm, is denoted $|z|$ and defined by $|x + yi| \equiv (x^2 + y^2)^{-1/2}$ (Sondow).



As is evident, in the right half-plane, the function is fairly flat, but with a large number of horizontal ridges. It is precisely along these ridges that the nontrivial zeros of $\zeta(s)$ lie.

On the real line with $x > 1$, the Riemann zeta-function can be defined by the integral:

$$\zeta(x) \equiv \frac{1}{\Gamma(x)} \int_0^\infty \frac{u^{x-1}}{e^u - 1}\, du,$$

where $\Gamma(x)$ is the gamma function. If x is an integer n, then we have the identity:

$$\frac{e^{-u}\, u^{n-1}}{1 - e^{-u}}$$

$$e^{-u}\, u^{n-1} \sum_{k=0}^{\infty} e^{-k\,u}$$

$$\sum_{k=1}^{\infty} e^{-k\,u}\, u^{n-1}.$$

So

$$\int_0^\infty \frac{u^{x-1}}{e^u - 1}\, du = \sum_{k=1}^{\infty} \int_0^\infty e^{-k\,u}\, u^{n-1}\, du.$$

To evaluate $\zeta(n)$, let $y = k\,u$ so that $dy = k\,du$ and plug in the above identity to obtain:

$$\zeta(n) = \frac{1}{\Gamma(n)} \sum_{k=1}^{\infty} \int_0^{\infty} e^{-k\,u}\, u^{n-1}\, d\,u$$

$$= \frac{1}{\Gamma(n)} \sum_{k=1}^{\infty} \int_0^{\infty} e^{-y} \left(\frac{y}{k}\right)^{n-1} \frac{d\,y}{k}$$

$$= \frac{1}{\Gamma(n)} \sum_{k=1}^{\infty} \frac{1}{k^n} \int_0^{\infty} e^{-y}\, y^{n-1}\, d\,y.$$

Integrating the final expression gives $\Gamma(n)$, which cancels the factor $1/\Gamma(n)$ and gives the most common expression for the Riemann zeta-function:

$$\zeta(n) = \sum_{k=1}^{\infty} \frac{1}{k^n},$$

The Riemann zeta-function plays an important role in prime number theory, particularly in the distribution of primes. In fact, it is known that the prime number theorem is equivalent to the statement that $\zeta(s)$ has no zeros on $a = 1$. Moreover, Riemann's main research goal was to find a method to better approximate the number of primes less than a given magnitude. That is, if given a number, such as 1000, how can one calculate the exact number of primes less than 1000?

This information is important in order to see the patterns within prime distribution. Riemann essentially was able to answer his initial question with his zeta-function. This discovery gives deep results surrounding the prime number theorem; however, while many of the properties have been investigated, important conjectures remain unproven to this day. The most notable among those conjectures is the Riemann hypothesis.

The Riemann Hypothesis

Proposed by B. Riemann in 1859, the Riemann hypothesis is a conjecture about the distribution of the zeros of the Riemann zeta-function which states that all non-trivial zeros of the Riemann zeta-function have real part ½. In other words, all non-trivial zeros of $\zeta(s)$ lie on the line $x = ½$, which is known as the critical line, as Figure 1 which I generated exemplifies:

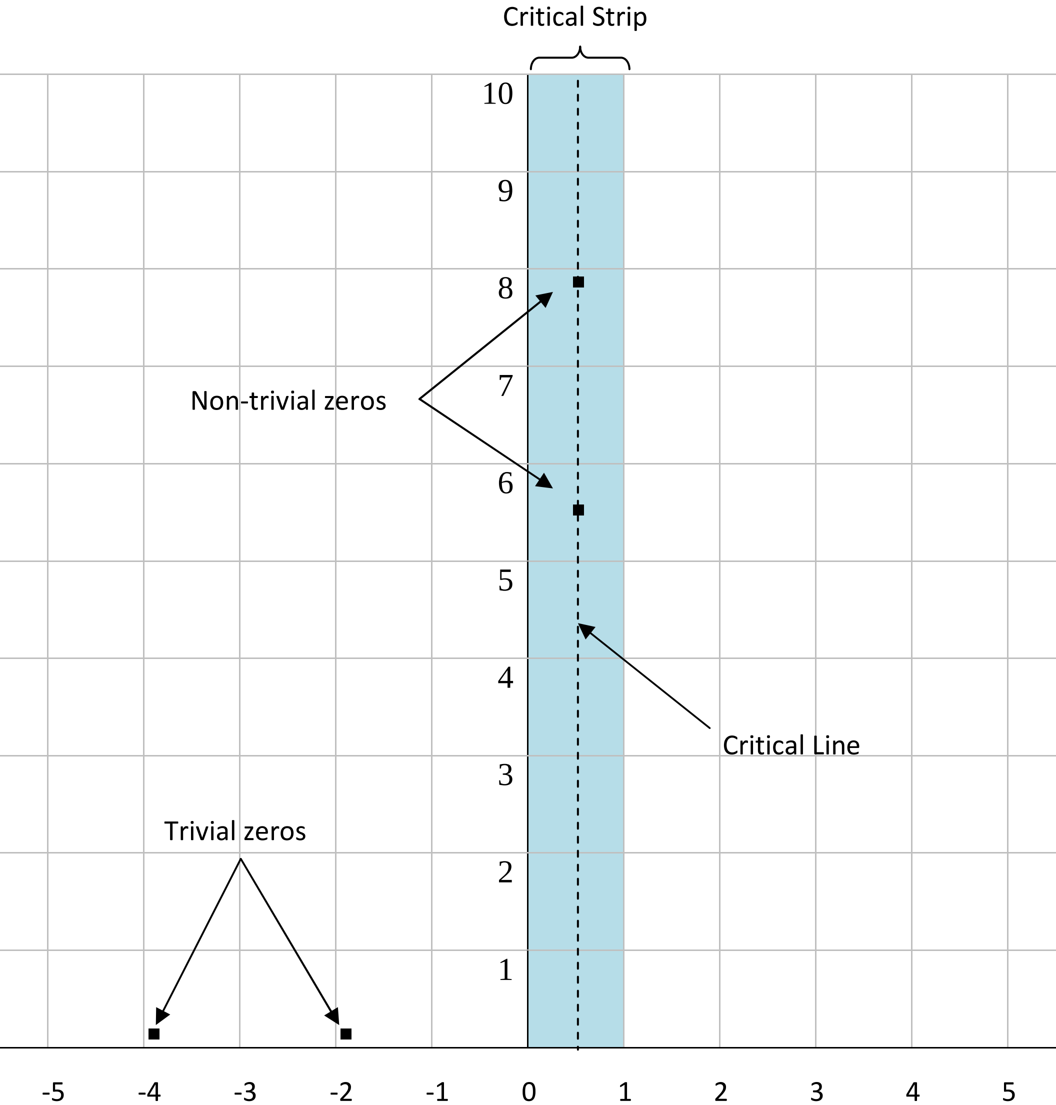


Figure 1: Plot of the Critical Line, non-trivial and trivial zeros are also indicated.

As of today, the Riemann hypothesis is known to be true for the first 10^{13} zeros. The following Table which I generated lists historical benchmarks in the number of computed zeros since Riemann's first computation in 1859.

Table 1: Computations of the Zeros of the Riemann Zeta-Function

COMPUTATIONS OF THE ZEROS OF THE RIEMANN ZETA-FUNCTION

YEAR	# OF ZEROS	COMPUTED BY
1859	1	B. RIEMANN
1903	15	J. P. GRAM
1914	79	R. J. BACKLUND
1925	138	J. I HUTCHINSON
1935	1,041	E. C. TITCHMARSH
1953	1,104	A. M. TURING
1956	15,000	D. H. LEHMER
1956	25,000	D. H. LEHMER
1958	35,337	N. A. MELLER
1966	250,000	R. S. LEHMAN
1968	3,500,000	J. B. ROSSER, ET AL.
1977	40,000,000	R. P. BRENT
1979	81,000,001	R. P. BRENT
1982	200,000,001	R. P. BRENT, ET AL.
1983	300,000,001	J. VAN DE LUNE
1986	1,500,000,001	J. VAN DE LUNE
2001	10,000,000,000	J. VAN DE LUNE
2004	900,000,000,000	S. WEDENIWSKI
2004	10,000,000,000,000	X. GOURDON

Although the numerical evidence is compelling, there have been many conjectures in number theory that were supported by large amounts of numerical evidence that turned out to be false. However, the proof of the Riemann hypothesis for varieties over finite fields has been proved. Deligne proved this in 1974 and is possibly the single strongest theoretical reason in favor of the

Riemann hypothesis (Edwards 268). Deligne's proof along with the mass consequences of the Riemann hypothesis strongly suggests that the hypothesis would hold; however, the evidence supporting the Riemann hypothesis is strong but not overwhelming.

Attempted Proofs of the Riemann Hypothesis

Since Riemann first proposed his hypothesis back in 1859, there have been numerous attempts at proving his conjecture; all however, have been flawed. Some attempts are more infamous than others, like the proposed proof in 1959 by the famous mathematician and Nobel Prize winner, John Nash. Nash was supposed to present his proof at a lecture at Columbia University sponsored by the American Mathematical Society. Regrettably, Nash, who suffered from schizophrenia, delivered a rambling and unintelligible lecture to the audience.

L. Fekih-Ahmed attempted to prove the Riemann hypothesis in his paper *On the Zeros of the Riemann Zeta Function*, where he used the fact that ζ(s) satisfies the functional equation:

$$\xi(s) = \xi(1-s)$$

This arises from Riemann defining ζ(s) as the following:

$$\xi(s) = \pi^{-s/2}\,\Gamma\left(\frac{s}{2}\right)\,\zeta(s)$$

Fekid-Ahmed then proceeded with a proof by contradiction by supposing that s is a zero of ζ(s), which implies that *1-s* must also be a zero of ζ(s). However, his proof has several flaws, including the fact that he used the expression ζ(1-s)/ ζ(s) which in rigor is

0/0 and thus meaningless. Fekid-Ahmed also exchanges a limit without justification, and with his previous mistake his proof could not be fixed.

Madrecki also proposed a proof in his paper *One page proof of Riemann Hypothesis* published in September 2007. However, C. Picard quickly refuted Madrecki's proof, bringing to light several mistakes found in his paper, such as, $1/\zeta(s)$ has an infinity of zeros; more, Madrecki's formula accepts only real zeros which makes the formula false (Proposed (Dis)Proofs of the Riemann Hypothesis).

An Equivalent Statement

When attempting to prove a difficult conjecture like the Riemann hypothesis, mathematicians often make use of the strategy known as the equivalent statement. Instead of proving a statement directly, this approach seeks to find an equivalent statement and prove that instead. Clearly, the intended goal is that the equivalent statement will be easier to prove than the original statement. This allows mathematicians to contribute ideas to help solve the problem: one mathematician may propose the equivalent statement while another proves it.

In regards to the Riemann hypothesis, there are many different equivalent statements. A selected number of equivalent statements illustrate how the Riemann hypothesis spans a variety of mathematical subjects. In the field of number theory one equivalent statement to the Riemann hypothesis is the following: the number of integers with an even number of prime factors is the same as the number of integers with an odd number of prime factors.

Consequences of the Riemann hypothesis

There are numerous statements that are implied by the Riemann hypothesis, thus proving the Riemann hypothesis would prove these theorems as well. One of the statements that is implied by the Riemann hypothesis is Goldblach's Strong Conjecture which states that every natural number $n \geq 5$ can be written as the sum of three prime numbers (Sondrow). Hardy and Littlewood proved that the generalized Riemann hypothesis implies Goldbach's conjecture for a sufficiently large natural number n; however, in 1997, Deshoillers, et. al proved that the generalized Riemann hypothesis implies Goldbach's strong conjecture (Edwards 261).

Another consequence of the Riemann hypothesis is a better bound for the Dirichlet L-series. Assuming the Riemann hypothesis, one can prove that the lower bound on the value of the Dirichlet L-series can be improved to be a simpler equation.

Overall, there are many statements that can be proven by first assuming the Riemann hypothesis holds. This fact provides additional incentive for mathematicians to attempt to prove the Riemann hypothesis and overall adds to the importance of the conjecture.

Conclusion

The Riemann zeta-function is an extremely useful function in mathematics with applications in a number of different fields. The conjecture that arose from the zeta-function, the Riemann hypothesis, has become one of the most important unsolved hypotheses in mathematics and is now included in the prominent list of the Clay Mathematics Institute’s seven prize problems.

The Riemann hypothesis proposes a seemingly simple conjecture: all non-trivial zeros of the Riemann zeta-function have real part ½. This straightforward conjecture has withstood numerous attempted proofs by many mathematicians throughout history. Overall, it would seem that the widespread strategy to implement when attempting to prove the Riemann hypothesis is to prove an equivalent statement. Thus future research would include analyzing attempted proofs and finding an equivalent statement to the Riemann hypothesis. Specifically an equivalent statement concerning the relationship between the Riemann zeta-function and the Laplacian determinant, the idea being that the equivalent statement would be easier to prove than the Riemann hypothesis.

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Athletes and Self-Concept: An Exploration of Role Distance between Real and Performer Self-Concept

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Abstract

This study is an assessment of college athletes' shifting self-concept as a function of situational role demands. Specifically, the study examined whether student athletes think and feel differently about themselves, their abilities, appearance, and interpersonal facility during moments of competition. Although prior research has shown that athlete self-concept is related to performance and ability to adapt to changes, little work has examined how such self-concept may differ as a function of game play. Thirty-two collegiate student-athletes (19 men and 13 women) twice completed a shortened version of the Self-Description Questionnaire for Young Adults and Adolescents (SDQIII): once primed in their real (or day-to-day) self and again in the mindset of their athletic (or performance/competition/public) self. A performance self was induced using an imagery and writing procedure to enhance a shift in self-image. Results of the two administrations of the SDQIII were compared using repeated measures analysis of variance (ANOVA). Findings suggested largely equivocal F scores, except for the Physical Abilities subscale, which measures respondents' views of their physical talents and skills at sport. However, contrary to expectations,

scores on the Physical Abilities subscale decreased after the competition mindset shift cue. Therefore, after the athletic cue, participants perceived their abilities as lower while in play. Further analyses will examine if sport proficiency or other factors such as age or gender mediate these results. This study builds upon previous work that suggests that personality dimensions related to athleticism strengthen with experience and salience to sport affiliation.

Introduction

The multidimensionality of self-concept has been shown to develop with age and interactions with other persons (Earle, Crust, & Clough, 2002; Marsh, 1998; Marsh & Perry, 1995; Nasco & Webb, 2006). Throughout their daily interactions and behaviors people shift their roles and identities based on exterior salience (Nasco & Webb, 2006; Yopyk & Prentice, 2005). Athleticism is one such demonstration of development within the self-concept. Previous research indicates that individuals who engage in athletic activities appear to create a new or separate identity; the research, however, does not explain the complexities of this identity. The question remains whether a performance/competition or "athletic" self exists apart from an athlete's every day, primary or "real" self in daily, non-competitive roles.

The body of previous work concerning athleticism and self-concept has primarily compared athletes to others: non-athletes and retired athletes (Adler & Adler, 1989; Nasco & Webb, 2006; Rice & Pasupathi, 2010). Differences among athletes have mostly made comparisons on the basis of gender, age and skill level (Aşci, Koşar, & İşler, 2001; Earle, Crust, & Clough, 2002; Marsh, 1998; Marsh & Perry, 1995). In these studies introspective comparisons in athletic self-concept have also been made between student-athletes in their dual student and athletic identities.

The purpose of this study is to test the commonly-held belief that athletes shift into alternate dimensions of their self-concepts and, in a sense, become "someone else" during moments of competition. College athletes were assessed in their views about themselves, their abilities, appearance, and interpersonal facility. Specifically, this study examined whether student athletes think and feel differently while in-play when compared to how they see themselves while not in play. As suggested by the following literature, collegiate athletes appear to be prone to the conditions of what will be explained as "role distance."

The Multidimensionality and Salience of Self-Concept

Marsh and Perry (1995) define self-concept as a hierarchy of many levels of identity: general, academic, social, emotional, and physical. They elaborate to include identity as a construct of behavioral mediators and predictors of personality. Marsh (1998) found athletic self-concept to be differentiated from general self-concept (basic beliefs about oneself unspecified to a single parameter to personality), highly correlated to external factors of competence, skills and accomplishments. Without the multidimensional understanding of self-concept, as opposed to one quantifiable feature, self-concept cannot be fully comprehended.

Having an athletic identity is unique among other roles an individual may assume due to its early onset in athletic events and exposure (e.g. training and competition) (Nasco & Webb, 2006). Athleticism and physical ability tend to arise early in life (p. 436), allowing more time to internalize this identity. Also, the behaviors and consequences of athleticism are usually performed in front of an audience, adding more pressure to conform to this identity.

Yopyk and Prentice's (2005) study on salience found that after priming student-athletes in their student identity, they performed well on an academic measure; when primed in their athletic identity, they performed significantly less well on the same measure. However, when not primed with either identity, student-athletes appear to shift between identities with fluidity, suggesting that the identity most adaptive to a particular task will dominate. Still, this is only a self comparison between two separate mindsets, neither of which is the primary, central or real self.

Athletic Self-Concept as a Development

In relation to global self-concept, a comprehensive facet of all dimensions for one's personality, studies find little correlation between athletic participation and overall, global self-concept (Marsh & Perry, 1995). Athletic participation correlated substantially to the dimension of self-concept in physical ability dimensions but demonstrated no significance in relation to other nonphysical dimensions. Female athletes taking self-concept inventories measuring gender and athletic subscales were shown to have elevated levels of masculinity when compared to non-athlete females but showed no difference when compared to non-athletes on scales of femininity, suggesting specificity to where certain dimensions are compartmentalized within their respective areas of self-concept.

Marsh (1993b) found that participating in athletics for two years in high school had a large effect on social self-concept when assessed after graduation. Compared to other ages, older athletes (25 years and older) scored higher on self-esteem scales (Marsh, 1998). Before age 25, global self-concept – the overall conglomerate of the many subfields in personality – is on a U-shaped quadratic. Self-concept declines from preadolescence to young adolescence, plateaus in adolescence to young adulthood, and increases in adulthood (p. 240). Due to its developmental nature, some evidence shows that athletic dimensions can be increased through systematic mental skills training by therapists, similar to what may happen naturally with routine practice and experience within a sport (cited in Nicholls et al., 2008).

Findings by Aşci, Koşar, and İşler (2001) show a significant main effect for physical activity level and sense of athletic competence but indicate no dramatic effects with global self-concept. The findings further support the hypothesis that more physical activity and exposure (e.g. proficiency) inflates athletic self-perception while leaving global self-concept intact. Since global self-concept does not differ for youth in either the high or low physical activity groups (Aşci, Koşar, and İşler, 2001), it is conceivable that both proficient and novice athletes do not differ in their real self-perception but may exhibit greater disparity in identity and self-concept in comparison to their athletic self-perception.

In contrast, older adults were less motivated to build up or maintain their self-concept, rating higher overall happiness with less negative thoughts about their past. They showed more security in their identities and generally did not demonstrate much concern for their image, consistent with Marsh's (1995) suggested change around age 25. Furthermore, a positive correlation for later age and retirement with respect to athletic mindset can be inferred from Rice and Pasupathi's (2010) comparisons of adolescents (mean age 20.58 years) to older adults (mean age 73.25 years). Adolescents showed high consciousness concerning the acceptance of their peers, desiring to maintain a consistent identity in response to having unclear self-understanding.

These findings relate to Nasco and Webb's (2006) conclusions and aid in explaining athletic self-concept in retired athletes. Retired athletes show less strength in their athletic self as opposed to younger, in-season athletes due to both a lack of sport salience and lack of motivation to uphold their former identity. This is perhaps the final progression in athletic self-concept.

Stages in Athleticism

Overall, athletes showed significantly higher self-concept than non-athletes on global scales with physical ability showing the largest disparity (Aşci, Koşar, & İşler, 2001; Marsh & Perry, 1995). Athletes differ in self-concept when compared by age and experience but not based upon skill level; proficiency/performance and increasing years of experience are positively correlated (Earle, Crust & Clough, 2002). Student-athletes demonstrate the ability to shift between mindsets based upon salience and need when compared to themselves in other dimensions (Yopyk & Prentice, 2005). Retired athletes retain their internalized identity as athlete but exert less effort maintaining or defending their public identity (Adler & Adler, 1989; Rice & Pasupathi, 2010). The degrees of athletic identity suggest a developmental series relative to experience and salience on stronger athletic self-concept.

Perhaps then a greater contrast between the real and athletic self can best be found in proficient athletes. Adler and Adler (1989) describe aggrandizement, defined as an already elite athlete becoming aggrandized by her/his self-reflections as well as portrayals through media (usually at the collegiate level), as constructing a less complex identity from an athlete’s real self. “Reflected glory” such as strangers desiring to be near, talk with, and touch the athletes encourage this aggrandizement. Athletes in gloried – having celebrity-like status – and aggrandized (p. 299) personas show internalization, with these identities penetrating their private and public selves to promote “role distance,” or a dramatic disparity in identity and self-concept between two dimensions (Goffman, 1961). Gloried athletes appear to be ideal for examination because they appear to change their cognitions more easily into what outsiders perceive of them by posing artificial affects, striving to conform to their public portrayal. Based on this literature, collegiate athletes appear ideal for exploration of such role distance.

This study seeks to examine whether there is a significant role distance between the “athletic” self and the day-to-day or “real” self in a sample of student-athletes. The relationship between the athletic self versus the real self on measureable subscales remains an unknown. This study compares self-reported data representing the participants' dual athletic and real dispositions in an experimental pre-test/post-test manipulation.

Methods

Participants

Participants consisted of 32 student-athletes at a medium-sized West Coast public university. As Table 1 indicates, males and females who participated in 13 activities are included (*M* = 32 yrs, *SD* = 2.2 yrs) from both varsity (*n* = 1) and club (*n* = 31) divisions

Table 1: List of Sports Represented Participants in Each

Sport	# of Participants	Sport	# of Participants
Alpine Skiing	1	Fencing	2
Hockey	3	Lacrosse	4
Men's Rugby	5	Roller Hockey	1
Snowboarding	1	Soccer	2
Triathlon	7	Ultimate Frisbee	4
Volleyball	2	Water Skiing	1
Women's rugby	1		

The majority of participants identified themselves as White (non-Hispanic, 79.1%), junior-class (37.5%) and heterosexual (87.5%). As for their self-reported athleticism, 31 (96.9%) participants reported that they compete in their primary sport. The average amount of time per week dedicated to practice and/or play was 10 hours (25%), and 62.5% (*n* = 20) rated their skill/ability level as "pretty good" on a five-point scale ranging from "novice" (*n* = 1) to "among best in the nation" (*n* = 1).

Instruments

Self-Description Questionnaire for Young Adults and Adolescents (SDQIII):

The Self-Description Questionnaire for Young Adults and Adolescents (SDQIII; see Marsh, 1990a, 1993a, for overviews) is a 136-item Likert-type self-report measure of self-concept. The measure has been used in several studies and has been found to have adequate reliability and validity (Marsh, 1992; Marsh, Barnes & Hocevar, 1985; Marsh & Byrne, 1993; Marsh & O'Niell, 1984; Boyle, 1994; Byrne, 1984; Hattie, 1992; Wylie, 1989). Convergent validity on all 13 subscales ranges from .44 to .94 (median = .71), and factor correlations for divergent validity range from -.06 to .36 (median = .10). Based on the test manual's normative sample of 2,436 respondents, estimates of reliability are robust for the full scale (alpha = .74 to .95, median = .90) and subscale alphas, ranging from .74 (Honesty/Trustworthiness) to .95 (Spiritual Values/Religion). Because some of the scales were not relevant to this study (e.g., Verbal and Math) we only included seven subscales: Problem Solving, Physical Ability, Physical Appearance, Same-Sex Peer Relations, Honesty/Trustworthiness, Emotional Stability and General Esteem. The removal of six subscales yielded a 74-item scale with an overall alpha of .32. Given the diversity of the subscale domains, such a low alpha is not unexpected.

Procedures

Email invitations were sent to 426 athletes registered with the university's sports/activities roster of which 58 were returned due to closed/incorrect email accounts. Thirty-two student-athletes completed the study. Participants were directed to complete the survey online. In the first section of the survey, basic information was obtained about general demographics and sports activities. In the next section, participants completed the 74-question SDQIII.

After completing the SDQIII, participants responded to a brief priming exercise. In this exercise, they were asked to take a moment to think about, and focus on, their activities/routine practices and imagine themselves in their primary sport. The prompt read as follows:

> *Before you continue, we would like you to imagine yourself in your PRIMARY sport during competition. Picture yourself in that situation, in the proximity of other competitors, spectators, coaches, and/or teammates. If your sport requires you to wear a uniform or kit or carry gear, please imagine yourself wearing or carrying these objects as well. Take a moment to imagine yourself in the most intense moments of competition.*

The imagery technique was then followed by a writing task based on Yopyk and Prentice (2005):

> *In the space provided below please give a brief (1 or 2 paragraph max.) description of your most recent competition in your primary sport. Describe the event in terms of your feelings before, during, and after the competition. Did you face any problems or obstacles from the opposing side? If so, how did you attempt to solve them***?**

Once this was complete, participants completed the SDQIII again.

Results

Pre (real self) and post-test (athletic self) scores on the SDQIII were compared using a series of repeated-measures ANOVAs (See Table 2). Alpha was set at p < .05 to determine significance. Out of the seven subscales, only the Physical Ability subscale was significantly different between pre and post-testing.

However, this difference was in a direction opposite to expectations in that pre-test scores were significantly higher than post-test scores.

Table 2. The Pre-test/Post-test Comparison between the Real and Athletic Selves

Subscale	**Real Self *M* (*SD*)**	**Athletic Self *M* (*SD*)**	***F***
Problem Solving	58.23 (7.0)	54.66 (12.8)	.63
Physical Ability	63.27 (5.70)	54.56 (3.80)	193.40*
Physical Appearance	53.62 (10.40)	55.22 (11.50)	2.67
Same-Sex Peer Relations	59.67 (9.0)	60.66 (10.0)	.48
Honesty/Trustworthiness Scale	69.12 (9.20)	64.88 (19.0)	2.07
Emotional Stability	54.52 (10.40)	50.35 (16.50)	3.56
General Esteem	73.40 (8.80)	69.03 (18.80)	2.16

*** = $p < 0.05$**

Discussion

Athletes in this study did not show a dramatic shift in identity. Given the specific stimuli in the athletic priming question, participants perceived their performance ability lower when faced with challenge. Contrary to commonly held perceptions, an athlete can “become” an entirely other person while in-play, these results suggest a more integrated, central stance on athletic identity. The data suggest that an athlete in the heat of competition does not change into someone else. They are the same individual but with a heightened consciousness and lower perception of their physical abilities. These results beg the question of whether a drop in self-concept while in-play is due to the Marsh’s (1987, 1991, 1993a, 1998) notion of the Big Fish Little Pond Effect (BFLFE). The effect states that competitors gain motivation to perform competitively among equally skilled peers by downplaying their own abilities.

By being informed that they were going to be taking an “athlete survey,” participants may have already primed themselves prematurely for the pre-test SDQIII:

> *You are receiving this email because you are registered with UCSB's Club Sports program. I am a faculty member in the Department of Counseling, Clinical, and School Psychology at UCSB and I am interested in self-concept among athletes. Below, you'll find a link to an online survey that will ask you about various aspects of your self-concept both in and out of athletic competition. Participation in the study is voluntary, but will enter you into a drawing to receive a $50 gift certificate to Sports Authority. I expect that completion of the study will take approximately 30 minutes.Thank you for your time, and I hope you're having a good (and active) summer!*

The survey did not inform participants that the initial test was to be taken in their day-to-day mindset, apart from their athletic identity. Any further shift to their athletic self may have proven minimal due to their already-salient athletic identity.

Future Research

In order to obtain a more statistically viable result, any future research based on these findings will need to pay closer attention to the language used in the athletic priming section. One possibility is to revise the online SDQIII to include a prompt explicitly informing the participant to complete the pre-test in their real mindset followed by the athletic mindset cued with more aggrandized and motivational language.

With more research, the results found in athletic identity studies can be generalized to the general population for individuals expected to shift into a completely different entity in their profession or activity. Suggesting that these subscales are significant only to athletes and sport environments limits the applications of sport/exercise psychology. Athletes are an ideal study population as they voluntarily engage in stressful activities on a regular basis. Numerous occupations with individuals in high-priority or public roles such as Chief Executive Officers (CEOs), or law enforcement agents may prove to be equally good subjects for the study of the multiple aspects of self-concept and might well benefit from this work.

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Le Barcito: An Ethnographic Study of a Queer Latino Bar in Los Angeles

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Abstract

In 1967 police raided a gay bar, attacked the customers and owner, arresting sixteen people. This raid sparked the fuse for mass demonstrations in what became the largest national gay rights movement recorded until then. Today the space that the City of Los Angeles has designated as a historical monument is called "Le Barcito," a queer Latino bar located in Silver Lake, Los Angeles. Bars are places of leisure often becoming sanctuaries for marginalized groups. Through interviews and ethnographic methods, this research project describes a typical visit to Le Barcito to understand the physicality of the bar, develops a discussion of the meaning of space, and offers a discussion of the role of Le Barcito in community building for gay Latinos in Los Angeles.

Introduction

In 1967 police raided a Los Angeles gay bar, the Black Cat Tavern, attacked the customers and owner, and arrested sixteen people. Today the space that the City of Los Angeles has named a historical monument is called “Le Barcito,” a queer Latino bar located in the Silver Lake neighborhood. Bars are places of leisure that often become sanctuaries for marginalized groups. Places of leisure provide sites for the expression of identity; whether it is sports, art, or building community, places of leisure allow for the development of personal and political identities. This research report utilizes interviews and ethnographic methods to discuss and analyze the use of space and the role the bar Le Barcito plays in a sexual community in Los Angeles.

I begin by describing a typical visit to Le Barcito in order to familiarize the reader with the layout or floor plan of the bar. I follow this with a discussion of the clientele to elaborate on the community building that occurs in this venue. Le Barcito is a bar where queer Latinos experience and express their identities freely and where they achieve a sense of community.

Le Barcito is located on Sunset Blvd in the Silver Lake district of Los Angeles. From the street, it appears as a small purple building with bright silver doors, which easily distinguishes it from neighboring businesses that are not as flamboyant from the outside. From its long history to its colorful patrons and lively staff, Le Barcito is a space that functions as a Latino gay community builder. Le Barcito is a social, sexual, political and spiritual space for gay Latino men. This project offers preliminary answers to the question of how Le Barcito serves as an example of a space of leisure that builds unity in the gay Latino community in Los Angeles.

This space has been symbolic to the gay community for decades. I offer a brief historical account of the actual space, then move to a description based on my observations of the bar on a typical day in 2009, one that begins when the doors of Le Barcito open until closing hour. A review of the existing scholarship on gay and lesbian spaces of leisure provides the framework for a discussion of Le Barcito and its role in four spheres of community building: social, political, sexual and spiritual. In the conclusion, I suggest future lines of research.

From the Black Cat Tavern to Le Barcito

Before becoming Le Barcito, the bar was known as the Black Cat Tavern. 1967 saw a devastating war in Vietnam, the rise of student run organizations around the globe, and civil rights demands that turned society upside down; it was also the year when the Black Cat Tavern became important to Los Angeles. The bar was raided on New Year's Eve 1967. The raid triggered massive protests in support of gay rights and predated the better-known Stonewall riot in New York City by two years. Although the event was significant to the gay community in Los Angeles and to the larger struggles for gay civil rights, according to a report in the *Los Angeles Times*, it took until 2008 for the space to be recognized as an historical-cultural monument in the city.

During the 1980s, Silver Lake became a space of refuge for immigrant Latinos who settled in Los Angeles from countries in Central and South America. The Census Bureau estimates that the number of Latino/Hispanic identified people in Los Angeles increased by 1,294,733 between1980 to 1990 (Iceland 1). At the same time, there was an influx of gay men and lesbians into Silver Lake. Films like "Silver Lake Life: The view from here" offered a glimpse of the burgeoning gay life in the district during the 1980s. By the mid-1980s, Silver Lake was split into two dominant groups, Latino and gay. Along Sunset Boulevard an array of queer and Latino establishments flourished.

Tensions between these two groups were inevitable. A lack of communication made the interaction between the groups impersonal and neither group went beyond the stereotypical images they had about the other (Ramos 1). In a *Los Angeles Times* article, a twenty-two year old Salvadorean mother and resident of Silver Lake speaks about the gay community: "I tell my kids to be careful because they have to play on the street, I tell them to watch out for two things-cars and gays." Many residents expressed a lack of tolerance for members of the other group and there was little knowledge about or positive interaction between them. Tensions began to ease with the Sunset Junction Street Fair, which began in 1980. The initiative to start this street fair came from community meetings between Latinos, gays and lesbians, and local businesses. An organization, the Sunset Junction Neighborhood Alliance, was created to build bridges across the diverse communities (Kaplan 1). At the fair, people were forced to share a space and to partake in fun activities in daylight. However, remnants of the separate spheres of the 1980s continue today and Le Barcito is part of this Silver Lake story. As ethnographic observations show the bar continues to invoke its historical legacy.

Literature Review

Literature addressing gay life in Los Angeles tends to focus on the socio-historical aspect of being gay in L.A. Lillian Faderman and Stuart Timmons' *Gay L.A.: A History of Sexual Outlaws, Power Politics, and Lipstick Lesbian*s tells the gay history of Los Angeles from the Chumash to the film *Brokeback Mountain (2006).* In the epilogue to *Gay L.A.* they acknowledge the growing presence of gay Latinos as the population of Latinos grows in the metropolitan area (318). This historical account hints at how marginalized groups use their limited resources to express their identities, out of leisure and necessity. Like other books on repressed communities, the creation of safe spaces in difficult and often hostile surroundings is one key element in leisure activities.

The story of Le Barcito showcases a space that was created under difficult circumstances by a repressed group of people, in this instance repressed by both ethnicity and sexual orientation.

In many ways Le Barcito emerges from what gay Latinos are able to use, both aesthetically and in the community, since the space is neither glamorous nor expensive and the décor is recycled from previous years. By recycling the decorations, the space is an example of what Ybarra Frausto calls *rasquache*, creating something artful with limited resources (Garcia 214). Moreover, *rasquachismo* is inviting because it brings an element of familiarity, not only as a result of viewing familiar objects through the years but also because it enables individuals from different economic backgrounds to feel comfortable.

The evolution and development of a particular bar space allows us to dissect other socio-historical elements in the gay community. For example, in *Creating a Place for Ourselves: Lesbian, Gay and Bisexual Community Histories* (1997), Brett Beemyn discusses the impact of gay bars in the gay community in New York in the twentieth century. Beemyn traces a historical shift in the purpose of bars over time. Housing in certain areas of New York was open to gays and lesbians and bars were readily available in these neighborhoods. Even drag was a tourist attraction before the Great Depression. The area around Broadway featured inexpensive housing and people assumed that everyone was somehow involved in the theatre and therefore naturally sexually ambiguous. During the Depression, however, when masses flooded New York City from their small towns, the cafeterias and other social spaces LGBT individuals frequented and the inexpensive housing they occupied became closed off to them. These spaces no longer welcomed LGBT individuals and preference was given to housing families.

Another book that acknowledges the struggles of a working class minority is *Boots of Leather Slippers of Gold*: *The History of* *a Lesbian Community*, Elizabeth Lipovsky Kennedy and Madeline D. Davis' discussion of lesbian bars in Buffalo, New York in the 1930s and 1940s. These bars were important meeting places for lesbians, not only to find a lover but also to create networks with other women. The networks of women became powerful enough (and represented a large enough market) that many bar owners broke laws prohibiting the entrance of women into bars. These spaces facilitated the emergence of a lesbian politics and the meetings that began in the bars would later take place in homes.

Historical, geographical, political and social circumstances of the moment contribute to shape the gay culture of the time. Spaces and places accessible to the gay community change over time, highlighting the need to document a space that is serving the gay community. In Los Angeles, one such place is Le Barcito. In a fashion similar to the bars that Kennedy and Davis discuss, Le Barcito is a space to create networks. Through its holiday gatherings, political involvement and availability to the gay community, it mirrors the significant role of the bars of the 1930s and 1940s. There is, however, a large gap in time between the bars of the 1930s and the Le Barcito as well as a marked difference in the racial and gender make-up of the patrons. The similarities, however, do indicate that that there has been a market and need for LGBT bars across time in the LGBT community. The time periods, levels of tolerance and socio-historical conditions differ between white working class Buffalo in the 1940s and Latino Los Angeles at the end of the 20th century but there are enough commonalities to point to the significance of Le Barcito along an historical spectrum.

Gay Latino writers often recount their searches for their own spaces of leisure. Gil Cuadros' *City of God* (1994) is a collection of autobiographical essays about living as a gay individual in a Mexican family. In one instance Cuadros writes about travelling the freeway across Los Angeles to find a place where he could express his sexual identity. That place was West

Hollywood but there he was exoticized and manipulated by the white men that he desired. This parallels the oral histories cited by Horacio N. Roque Ramirez in *“That’s My Place!” Negotiating Racial, Sexual and Gender Politics in San Francisco’s Gay Latino Alliance, 1975-1983* where Jesus, one of the founders of the first gay Latino organizations, talks about his experiences in gay bars during the 1960s. He describes the excitement of visiting the Castro for the first time and then the feeling of being an outsider in the predominantly white bars. His nostalgia for his roots and the chance to be fully himself led Jesus to become one the founders of the first Gay Latino Alliance called GALA.

Although both men and women attend Le Barcito, by far the majority of patrons are gay Latino men. In discussing this group it is critical to acknowledge the work of Lionel Cantú Jr. In *Sexuality of Migration: Border Crossings and Mexican Immigrant Men* (2009), Cantú incorporates sexuality into studies of migration and thereby opens a discussion about gay Mexican men who reside in the United States. Many Mexican men face discrimination in their native country and they are driven out due to the hostile environment and lack of legal and cultural protections. Some seek asylum in the United States to escape homophobia and many fear that they will be subjected to hate crimes if they remain in Mexico. Most of the cases Cantu analyzes in this book are asylum cases. The struggles of gay Mexican men in Mexico and the United States are made evident through Cantú’s accounts. This book demonstrates how gay spaces for leisure are necessary by showing the hostility embedded in the Mexican culture, both in Mexico and across the border in the United States.

Horacio N. Roque Ramirez’s*“Mira, yo soy boricua y estoy aquí”: Rafa Negrón´s Pan Dulce and the Queer Sonic Latinaje of San Francisco* focuses on the short-lived bar, Pan Dulce, a gay Latino nightclub in San Francisco. Pan Dulce emerged from the lack of Latino bar spaces in the Castro. The space made itself known very quickly with its Latin beats and advertisements in

Spanish aimed at the Latino gay community. Unfortunately, Pan Dulce was only in business for eight months and few conclusions can be made about its impact. The greatest significance of Pan Dulce is that it existed at all, even if only for a brief moment. The histories of people who felt at home in the space help to solidify the need for spaces that provide comfort to gay Latino men.

Personal essays and recent scholarship clearly document the desire of gay Latino men to be able to express their sexuality outside of their home. Men tell about hiding their sexuality from their families and travelling to the nearest gay district to experience their sexuality. However, these spaces were not always inviting as they catered to the white gay community. Gil Cuadros writes that he allowed himself to experience the hostility of West Hollywood because even this was better than being gay in his home. Gil Cuadros and Jesus had different reasons for seeking gay Latino bars; while both tried to connect with their ethnic roots, they also came from different places and had different goals in mind. There is no one reason why people patronize these spaces; they are at gay Latino bars for various reasons. Moreover, not only do the music, prices, and patrons determine the level of ease patrons feel at the bar but as Cuadros and Jesus show, there is a comfort that contributes to this as well. It is necessary that individuals be able to express their identities openly in spaces of leisure. The significance of Le Barcito to gay Latino men is that they are able to experience their Latino roots as well as their sexual orientation simultaneously.

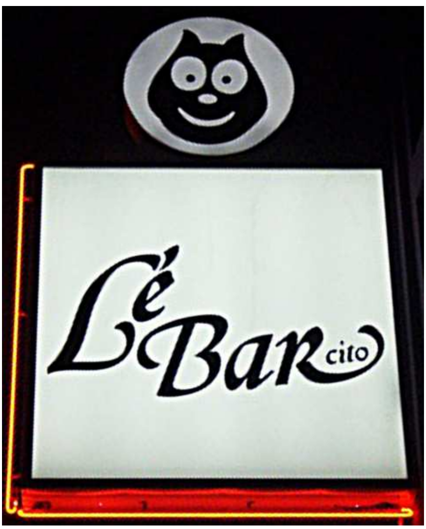
Methods

Four types of data were gathered for this project: archival materials, social histories of Los Angeles, interviews and ethnographic observations. The use of these methods allows for an understanding of the bar itself and shows how Le Barcito creates gay Latino space. This project took two years, with a break of six months. During this time I was able to present the work in progress at conferences. The length of time during which I observed allowed me to gain the trust of the community and staff at Le Barcito, especially as they saw the fruits of their contribution to the project discussed in academic settings. I spent time at Le Barcito as a participant observer. This allowed for the development of a holistic view of the space by extending the time spent talking with patrons, gaining a local history of Le Barcito and observing during typical days at the space. The various methods complement each other in telling the story of Le Barcito.

I interviewed staff, patrons and gay Latinos who are not comfortable at Le Barcito. For this particular paper, I conducted a series of four interviews. Based on availability, I was able to interview a Le Barcito regular, a gay Latino who grew up in the district but does not like Le Barcito, a bartender and the DJ. Although I am familiar with the rest of the staff and other regulars, I chose individuals who were the most comfortable and open to the idea of being interviewed. The interviews show how different gay Latinos are connected to the space, including differences among the patrons.

The fieldwork was done through participant observation, which was conducted over a period of one year and during a series of fifteen visits to the bar. I created a floor plan of the bar, which helped me to visualize and better understand what exists inside the space and how it is used. Moreover, the description of a typical visit to Le Barcito demonstrates the different ways the space is utilized throughout the night to support the gay Latino community. These facets further illustrate how Latinidad is formed through the use of language, drag show elements and the music. Based on staff behavior, décor, floor plan and legacy of the bar it is evident that this is a gay space. The ethnography underscores the fact that Le Barcito has been molded into a space that caters to gay Latinos.

I accessed archival information such as newspaper articles at the ONE Archive in Los Angeles. The information I gathered illustrated how Le Barcito developed and evolved over time. While the name changed, the legacy of the Black Cat Tavern (as it was known in the 1960s) continues to live on. From being at the forefront of the fight against gay oppression during the 1960s to the creation of the Sunset Junction Fair in the 1980s and later the deaths of many patrons from AIDS in the 1990s, this space holds an important place in the history of gay L.A. It also highlights how Le Barcito provides a space for community building for gay Latino men.



A Visit to Le Barcito

"Ya Sabes que la gallina es tuya con todo y huevos"
("You know that this hen is yours, with eggs and all")
-Maritza

Le Barcito has two bars, a main dance floor/stage, and a patio area. Since the space is small everyone is bound to see guests at multiple times throughout the night, facilitating the socializing and networking aspect of the bar. The stage set is designed as a hacienda, a large estate in Latin American during the colonial period, as its backdrop, creating a serene atmosphere.

Five dollar drinks, songs by Lucero, a popular 1980s Mexican singer, rhinestone covered gowns, Mexican cowboy attire and the scent of men's cologne in the air all contribute to the aesthetic of the legendary Le Barcito. Le Barcito is a bar that functions as a multipurpose space for the Latino gay community. A description of the physical aspects of the bar and of a typical visit to Le Barcito allows for an understanding of the space itself and how different groups within the Latino gay community interact.

The bar opens at six o'clock in the evening and it closes at two in the morning. Upon entering there is a security guard and Juan, the bouncer. The space is dim; however the decorations can be seen despite the darkness of the room. Every day a male mannequin stands beside the stage dressed in a different outfit according to the décor and theme of the bar, which changes regularly. The mannequin is athletically built and has a fair complexion; it stands as a reminder of the ideal male body and its costumes range from salsa dancer to ancient Greek. When Le Barcito opens its doors there are usually only a few customers, who tend to be older (over forty years old). Generally, the guests at the bar in the early hours of business go by themselves to have a drink after work (Luis, 3/31/09). As the hours pass and more guests (typically younger) begin to arrive, the crowd that gathers will dance until the drag show begins.

At eleven o'clock the show is ready to begin. The sound of the hostess' voice over the music is the cue for the guests to leave the dance floor and become spectators. Maritza, a transgender male to female individual who stands about six feet tall and has big brown eyes is the hostess at Le Barcito. Maritza opens the drag show by greeting the guests. Her fashion varies as she can wear a long gown one night and a revealing two-piece outfit the next. She embodies many of the characteristics of famous Latin American show hosts as she has the ability to appear familiar even to a stranger. Maritza is the most popular personality at Le Barcito and is the only performer that speaks directly to the audience.

Maritza can be a complex character to outsiders and it is important to have some background on Latino culture to appreciate her ability to invite everyone to laugh and to unite the group during the performance. Arguably one of the main characteristics in many Latino households is to joke about family members. Many Latinos are given nicknames, either as a result of their personalities, physical characteristics, or anecdotes that relate to them. This playful element is part of the act that Maritza performs before and in between the drag show performances at Le Barcito. She makes fun of guests, tells dirty jokes, and even flirts with audience members in order to make them laugh. Maritza parallels a Latin America variety show host in that she is quick spoken, loud, and charismatic.

Every night Maritza invites guests on stage and everyone has the opportunity to be a performer. If someone is celebrating a birthday, anniversary, farewell or any other occasion they are invited on stage between drag performances to share a drink with Maritza. The spotlight then shines brightly over the guest on stage. Another way in which everyone becomes a performer at Le Barcito occurs at the end of the drag show when the stage becomes the dance floor. The patrons are the last to perform, as they are the last to use the stage. This is also the moment that everyone at the bar begins to lip sync to their favorite songs.

Le Barcito distinguishes itself from other queer Latino bars through its drag show. Some drag performances maintain originality while imitating celebrities. Originality is exhibited in the way the performer interprets the movements, body and appearance of the original artist. The relationship between the performers and their audience is crucial to create the lively atmosphere of the bar. This connection is created through eye contact, gestures toward the audience and the audience’s feedback to the performer. Some of the artists who are imitated include famous strong female Latin American stars like Jenny Rivera, Paquita la del Barrio, Maricela, Paulina Rubio and Lucha Reyes. All of the performances are lip-synced and each performer, on average, performs two to three songs. On some occasions the performer will address social and political issues such as domestic violence during the performance. Usually the performances are done to popular songs from the 1980s-2000s. The costumes are form fitting and accentuate the curves of every performer. Often these costumes are remakes of dresses originally worn by the celebrities being imitated.

During the drag show regulars greet each other with a brief hug and kiss on the cheek. This is also a time to scope out the room for possible dancing partners, lovers or new acquaintances. The clientele at Le Barcito is composed mainly of gay Latinos, with the exception of a small group of patrons of other ethnicities. These patrons are generally Caucasian, African-American or Asian, and sometimes women find themselves at Le Barcito. The majority however are gay Latinos coming from different walks of life, with unique stories and different sexual identities. The guests come from all walks of life and have unique stories; many are sexiles, some are Chicanos, and often on the down low (Luis, 3/31/09).

Many of the male guests at Le Barcito wear attire that represents masculinity in the Latino community. Leather jackets, dress pants, button shirts, facial hair, short haircuts, cowboy hats and boots all contribute to the construction of popular Latino masculinity. There are also some femme men wearing tight jeans, fitted t-shirts, and contemporary haircuts. Drag, off the stage, is not as common as femme and masculine attire.

Shakina Nayfack was one of the people I interviewed during this research. He has been a regular of Le Barcito for seven years. He has conducted several performance art pieces in Le Barcito and is well known by the staff and the performers at the bar. Shakina has a complex identity having been born in Orange County in a Jewish household. He studied for years in Michoacan Mexico and is fluent in Mexican popular culture, Spanish and the transnational identity that is celebrated at Le Barcito.

Since the patrons at Le Barcito come from different backgrounds they are not united as one social unit. There tends to be different circles and groups. Some of the terms used to describe the different groups are *Las Locas* **(**the crazy ones**)** and *Las Fresas(*the preppy ones) (Nayfack 4/11/09). These groups are based mainly on attire and mannerisms (Nayfack 4/11/09) However, much of their differences are marked by their levels of assimilation to United States culture. As an example, the *Fresas* are known for wearing polo style shirts, speaking English and liking U.S. pop music. Patrons' occupations vary from college students to flower arrangers to teachers.

While having an understanding of the patrons is important there are also other elements of the bar that attract patrons into the bar. One example of this is the music. The music will set a mood and attract a particular crowd. DJ Humberto, who is a twenty-three year old, gay identified man, from Jalisco, Mexico, plays the music at Le Barcito every night (Humberto 12/16/08). He has lived in Los Angeles for the past four years. The songs played at Le Barcito range from Spanish rock, to cumbia and merengue, to pop and some *rancheras* (Spanish country music).

Le Barcito can be an exclusive space, meaning that many people step in and immediately walk out of the bar when they fail to understand the humor, the performance, the relationships or the identities that are expressed there. Although the drag show is in Spanish, it frequently relies on slang that is specific to those who understand the popular culture in Latin America. For example, jokes referring to famous soap operas that are televised throughout Latin America. Also, during the show, slang is used that refers to regional food, musicians and actors.

Community Building at Le Barcito

The gay Latino community tends to be marginalized in several ways. They are gay, which is one level of marginalization and they are also Latinos, which is part of an underrepresented group in the United States. Yet certain spaces tend to undercut some of the problems marginalization creates. Even though tensions among the Le Barcito patrons can occur, community building occurs as well and is reflected in several realms, including the spiritual, political, and sexual. Le Barcito is a space where individuals are able to experience their sexuality openly, gain political awareness, network and partake in holiday celebrations.

Le Barcito fosters community building in the political realm. The staff shows support and advocates a political stand. With the passage of Proposition 8 denying the rights of same-sex couples to marry, there has been much discussion about the rights of LGBT individuals. Le Barcito has supported the demonstrations in opposition to Prop 8 which took place on Sunset Boulevard. The bar was also involved in promoting the involvement of its patrons in advocating for gay marriage. Another way that Le Barcito is involved with political issues is during the drag show. On occasion, the shows are dedicated to issues such as domestic violence, suicide and AIDS awareness. These particular shows occur about once a month and are performed in Spanish; they are designed to inform patrons about issues that affect gay Latino men. Le Barcito clearly uses its resources and its outreach to communicate with its patrons about issues that impact the gay Latino community. Le Barcito provides a space where gay Latino men can become informed about legislation that affects them and assists them in understanding how they might seek help from government-run and nonprofit organizations if they or someone they know is facing an injustice.

In addition to the political messages and activities, social and spiritual activities also take place at Le Barcito. Holidays are significant times when families come together. One important aspect of Le Barcito is that the bar celebrates such holidays as New Years, Valentine’s Day, Easter, Day of the Dead, *quinceañeras*, anniversaries, Thanksgiving, Christmas and even Labor Day. These celebrations are often religious, but just as often they turn into secular events. Celebrating these holidays places Le Barcito in a spiritual realm of community building. During these special occasions there is a catered dinner before the drag show begins. Everyone who pays the fee is welcomed to be part of the dinner. After the drag show guests are welcomed to dance. Le Barcito builds community through a spiritual realm when it serves as a space to celebrate events, which may essentially be spiritual. In many ways this mirrors Alamillo's (2006) description of working class farm workers in Corona, CA who often created spectacles and forms of entertainment with the limited resources they had at their disposal. Considering that Le Barcito serves many purposes, it is able to become a space where people can experience different feelings with limited resources.

Le Barcito is also a social community builder in the sense that social refers to the interaction of humans; the bar is a space to openly interact with others. Gay Latinos often find both the gay community and the Latino community to be unwelcoming. One night as I conducted participant observation, I stood watching the drag show with my brother and I met a man who asked me who I was standing next to. I replied that it was my brother. The man sighed and said how he wished he could be open with his family about his sexuality. This man travelled from the other side of the city to Le Barcito because he did not want his family to know that he was frequenting these spaces.

Le Barcito allows for a greater degree of social interaction than a nightclub because it is open during the afternoons with a quiet environment. In addition, the drag show allows for interaction, as the sound levels are low. Given that the bar is a small space, people occasionally bump into each other and are able to see who is out in the crowd easily. In this type of setting people are more likely to socialize and interact. There are patrons that have been regulars at Le Barcito for years; these individuals are proof that the significance of the bar in the community goes beyond mere consumerism. There are many gay bars available on the same street and only blocks away from Le Barcito and although some of these cater to Gay Latinos, many of its patrons are loyal to this space because it provides much more than drinks and dancing. Le Barcito is a space to make friends, network, dance and date and perform identity; this is how it is able to be a social community builder.

Le Barcito attracts a varied clientele who need the space in different ways. For many individuals the bar acts as a sexual community building space. Stephan Likosky's *Coming Out: An Anthology of Gay and Lesbian Writings* (1992) contains two stories pertaining to sexiles, individuals who were forced out of their country of origin as a result of their sexuality. Two of the stories in *Coming Out* focus on Mexican gay men whose sexuality put their lives at risk, causing them to search outside of the country for help. Le Barcito openly welcomes LGBTQ individuals; it does this through flyers, which are distributed in Le Barcito, their website and social networking sites. Flyers are mostly in Spanish; they reflect the available deals and announce when a celebration will be taking place. These are aimed at people who may become patrons of Le Barcito. The fact that the flyers are in Spanish welcomes individuals who are Latinos. People who have to hide their sexual identity under other circumstances are able to express themselves at Le Barcito.

Future Research Directions

In several ways Le Barcito is able to serve as a space that brings the gay Latino community together; moreover, it is able to provide a safe haven for many gay Latinos. Le Barcito is able to function as a community builder in different spheres because it serves the individuals distinctively depending on their needs. That is, patrons take the resources that Le Barcito provides based on what they need. Whether it is spiritual, political, social or sexual knowledge the bar is available to serve its patrons.

Although this project characterizes Le Barcito as a community builder based on ethnographic, interviews and historical materials, there is further work to be done about the space. For example, research on Le Barcito might focus on transportation and demographics. Employing quantitative methods would allow the project to document the distances that patrons travel to arrive at Le Barcito and to record the method of travel used to reach Le Barcito. Also, documenting the demographics of patrons in attendance on different nights of the week on average would allow us to conceptualize the differences and similarities among the patrons. An analysis of these factors would allow for a more holistic understanding of Le Barcito and the effects it has on the gay Latino community over time.

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Surveillance, Exclusion and Social Control in Latino Communities: A Comparison of Latino Youth in Two California Communities

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Abstract

Framed within recent analyses of the Prison Industrial Complex, this comparative ethnographic study focuses on the experiences that Latino youth have with local law enforcement from June 2008 to August 2010 in two Southern California cities, Alameda Corridor City and State City. The analysis is based on preliminary findings guided by two questions: What are some of the policing practices that youth experience in their respective cities? How do youth respond to policing in their communities? Studies show that youth in disadvantaged communities, such as Alameda Corridor city, with high unemployment rates, cuts in social service programs, and a dysfunctional educational system, are disproportionately recipients of pro-active policing practices and misconduct (Miller, 2006, Jones-Brown, 2000). Further, the study suggests that youth of color who live in State City, a pristine and affluent city, known as an escape from the kinds of urban problems throughout the region, are also recipients of zealous policing tactics and, not surprisingly experience similar state violence and share a similar understanding of how they are viewed and treated by local law enforcement and state officials as potential candidates for prison.

Introduction

Youth of color are constantly adjusting to the new methods of domination that function to contain and control them through the use of local law enforcement whether they live in State City or Alameda Corridor City[1]. Thus, the Prison Industrial Complex (PIC) is a technology of domination that is directed towards racialized communities which works as a tool to maintain a racial caste system that is rooted in the premise upon which this country, the United States was founded – *white supremacy*. In this paper I examine how the PIC operates as a control apparatus using racism as a mode of motivation and local law enforcement as the practical tools to infiltrate and destroy the social-cultural production in communities of struggle[2]. Resistance with a *street logic*[3] is stigmatized by social control agents, such as police, probation officers, and other law enforcement officials who use the day-to-day actions by racialized youth to label them as violent, hoodlums, and gang members. The hyper-criminalization practiced by social control agents contributes to the expansion of the PIC. In California, as Ruth Wilson Gilmore explains in her book *The Golden Gulag*, the state has invested in twenty-three new prisons since 1984. This is a dramatic increase compared to the twelve prisons built between 1852 and 1964 (Gilmore 2007).

Within the years 1982-2000, the prisoner population increased about 500 percent despite the decline in crime rate since 1980. In California, Latinos and African Americans make up two-thirds of the state's prison population[4]. One explanation for the increase in

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[1] For confidentially purposes the participant names, name of the city, and name of institutions have been changed to protect the participants in this study.

[2] In this paper I define communities of struggle where racialized groups that have historically been marginalized and segregated and bounded to racial regimes.

[3] For the purposes of this paper, *street logic* refers to the situated knowledge of individuals that derives from a historical perspective base on their experience living in a hyper-criminalize society.

[4] To read more on high incarceration rates refer to *Search and Destroy* by Jerome Miller as well as *Race to Incarcerate* by Marc Mauer.

these numbers is the development of anti-gang legislation, punitive sanctions, and zealous policing tactics that are regular practices that construct and continue to reproduce and alter a unique relationship between people of color and established social control agents and social institutions in their community. It is important to learn how these measures are enacted. Indeed, it is only through the voices and experiences of individuals that we can begin to understand the dominant practices that have been directed at racialized youth in their community by local law enforcement entities (Giroux 2003).

This paper examines how Latino youth utilize their situated knowledge to navigate their neighborhood, to challenge and resist the different forms of state violence, such as excessive surveillance, unnecessary questioning and searches, racial profiling, verbal abuse, and the use of physical force that have become a control apparatus that correlates with the expansion of the Prison Industrial Complex and hyper-criminalization of youth of color. The narrative between the youth and law enforcement is important to evaluate as a method of measuring racism as we understand it using Gilmore's definition of racism as "state-sanctioned or extra legal production and exploration of group-differentiated vulnerability to premature death"(28). In addition, the study explores the extent to which interaction of youth with law enforcement differs in two very different cities in California.

Literature Review

Scholars suggest that "consistent findings of minority distrust and dissatisfaction with the police can best be understood with reference to the nature of policing in their communities, including their interpretations of their own experiences with the police" (Miller 2006). As we try to answer questions about the role of the state in reproducing racial inequality, examining the realities in communities can help us understand the experience of living under some of the repressive policies, such as the Violent Youth Predator

ACT, Proposition 21, enhancements, youth tried as adults in the criminal justice system, and the 3-strikes law that have contributed to the social, political and spatial relationship between youth of color and social control agencies[5]. These law-and-order policies have contributed to the "exacerbated criminalization and stringent punishment of Black and Latino inner city youth and have had a detrimental impact on their lives" (Rios 2006).

The hyper-criminalization of youth is explained, in part, by the shift towards more punitive sanctions, known as "get tough" legislation that unfairly targets youth of color. Being under constant surveillance and threatened with excessive punishments, youth tend to adopt "the code of the street" to cope in their environment. Whether they live in a rich or poor area, the "code of the street" allows youth to act tough, gain respect from others in their community, and survive in their neighborhood (Anderson 1999). However, the adoption of the "code of the street" also increases the vulnerability to surveillance, incarceration, violence, and death (Stewart 2006). Research has documented police behavior and the wide range of negative effects it imposes on minorities in disadvantaged communities, including methods of surveillance (Jones-Brown 2000) and police misconduct such as verbal abuse and excessive use of force. In *Imprisoning Communities*, Todd Clear highlights how "the growth of imprisonment has been concentrated among poor, minority males who live in impoverished neighborhoods," exacerbating social, economical, health, and political disparities already present due to environmental racism, deindustrialization, war on drugs, prison industrial complex, law and order policy, and zealous policing (Clear 2007).

Youth of color in Alameda Corridor City and State City have become victims of both state and street violence increasing their

[5] For a more comprehensive and detail understanding of policies refer to the scholarship of Victor Rios "Racial Politics" as well as *Lockdown America* by Christian Parenti.

likelihood of entering the prison pipeline, as a result of the hostile policing practices that they experience. Indeed, a project aimed to reduce crime, keep society safe, and ensure that any offender does not commit another crime constructed a power *bloc* that facilitated the growth of imprisonment in the United States and gave birth to the Prison Industrial Complex at the expense of people of color, whether they live in a wealthy or poor area. The persistent practices by local law enforcement in both cities have contributed to a unique relationship that youth of color have with established local law enforcement personal and social institutions in their community.

Methodology

This study uses a qualitative ethnographic approach to provide insight into the actual social practices and experiences of young Latino males who live in State City and Alameda Corridor City. To ensure validity, I only discuss preliminary themes and cases that exemplify recurring patterns in the scenes that I participated in and in the voices of the youth. All of the youth who volunteered to speak about the social inequalities and modes of resistance that they have developed in their neighborhoods were guaranteed strict confidentiality. The project consisted of in-depth interviews with twenty Latino youth between the ages of 15-22 years of age—ten from Alameda Corridor City that were recruited from a local community center and ten from State City recruited from a local continuation school.

During the time that I was conducting the study all twenty youth reported numerous interactions with law enforcement. These numerous interactions are part of the reason why some of the youth I met were either on formal or informal probation, in detention camps or juvenile hall facilities, sentenced to county jail and/or had been arrested several times before reaching the age of 18. Because I began the study with some understanding of what youth experience in their community, I was able to gain their trust and to develop a sense of solidarity with my respondents (Gold 1985). Together we experienced different forms of state violence perpetrated by local law enforcement officials, including getting stopped and questioned. This happened in a variety of different settings, including outside the local library, community center, restaurant, park, liquor store, and elsewhere in their community. These experiences allowed me to develop an insider's perspective and a deeper understanding of the subjectivity, oppression, repression, and discrimination youth of color experience due to the hostility that local law enforcement bring to their community on a daily bases. Thus, one-on-one in-depth interviews and field observations permitted me to comprehend the modes of resistance youth of color use to challenge and resist police misconduct, from knowing what to say when the police approach, to knowing which direction to walk to avoid police harassment, a practice of survival that I term "Neighborhood Tactics" in order to navigate safely in their communities.

State City

As I walk down the streets of the Southside neighborhood in State City, I see some of the latest model automobiles driving up the hill, a hill which is known as the residential area where the "rich white people live"[6]. The hill is only five minutes away from the Latino community in State City—a community where youth of color resist various forms of state violence enacted by law enforcement agents. State City is known as a tourist attraction in southern California as well as a place to own a summer vacation home. The *median value of owner-occupied housing units* average around $500,000, about twice as much as the average for the state of California (US Census 2010). The *median household income* averages about $48,000 and the city has a low poverty rate of 13.4% (US Census). However, just recently State City

[6] This knowledge is based on the youth that live in the community and understand the different dynamics within their community.

experienced a gang raid named “Gator Roll” that made the front page in the local newspaper.

Despite State City’s romanticized image as a pristine and affluent city with wonderful beaches and nice hiking trails, and an escape from the kinds of urban problems throughout the region, the city witnessed the hyper criminalization of over thirty people during the gang raid. On October 15, 2008, *The Sound,* a local newspaper, reported that more than four hundred law enforcement officers raided and terrorized multiple homes in a predominantly Latino neighborhood. Agents from eighteen local, state, and federal agencies participated in the early morning raid of over fifty homes where children of all ages, grandparents, parents, and youth were confronted with assault rifles and forced on the ground. One youth describes how police broke into his house: “yeah man they took over my house they looked like robots. They even had my grandmother on the floor.” Another youth explains that during the raid, “they were pointing the gun at my six year old sibling like if he was going to do something, he is only a child.” *The Sound* reported that the day after the gang raid the police chief of State City commented at a news conference, “We sent a message to the city of [name of city]; we will spare nothing to come and get you.”

Alameda Corridor City

Turning now to Alameda Corridor, a place that can be seen as the complete opposite of State City: here, *30% of the population lives below poverty*, a figure almost twice as high as the percentage for the State City (US Census). The *median household income* averages $32,000, falling below California’s household average income (US Census). The property values in the Alameda Corridor averages $132,000 dollars, reflecting the *asset stripping* that Dr Clyde Woods talks about in his influential study *Development Arrested: Race, Power and the Blues in the*

Mississippi Delta[7]. Alameda Corridor is a city that is typically portrayed in the media as a low-income community with more crime scenes then beautiful scenes, especially when compared to State City.

On May 6, 2009, the *Alameda Corridor City Bulletin*, a local newspaper, also reported on a raid conducted on a local Latino gang in Alameda Corridor City. One can observe within a few minutes of exploring Alameda Corridor City a series of abandoned land lots and dumping areas. These abandoned spaces were once occupied by homes. There are also a great number of old-dilapidated buildings where many Black and migrant Latino families live. These sights are common throughout the entire city that is burdened by high unemployment rates, cuts in social service programs, a dysfunctional educational system, and a heavy police presence fond of militant tactics that terrorize the community and create a hostile environment.

Once again, early one morning Latino families were terrorized by a police presence that included an inter-agency task force consisting of the FBI, a city Station Special Assignment team, Narcotics Bureau, state parole and probation departments and other agencies such as the County Intra-Agency Metropolitan Police Apprehension Crime Task Force (recognized as a law enforcement agency dedicated to the investigation of major crimes and serious felons). About twenty individuals were arrested during the raid making it "overall, a very successful operation," as one FBI spokesperson stated.

[7] In *Development Arrested,* Black studies scholar Clyde Woods provides an historical analysis of how the Black community in the Mississippi Delta suffered politically, economically and socially prior to Reconstruction which he refers to as *asset stripping.*

Results: Youth Observations

"Fuck tha police, Comin straight from the underground, Young nigga got it bad cuz I'm brown, And not the other color so police think, They have the authority to kill a minority."
NWA, "Fuck The Police."

Ramon is one of the many youth that I met over the course of the study who from an early age was able to describe the excessive surveillance tactics that police practice in their community. An eighteen year-old Latino youth who grew up in Alameda Corridor City has developed unique strategies that allow him to resist police misconduct and produce an understanding about the role of the state in his community. One afternoon after Ramon and I had finished an interview at the local community center we started walking towards his home. As we walk he begins to explain to me the role of local law enforcement in his community, "cops around here you know they are always on the hunt." As we continue walking ironically we see two police cars doing their regular patrols down the street at 5 miles per hour.

In State City I met Carlos. Carlos is just one of the many native youth of State City that provided a counter narrative to how life in State City tends to be imagined and described. I approach Carlos one early evening as part of my weekly visits to the neighborhood where he grew up. Carlos is an eighteen-year-old Chicano, born and raised in State City. He is an exceptional individual, an "organic intellectual," who has cultivated extraordinary strategies to navigate his neighborhood and to resist law enforcement behavior. His life experiences as a native-born resident produces and reproduces dominant knowledge of the implications of living in State City as a youth of color. As we stand at the corner we both notice that there is a police car parked across the street. With his tremendous community knowledge and awareness of how things "go down" in his neighborhood, he explains the role of the police in his neighborhood:

> "Cops over here, on Casa Blanca Street, they park right there, turn off their lights and just kick back and watch us at the corner and if they see fools gathering up, they'll call more cops and they'll record us, take pictures and shit. If it's night time, they'll just shine their lights on us for the longest time."

Carlos and Ramon are individuals who, from an early age, learned how to draw a bold line that separates them from local law enforcement. Both law enforcement agents and the youth learn each other's behavior through the extensive informal and formal interactions they have with one another on the streets. The youth view themselves as standing on the victimized and oppressed side of the imaginary line between them and law enforcement. On the side of power they see the agents of law enforcement —able to control and constantly observe every action that Carlos and Ramon take. Indeed, the youth have developed strategies, such as "neighborhood tactics," to challenge and resist state violence and authority, and navigate their community more freely. Youth of color in socially and demographically distinct neighborhoods experience similar racial profiling tactics executed by local law enforcements as part of the PIC apparatus. Youth internalized the everyday experiences of constantly being under surveillance and living in a punitive society.

Informal Interactions: "They're just trying to get rid of us. Just trying to lock everyone up so we'll never be on the streets again and the community can feel safe."

Once again, I am with Carlos in State City, this time we are outside the local library with other homies. As usual, to show respect I "shake down" with everyone who is there. The library is another "hang out" for the youth. Carlos explains that he and his crew sometimes hang out in the library to avoid the police from stopping, questioning, searching, and/or taking pictures of them.

Usually, if they see a police car driving down the streets of their neighborhood some of the youth relocate inside the library, or hang out by the library until the police leave the area. They imagine their neighborhood as a battlefield defined by state violence in their community.

As Carlos and I talk outside the library, a police car approaches us from behind. We notice it parking right in front of us. Two police officers get out of the car and slowly approach us. To avoid any contact with the police, the youth rapidly began to deploy the "neighborhood tactics" they have developed. Some of the youth start walking away, looking for different places to relocate. Some leave to a local park, while others simply cross the street. Those who stay use silence as a way to resist any interaction with the police. Aware of how the police tend to question them, Carlos remains quiet until the police leave the area. Carlos and the two police officers know each other very well from numerous informal interactions. He tells me that he sees them at least once a day, and that they always do the same thing: they either pull over and start asking them questions or try to take pictures.

After experiencing several informal interactions with Carlos and other homies in State City, I share some of the experiences with some of the youth from Alameda Corridor City. Ramon explains to me that the experiences of Alameda Corridor City youth are very similar to the ones Carlos and his homies experience in State City. He insists that cops are just waiting for the opportunity to approach someone, but despite the over criminalization and harassment that Carlos and Ramon experience through the informal interactions with law enforcement, Ramon expresses the sentiment that police are still needed in the community:

> "If there were no cops everyone would be killing each other like a motherfucker I wouldn't even be

> here I would be dead, but the way they act with us sometimes makes it more dangerous."

He understands that law enforcement agents are supposed to protect, serve, and maintain peace between individuals in the community. However, he disagrees with the policing tactics they deploy in order to "protect and serve" the community. His intensive community knowledge highlights the risky, disorganized, and hostile environment that local law enforcement brings to their community in addition to the disinvestment in racialized communities that create poverty and perpetuate violence in historically aggrieved communities.

The Normalization of Police Misconduct: "The cops are here to protect and serve, but all they do is fuck with us"

Despite living in two very different cities, one rich and one poor, youth from State City and Alameda Corridor City have similar ways of understanding the police misconduct they experience. Juan, a seventeen-year-old Latino youth who lives in State City, explains to me how he tried to exercise his rights as a way to fight back against police harassment:

> "They say that they (police) know what our rights are, but they don't give us our rights, we have the right to walk away if we didn't do anything, but they don't give us our rights, they don't have the right to search us if we're not on probation, but they still do, they try to make us look stupid, even though we know our rights, they don't give a fuck."

This is but one of the many examples of the ways police approach, question and search him while he was out in his neighborhood. Because of the many informal interactions that Juan has experienced with the police (despite the fact that he is not on probation) he, like many other youth, has been singled out as someone who must be contained and controlled.

Whether they live thirty minutes away from a millionaire or ten minutes away, youth's privacy and right to be outside are taken away. For instance, Robert a seventeen-year-old Latino youth from Alameda Corridor City, told me about a time when he was riding his bike through his neighborhood. When police called him over to question him as usual, Robert daringly decided to avoid them without thinking about the consequences of his action:

> "Police beat me up in the alley cause I had run the last time I saw him. I remember he said I'm going to get you he was mad I had run and the next time he saw me I got caught up in the alley and got beat up and then he said I told you I was going to get you."

The obviously reoccurring and potentially dangerous encounters with police have caused Robert to develop "neighborhood tactics" over time. These tactics are strategically utilized to avoid and escape any sort of interaction with authority figures. Robert and his friends are aware of the militant police tactics that terrorize his neighborhood, tactics that create a hostile environment not only for him but for other members of the community as well. Despite youth's desperate efforts to remain safe and unharmed, due to the numerous negative interactions they experience with the police, youth are forced to learn how to navigate their community at an early age as a way to resist the different levels of dehumanization and victimization inflicted by state violence.

Discussion

The preliminary findings presented in this paper were gathered from the testimonies collected when congregating on the streets of State City with Carlos and other youth, as well as in Alameda Corridor City, with Ramon and a few other youth. Latino youth, whether they live in rich or poor cities, constantly find themselves fighting a long and seemingly endless battle against stigma, violence, and surveillance, and seeking to develop new ways to resist oppression, repression, and exclusion. The reoccurring social patterns of negative interaction with police, involving unnecessary searches, excessive surveillance, and mistreatment have led youth in both cities to normalize the experience of police brutality in their community. Despite the fact that they have internalized these imposed roles, they continue to resist by developing "neighborhood tactics" to challenge the control mechanism that are implemented by the state.

Further research is necessary to understand what it means to grow up in community of color that experiences a high level of surveillance. The articulation of a grounded theory will be framed as a way to understand how communities of struggle experience criminalization leading to social disparities that youth of color inherit. The goal of this research has been to contextualize two Latino youth groups that reside in distinct social contexts during a regime of hyper-criminalization and zealous surveillance. Understanding the macro structural issues that make youth vulnerable to the daily youth-police violence provides insight to other scholars who are attempting to identify viable policies and programs that would prove beneficial to communities of struggle that historically have been criminalized.

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The Impact on Volunteers' Perceptions of People with Intellectual Disabilities through Purposive Non-profit Intervention

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Research on the effectiveness of organizations that work with people with intellectual and developmental disabilities vary. Some scholars argue that these organizations segregate, isolate, exclude, and further divide people with intellectual disabilities from the broader community (Snow, 2007-09). Others assert that these organizations promote relationships between people with and without intellectual disabilities (Hartnett et al., 2008). Historically, stigmatized labels such as mentally "retarded" or "handicapped" devalued those individuals. In response, the term "people with intellectual disabilities" was developed in response to the organized efforts of mental health professionals and family members of people so labeled to end the negative connotation of those labels and to humanize those diagnosed with disabilities. Despite these label changes, there is still a lack of acceptance in mainstream society. This research report focuses on one organization, Best Buddies International, which tries to foster greater interaction between people with and without intellectual disabilities and to enhance understanding through the sharing of interests and friendships. Specifically, the study examines the change in attitude and perception of student-volunteers of Best Buddies at the University of California, Santa Barbara, towards people with intellectual and developmental disabilities. Through the survey data and interviews, this report shows the ways Best Buddies affects volunteers and seemingly makes social change through a sense of inclusion and understanding.

Introduction

Sociological studies of deviance often follow the initial writings of Howard Becker (1963) in claiming that organizations that work with people with intellectual and developmental disability segregate, isolate, exclude, and divide people with intellectual disabilities from the broader community (Becker, 1963; Snow, 2007-2009; Taylor and Bogdan, 1989). Since the 1960s, interest has developed in how to transform stigmatized perceptions of people with intellectual disabilities. This research report focuses on the impact of working with the organization, Best Buddies International, on the perceptions and feelings of student volunteers from the University of California, Santa Barbara.

Best Buddies' mission is to foster greater interaction between people with and without intellectual disabilities. Its central assumption is that people will become more educated and understanding through the sharing of interests and friendships. This study concentrates on the student volunteers themselves and on how their attitudes towards and perceptions of people with intellectual disabilities have or have not changed because of their participation in Best Buddies. In examining the ways in which change has occurred for the students, this research seeks also to analyze the process through which negative labeling of those once labeled "mentally retarded" has changed.

Literature Review

As related in Snow (2009), one in five Americans has a disability, making the disabled America's largest minority group (p. 1). Being categorized or labeled as persons having intellectual disabilities results "because they differ from a culturally defined idea of 'normal' intellectual functioning" (Beart *et al.*, 2005). Beart, Hardy, and Buchan explain that this label is usually given by a professional working in the social services, and it is likely to stay with those with intellectual disabilities throughout their lifetime (2005), becoming a way they come to understand themselves. This identity becomes one's primary identity, over-riding identities such as gender, race, and religion (Beart *et al.*, 2005). Though the labeling process is socially constructed, labels determine the way people perceive and treat others (Gill and Maynard, 1995). Over many decades, the labels used for people with disabilities have been negative and offensive and have had the effect of lowering self-esteem.

Studies on the attitudes and behaviors of people without intellectual disabilities have shown that they have negative perceptions of people with intellectual disabilities (Beart *et al.*, 2005). Throughout history, going back as far as ancient Egypt and Sparta, a state council of inspectors would throw an infant off the cliff if they suspected a child was 'defective' (Gaad, 2004). By the second century AD, people with intellectual disabilities were often sold to members of the privileged class for entertainment. "All of the early religious leaders, Jesus, Buddha, Mohammed and Confucius, advocated humane treatment for the 'mentally retarded', 'developmentally disabled' or 'infirm'" (Gaad, 2004). Modernist beliefs and practices of charity and care for the less fortunate built on these early conceptions (Gaad, 2004).

Attitudes and behaviors of people without intellectual disabilities about those with intellectual disabilities typically derive from stereotypes. More powerful groups use labels as a tool to define how less powerful groups are identified and treated.

> "…social groups create deviance by making the rules whose infraction constitutes deviance, and by applying those rules to particular people and labeling them as outsiders. From this point of view, deviance is not a quality of the act the person commits, but rather a consequence of the application of others of rules and sanctions to an

> ‘offender.’ The deviant is one to whom that label has successfully been applied; deviant behavior is behavior that people so label” (Becker 1963).

As Taylor and Bogdan note, this perspective suggests that, “institutions and organizations designed to treat or care for people with mental retardation create or reinforce behavior that further distances people with mental retardation from the broader community” (1989). In the case of the education and care of those labeled with an intellectual disability, the process of labeling may cause a wider divide between employees and the participants with disabilities and cause staff members to stereotype that community.

People with intellectual disabilities have been discriminated against as a result of the stigma attached to this identity. However, in recent years, the term ‘mental retardation’ has been replaced by ‘intellectual disabilities’ in published research, journal titles, policies, organization names and organizations’ mission statements (Shalock *et al.,* 2007). Although ‘mental retardation’ and ‘intellectual disabilities’ are synonymous, the American Association of Mental Retardation (AAMR), now called, the American Association on Intellectual and Developmental Disabilities (AAIDD), changed the term in 2007 in order to reflect a change of vision. According to the AAID, the word changed from ‘mental retardation’ to ‘intellectual disability’ for a number of reasons:

> “(1) it is less offensive to persons with disabilities, (2) it is more consistent with internationally used technology, (3) it emphasizes the sense that intellectual disability is no longer considered an absolute, invariable trait of a person, (4) it aligns with current professional practices that focus on providing supports tailored to individuals to enhance their functioning within particular environments, (5) it opens the way to understand

> and pursuing ‘disability identity,’ including such principles as self-worth, subjective well being, pride, engagement in political action, and more” (“FAQ on Intellectual…”).

Although the name change is a progressive move away from the stigmatized label ‘mental retardation,’ those in the field concur that more work needs to be done to provide a sense of inclusion into society for people with intellectual disabilities.

Currently, there is a widespread acceptance and support “for raising youngsters with intellectual disabilities at home and having them participate in a variety of activities as part of community integration, rather than placement in institutional settings” (Gaad, 2004). According to Taylor and Bogdan, having a voluntary friendship with a person with intellectual disabilities is a process in which the person essentially becomes “delabled” (1989). They found that people who identified as friends of people with disabilities often point at what they have in common and focus on their positive qualities rather than their disabilities.

A sociology of acceptance perspective points to the processes by which individuals and groups who might be termed as deviant come to be accepted into a society or a community. The process of acceptance seems to occur through effective and emphatic friendships and an understanding of one another (Taylor and Bogdan, 1989). This research seeks to understand the process through which a stigmatized label is transformed through interaction and friendship. It examines the impact on volunteers of an organization whose purpose is to promote acceptance through effective and emphatic friendships.

The Organization "Best Buddies"

Founded by Anthony Kennedy Shriver in 1989, "Best Buddies is a nonprofit 501(c)(3) organization establishing a global volunteer movement that creates opportunities for one-to-one friendships, integrated employment and leadership development for people with intellectual and developmental disabilities (IDD)." Best Buddies now has over 1,500 chapters in middle schools, high schools, and colleges around the world. The programs engage participants from each state in the United States, as well as 50 countries around the world. According to its website, it has touched the lives of almost 700,000 individuals with and without disabilities worldwide (bestbuddies.org).

At the University of California, Santa Barbara in 2010, there were 61 college buddies, of which 7 were officers of the organization. Typically, each college buddy is paired with a person with intellectual or developmental disability from the community. Those with intellectual and development disabilities learn about Best Buddies through other programs such as Path Point, a nonprofit organization that seeks to "empower people with disabilities or disadvantages to live and work as valued members of our communities" (pathpoint.org), and through Special Olympics, a nonprofit organization that provide sports training and athletic competitions for people with intellectual disabilities. College buddies are undergraduate students who volunteer their time and commit to contacting their buddy once a week through phone calls, text messaging, and electronic mail and by hanging out with them twice a month, of which one of the times is a group activity for all participants.

Methods

This research focuses on participants in a local chapter of a national organization that works towards inclusion into society of people with intellectual and developmental disabilities. The author chose to examine Best Buddies International because she was a participant in the organization and had prior knowledge about it. Through researching volunteer perception of the effectiveness of the organization, the study aims to demonstrate the impact of the organization on the student volunteers. The paper seeks to explore how organizations such as Best Buddies that work with people with intellectual or developmental disabilities narrow the divide between people with and without intellectual disabilities and foster inclusion of all.

To begin the research process, the researcher spoke with the 2009 California Director of Best Buddies International, an acquaintance of the researcher. The questions for the director were designed to elicit his perception of the history of the change in terminology in the organizational mission statement, from the label "mental retardation" to the label "people with intellectual disabilities." Additionally, the organization's director was asked to comment about the steps the organization takes to fulfill its mission.

To chart the impact of the organization, a short survey of nine questions was distributed to volunteers of the University of California, Santa Barbara Best Buddies Chapter. Volunteers are students, age 18-23, recruited through friends, emails, fliers, student affairs announcements, and family. Surveys were given to the chapter director for distribution to the participants. The surveys attempt to find out volunteers' perceptions of people with intellectual disabilities before they joined the program and how they have changed over time.

Nineteen volunteers completed the survey. Six out of 19 survey participants were willing to be interviewed for this research project, and four of the 6 were available for the interview. For confidentiality purposes, pseudonyms were given to each participant. The interviews allowed participants to expand on their thoughts about their own and others' perceptions of people with intellectual disabilities as well as reflect on their participation in Best Buddies. The interview participants include: Blake, 22; Nick, 19; Alyson, 19; and Kelly, 20. At the time of the study, Blake had been involved in Best Buddies since his first year at the University of California, Santa Barbara and was on the leadership team for the chapter. Nick joined Best Buddies during his sophomore year in college; Alyson, a second year student, and Kelly, a third year, were members of the organization since their first year. All 4 participants report that they found their time with Best Buddies very rewarding and enjoyable.

The data obtained through these methods provides insight into the effectiveness of the organization in positively changing the perception of student-volunteers, ultimately advancing towards inclusion of people with intellectual disabilities into mainstream society. This study demonstrates that the negativity and stigma attached to labels such as "mentally retarded" can be changed, and points to the importance of relabeling in order to humanize this community.

Survey Data Analysis

Best Buddies, University of California, Santa Barbara Chapter, recruits for volunteers in a variety of ways, among which are campus activities fairs, email listserves, and word of mouth. Twelve of the nineteen (63 percent) study participants heard about the program from a friend. Many of the college buddies are also friends outside of the organization, so they hang out with their best buddies together. According to Karen, "having another friend in the organization makes it less intimidating to show up to the group events, since the organization is so big and has so many people in it." Sixty-three percent of survey participants noted that they became interested in Best Buddies because they thought it would be a rewarding experience. Three volunteers have family members with intellectual or developmental disabilities that they do not get to see often, and as a result, they joined Best Buddies to have those interactions and relationships and to give back to the community.

The organization strives to foster understanding and inclusion through the activities and events the student leaders organize. Nearly all volunteers claim to have been affected by the organization in the way that they interact with, look at, and think about people with intellectual disabilities. Many have taken this friendship to another level to become active in the community in helping to change the perception of others of people with intellectual disabilities and how they are treated in society.

A common theme from the survey results was that volunteers have become more compassionate and understanding of people with intellectual disabilities and the daily challenges they face from society. Best Buddies has given the volunteers opportunities to see that people with intellectual disabilities are just like themselves. Two participants stated that they now see and understand that people with intellectual disabilities have more talents and capabilities than they originally expected. Another responded that they now see people with intellectual disabilities for the person and not the ability. Four volunteers have noticed that those with intellectual disabilities are not as different as people without intellectual disabilities and that everyone has similar needs and desires, and one survey participant "realized that these people are active in the community and want to contribute. They have dreams and aspirations, and deserve to pursue them just like everybody else." Another participant stated,

> "I didn't really know much about how people with intellectual disabilities acted at all. I just knew that they were different from me. Now I am aware that there are different types of intellectual disabilities and that they are different just like anybody else."

Being involved in the organization has helped participants to understand the struggles that those with disabilities face on a daily basis.

Seven volunteers did not have a relationship or any interaction with a person with intellectual or developmental disabilities before joining Best Buddies. When asked what they believed other people's misconceptions were of people with intellectual disabilities, the volunteers listed the following characteristics: "incapable of taking care of themselves," "stupid," "they cannot understand everyday things about life," "intimidating," "harmful," "dependent on others," and "undeserving." Volunteers believe that other people's misconception stem from an out of sight, out of mind mentality. One noted that "Many people are not very understanding because they do not know anyone with an intellectual disability." The volunteers believe that other people's perceptions of people with intellectual disabilities are due to the lack of communication and interaction they have with that community. Social groups are often judged by stereotypes. Without meaningful interactions with people from that specific group, understanding of that community is not accomplished.

Volunteers received comments from their buddies that allow them to realize that their buddies are aware of their own disabilities and that they are affected by the way society treats them. Two comments from volunteers stand out: One reported that her buddy "talked to me about how differently she is treated and how people think they can be taken advantage of, but she won't let them," and another volunteer received a text from a best buddy, stating, "I hate myself because of my disability."

Because having interactions with people with intellectual and developmental disabilities is still unacceptable to many people, Best Buddies and other similar organizations try to close the gap between people with and without disabilities. Every survey participant reported that it is important for Best Buddies to exist because it brings people with intellectual disabilities into the community and gives them more of an opportunity to make friends and socialize. One participant believes that "it changes people's opinions of people with intellectual disabilities." Another participant believes:

> "The program is spectacular and should be in every high school and college. It opens the eyes of 'normal' individuals to the lives of the buddies and that they are just like us. It makes you compassionate and is so rewording. It's great for the buddies to learn to socialize and enjoy friendships and activities with people they normally would not."

Interview Data Analysis

The material from the four interviews is consistent with and supplements the findings of the short survey. Each interviewee describes in greater detail how their understandings of the stigma of 'mental retardation' and their perceptions of people with intellectually disabilities have changed. While their experiences differ, each volunteer comes to a more complex view of their experiences and an appreciation of the organization, Best Buddies.

The first interview participant, Blake, is a graduating senior who has been with the same buddy, Craig, for the past four years. Both Blake and Craig enjoy activities such as playing the guitar, playing bocce ball, watching scary movies, and hanging out with friends. Before Best Buddies, Blake did not have a friend with an intellectual disability. He states, "It was always seen as something taboo to approach someone with a disability, even to ask them their name." At his elementary school, all the kids with special needs were segregated from all the "mainstream" kids, "they learned in different classrooms, they ate at different times, they played on their own designated playground, “there was (sic) never really any opportunities for us to get to know someone with an intellectual disability.”

When asked how he felt the first time he was going to meet his buddy, Blake responded that he was nervous and that he did not know what to expect. This was partly because he was young and that he never had any interactions with a person with intellectual disabilities. After playing ice breakers at the first Best Buddies event, Blake said he felt more comfortable and even forgot that he was around people with intellectual disabilities. He learned that his buddy was very friendly and he was impressed that his buddy was able to remember people’s names so well, especially because Blake is bad at remembering names. When asked whether or not he uses the r-word (retarded) and whether or not he speaks up when he hears others use it, Blake responded,

> “I used to use it to describe things that are dumb or people who were acting immature. After joining Best Buddies, I was more conscious about the words I was throwing around so freely and wanted to be more considerate about other people’s feelings. Now, when I hear other people use it, I tell them the history of the word and explain to them that it’s not nice and that it’s hurtful.”

As a leader of the organization, Blake has helped to put on an awareness campaign called “Spread the Word to End the Word” where they got over 300 students’ signature in one day, to pledge to stop saying the r-word. Blake is a clear example of how Best Buddies helps to make its volunteers more considerate and understanding of a person with intellectual disabilities.

Unlike Blake, Nick is only in his second year in college. He found out about the organization while he was walking down the Arbor, a section on the university campus where student organizations publicize their events or their programs. He thought that it would be a great way to give back to the community and that this program seemed different from all the other sorority and fraternities that were out there advertising their organizations. At the first event, Nick was very excited to meet his new buddy. He had never had a friend with an intellectual disability, he has "only seen them around in public areas such as the supermarket, theme parks, and sometimes walking the streets in [his] neighborhood." He never thought to approach anyone with an intellectual disability to ask him or her to be friends and he does not know the reason as to why he did not.

When asked about his current buddy, Nick responded that they were the "perfect match." He and Matt both enjoy many things together, such as playing video games, going to the theaters, and going bowling; each has a fascination for airplanes, and enjoy drinking Blenders. Matt has taught him "how to be a kid again and to have fun doing everything [he] does." Matt is a swimmer in Special Olympics and works at Alpha, whose mission is to "empower individuals with developmental disabilities, supports families and fosters a community that values the contribution of all people" (alphasb.org). Matt has taught Nick that people with intellectual disabilities "have dreams and aspirations just like I do; that they are capable of doing things that I am; that they can work and support themselves; and that they hold relationships too." Nick said that when he sees Matt and his girlfriend Dana together, it makes him very happy and gives him hope for a relationship like theirs. When asked whether or not he uses the r-word (retarded) and whether or not he speaks up when he hears others use it, Nick responded, "Yes, I used to use the r-word a lot, but after being a part of Best Buddies, I refrain from using it. Sometimes, it will slip out and I will have to catch myself, but I am more conscious about that term now." He also said,

> "Most of my friends are in Best Buddies as well, so I do not really hear the r-word as often anymore;

> sometimes, someone I don’t know will say it, and there have been times where I’ve stood up and spoke out about it and other times, I let it slide, but more times than not, I say something because I know how hurtful the word can be.”

Nick pledged to end the r-word and plans to help in the campaign next year.

Blake and Nick did not have direct personal contact or relationships with persons with intellectual disabilities prior to college. Alyson’s experience is different. She is a second year student who has been involved in Best Buddies since her first year at UCSB and was also involved in Best Buddies in high school. Alyson has a younger sister who is autistic, so she joined Best Buddies in high school because she wanted her little sister and her best buddy to be friends too; she decided to join it in college because she does not get to see her sister as often and she “loves working and hanging out with them.”

When Alyson first met her buddy in college, she thought it was going to be someone in college and her age; however, the age did not make a difference in the way Alyson treated her. Alyson spoke very highly of Julie, 36 years of age, commenting on her accomplishments as a Special Olympics silver medalist in swimming, her volunteer work at her cousin’s elementary school, and the way Julie expresses her enjoyment working at the Arlington Theater. Julie taught Alyson that, “anyone and everyone can give back to the community, no matter their capabilities or skills.” When asked whether or not she uses the r-word and whether or not she speaks up when she hears others use it, Alyson responded that she never used the word in her life. She said,

> “I get really offended when people use that word because then I think to myself, ‘they’re making fun of my little sister,’ even though I know they’re not.

> The word is just very hurtful not to only myself, but my little sister and other buddies that I've heard express their hate for when people use that word."

Alyson invites Julie to hang out with her college friends over the weekends and she has noticed that her friends have not said the r-word as often because they are exposed to someone with an intellectual disability. She hopes that more people will join Best Buddies so that they will understand the implications of using that word or making fun of people with intellectual disabilities.

The last interviewee is Kelly, a third year who has been involved in Best Buddies since her first year. After her friend had joined and told her about the fun activities, Kelly decided to try it out during the winter quarter. Kelly stated, "out of all the organizations that I am involved in, Best Buddies is definitely the most meaningful and has taught me the most; it has taught me life lessons and has taught me not to judge a person by the way they look or the way they are labeled." She expressed that she was wary about the organization when her friend, Amanda, was telling her about it, but she "stepped out of her comfort zone and gave it a shot."

Kelly never had a friend with an intellectual disability. She recalls a moment in middle school when there was a kid named Princess, who chased all the boys who poked fun of her during lunch and remembers laughing and thinking it was funny. However, Kelly now feels terrible that she did not help stand up for Princess or to make the boys leave her alone; instead, Kelly felt that "[she] was not helping the situation by laughing and seemingly encouraging the boys to continue to treat Princess like an animal." She felt that if she could go back in time, she would back Princess up and make the boys realize what they were doing is dehumanizing. Kelly also felt that having a program like Best Buddies in their middle school would have probably made those boys more conscious about the things they were doing and situations like the one she remembers would never have occurred. Kelly's buddy, Brooke, is a very independent woman. She expressed that she always felt that "people with disabilities were incapable of doing things on their own and that they live a very dull life." She continues, "But I was wrong. Being involved in this organization and learning about the life of Brooke has showed me that they are capable of doing everyday, normal things. Yes, they may need help in some aspects of their life, but don't we all?" Brooke has shown her that people with intellectual disabilities have minds of their own, capable of forming their own opinions, contrary to what she previously believed. Kelly shared,

> "Brooke told me a few times where she was upset by the way people treated her and the way people would stare at her, when she would walk into a room. This would make me cry, but now, it only makes the both of us stronger. I have helped Brooke to stand up for herself and this gave me the courage to speak out to people when they say or do something hurtful to people with intellectual disabilities."

Kelly currently works at PathPoint, training people with intellectual and developmental disabilities to be employees, helping to build their resume and teaching skill-training courses. She hopes that one day, people with intellectual and developmental disabilities would not be seen as different; she believes that there needs to be more organizations like Best Buddies to change people's views like it has for her.

Conclusion

The data gathered for this research hints at the importance of quality support for programs that allow people without intellectual disabilities to have interactions with people with intellectual disabilities. Fostering such relationships helps those with disabilities to better integrate into the community and those without disabilities to be understanding; it also gives them the opportunity to be a friend to someone they otherwise would not have. The survey and interview results are testaments to the effectiveness of an organization like Best Buddies in helping people who do not have any contact with others with an intellectual disability understand and be more compassionate towards people with intellectual disabilities. Through emphatic friendships and understanding of one another, in a society where people with intellectual disabilities are treated differently, the stigmatization of people with intellectual disabilities can certainly lessen appreciably and social change can occur.

Since this study focused on one organization whose express purpose was to decrease stigma, much is left to learn about these processes. Negative labeling of persons with intellectual disabilities continues as does similar processes of devaluation and humiliation of others identified as different, such as gender nonconforming persons (Pascoe, 2005). Recent research suggests the need for structural and cultural changes through educational programs, community dialogue, and legislative mandate in order to foster both individual and collective change at a more pervasive level.

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Ronald E. McNair was born on October 12, 1950, in Lake City, South Carolina. Son of an auto mechanic and a high school teacher, McNair attended the local high school, graduating as class valedictorian. He went on to earn a bachelor's degree, magna cum laude, in Physics, from North Carolina A & T University in 1971 where he was named a Ford Foundation Fellow and a Presidential Scholar. McNair met a goal that he had set in high school to complete his PhD within 10 years. Five years after graduating from college, he received his doctorate in Physics from M.I.T.

Nationally recognized for his work in laser physics and the recipient of numerous fellowships, honorary degrees, and commendations, Dr. McNair was also a sixth degree black belt in karate and an accomplished saxophonist. In 1978, while working at the Hughes Research Laboratory, he was selected for the NASA space program. He was the second African American to fly in space. On January 28, 1986, Dr. McNair, along with 6 other astronauts, died when the space shuttle Challenger crashed exploded and crashed into the ocean moments after lift-off.

After Dr. McNair's death, Congress provided funding for the Ronald E. McNair Scholarship program dedicated to preserving Dr. McNair's legacy of scholarship and achievements and to encouraging participants to pursue their academic and professional goals.