

RACE, GENDER, AND THE PRISONER'S DILEMMA:
A STUDY IN SOCIAL DILEMMA COOPERATION

By

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A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

2007

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To Kelli, for always being right and always being on my side

ACKNOWLEDGMENTS

I would foremost like to acknowledge my parents, Hugo and Patricia C. Romano, for their unwavering love, faith, and support. Acknowledgments are also due to Dr. Hernán Vera and Dr. Tanya Koropecjy-Cox for always being generous with their time and encouragement. The guidance and mentorship they have provided me over the years means more than they know. Lastly, I would like to acknowledge my wife and proofreader, Kelli Romano, for always reading anything at anytime. For her patience and care, I am forever grateful.

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Abstract of Dissertation Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Doctor of Philosophy

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December 2007

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Major: Sociology

Understanding the intricacies of social dilemmas in general and the Prisoner's Dilemma in particular is important due to the myriad of social issues that are manifestations of such dilemmas. Macro and micro issues ranging from global warming and nuclear arms treaties to recycling and gun ownership are at their crux, social dilemmas—situations where individual interests are in opposition to and contend with the interests of a larger social unit. Despite the importance of social dilemma cooperation in a world that is becoming increasingly interdependent as a result of globalization, there is a dearth of research examining the influence of race on intra- and inter-group cooperation.

To identify if there is a link between race, gender, and levels of cooperation, trust, and expectations of a partner in social dilemmas, this study utilizes quantitative and open-ended data collected from undergraduate college students attending a major public university in the southeastern United States. Drawing on the theoretical perspectives of games theory, race relations, and gender studies, this study examines the relationship between race, gender and the decision of an individual to either cooperate or defect in a monetary Prisoner's Dilemma game. By placing participants in same-race and same-gender pairs as well as cross-race pairs the study

shows that Black females have significantly higher same-race group cooperation rates than do White females, and that Blacks have significantly higher overall cooperation rates than do Whites. The study also shows that cross-race pairs have higher rates of cooperation than do exclusively White pairs, and that religiosity is positively correlated with cooperation.

The reasons given for social dilemma cooperation and defection by different racial and gender groups were also explored. It was found that though reasons for cooperation and defection were mostly similar across groups, minority group members were more likely to take their racial and gender group status into consideration when making game decisions. Additionally, it was also found that Blacks were more likely to view game decisions from a moral perspective and as a reflection of individual character than were Whites.

CHAPTER 1 INTRODUCTION

In an era of global conflicts, nuclear proliferation, global diseases, and environmental destruction and deterioration, the need to understand the macro and micro dynamics of racial and gender cooperation is paramount. It is not an exaggeration to suggest that the survival of the human species depends largely on our ability to cooperate with people who we see as different from ourselves. Moreover, what Marx (1862) refers to as “the social productive power,” which arises from cooperation, is both society’s best tool for the betterment of humankind and as with exploitation, patriarchy, sexism and racism, the foundation of amongst the most oppressive of social conditions (361). According to Marx, “the essence of simple cooperation remains simultaneity of action, a simultaneity whose results can never be attained by the temporal succession of the activities of the individual workers” (1862:215). In other words, many people working together can achieve what one alone cannot. Cooperation, as utilized in this study, refers to an individual’s decision to attempt to act in solidarity with another person to achieve a mutually beneficial outcome, instead of acting in competition.

In the social world, reasons for cooperation among individuals include economic conceptions such as self-interest, reciprocity, obligation, and necessity. Yet, not all forms of cooperation can be explained by economic theories of rational choice, which posit that individuals are rational, self-interested, economic human beings (Hu & Liu 2003). Ideas such as altruism and loyalty often cause individuals to act against their own so-called rational economic interests in favor of pursuing the interests of others. Volunteerism, philanthropy, and community activism are a few examples of individuals altruistically contributing to the welfare of others at their own expense. Furthermore, conceptions of altruistic cooperation can extend beyond individuals to groups (including racial, gender and religious groups) and nation-states. In this,

cooperation is not merely as Marx stated, “the general form on which all social arrangements for increasing the productivity of social labour are based,” but also a means of demonstrating solidarity and empathy toward other group members (Marx 1862:209).

One of the largest stumbling blocks to cooperation, however, is the proclivity of humans to defect (work against one another) in what are called social dilemmas. Social dilemmas “are situations in which (a) [defection] yields the person the best payoff in at least one configuration of choices made by others; (b) [defection] has a negative impact on the interests of other persons involved; (c) the collective choice of [defection] results in a deficient outcome, that is, a result that is less preferred by all persons than the result which would have occurred if all had [cooperated] instead of [defected]” (Liebrand 1986:113-14). Simply stated, a social dilemma is at its essence a situation that pits individual gain against the greater good of the dyad, group, society, and/or humankind.

Among the most studied social dilemmas is the game Prisoner’s Dilemma (Simpson 2003). Bearing in mind that games — with strategies, rules, and often winners — are a universal social activity, “game theorists analyze human behavior by arguing that many situations can be seen as manifestations of one or other quite simple game” (Wallace & Wolf 1999:322). The Prisoner’s Dilemma is likely the most popular game of games theory; its popularity is largely due to the inevitable dreadfulness of its most frequent outcome (Wallace & Wolf 1999). The premise of the game is that two prisoners who have committed a crime together are under arrest and unable to communicate with each other. In order to force a confession the interrogator offers each prisoner, separately, the following deal:

1. If you confess and your companion does not, he will be sentenced to nine years in prison and you will be let off scot-free.

2. If your companion confesses and you do not, you will be sentenced to nine years in prison and he will be let off scot-free.
3. If you both confess, you will each be sentenced to five years in prison.
4. If neither of you confess you will each be sentenced to two years in prison.

More often than not, both prisoners end up confessing (defecting) and must each serve five-year sentences. The possibility of getting off scot-free, coupled with the fear of being imprisoned for nine years, persuades the prisoners to choose the third worst individual sentence and the worst of all in terms of total number of years' imprisonment for both prisoners combined. "The paradox that makes the Prisoner's Dilemma so intriguing is that both prisoners end up defecting even though they both know they would be better-off cooperating" (Wallace & Wolf 1999:323).

Comprehending the intricacies of social dilemmas in general and the Prisoner's Dilemma in particular is of critical societal importance due to the large number of social issues that can be seen as manifestations of such dilemmas. As Barash (2004) notes, macro social issues such as global warming, water shortages, abuse of public lands, public versus private transportation, and even the Kyoto Treaty can be viewed through the theoretical framework of the Prisoner's Dilemma. Additional social issues in which the Prisoner's Dilemma framework can be applied include recycling, home upkeep, gun control, blood donation, littering, and even micro-level social issues such as reciprocity in everyday exchanges between neighbors (Yamagishi & Cook 1993; Macy & Skovoretz 1998). Considering the myriad of issues that are at their crux social dilemmas, understanding the factors that contribute to or hinder cooperation is of critical importance because—as in all of the above mentioned social dilemmas—when defection becomes the rule, everyone loses.

It is also for this reason that understanding the gender and to a larger extent the racial dynamics that influence group cooperation and defection is important. As Kaplan and Kaplan (2006) eloquently describe:

In real life, times of visible change—when populations increase, resources decline or new spoils become available for distribution—create conditions where the slightest germ of mistrust can rapidly generate a prisoner’s dilemma. Protestant and Catholic, Serb and Croat, Hutu and Tutsi; two populations in one space can find, even without any great prior enmity between them, that the outcomes of life’s game are suddenly realigning. The majority in a mixed population may still believe that peace and cooperation are best, but if a sufficiently large minority come to think that its interests are served only by the victory of its own tribe or creed, then this rapidly becomes a self-fulfilling assumption. You fear your neighbor might burn down your house; will you wait until he comes with his shadowy friends and their blazing brands? No, best call *your* friends, best find matches and fuel... Civil society rapidly curdles: individuals lose the chance to choose for themselves. Even the brave who stand up for peace lose everything, betrayed by their fellow prisoners.

With the above scenario in mind, it is surprising that the particular effect of race and culture on cooperation is an area of inquiry that has been largely neglected by past studies that employed the Prisoner’s Dilemma. Since different racial and gender groups place different types and levels of expectations on their members, racial and gender considerations of group loyalty, obligations, trust, and solidarity can complicate the individual rational choice process of choosing social dilemma cooperation and defection. Furthermore, if social dilemma cooperation or defection levels are higher among certain societal groups (as my research shows they are), what factor(s) can this difference be attributed to? This is a question that qualitative and theoretical Prisoner’s Dilemma research on race, gender, and their intersectionality can help to answer, and which I will explore further in this dissertation.

Specific Aims

To identify if there is a link between race, gender, and levels of cooperation, trust, and expectations of a partner in social dilemmas, I collected and analyzed data from college students

attending a major university in the southeastern United States. The goal of the research was to examine if and how race and gender are correlated to levels of cooperation, trust and expectations of a partner through the use of the theoretical framework of games theory and the social dilemma game Prisoner's Dilemma.

Above all, the specific aims of this study were to: (1) determine if Black¹ college students, as members of a subordinated group, are more likely to cooperate in a social dilemma than are White college students who are members of the dominant group; (2) determine if female college students are more likely to cooperate with each other in a social dilemma than are male college students; and (3) to explore the reasons and rationale given by respondents for cooperation or defection. By creating a monetary variant of the Prisoner's Dilemma game for the participants of this study, I examined the role of race and gender in participants' decision to cooperate or defect. I found that Black females have significantly higher same-race group cooperation rates than do White females, and that Blacks have significantly higher overall cooperation rates than do Whites. The study also shows that cross-race pairs have higher rates of cooperation than do exclusively White pairs and that religiosity is positively correlated with cooperation. Drawing on works such as Axelrod's (1984) *The Evolution of Cooperation* and Gilligan's (1982) *In a Different Voice*, this study contributes to our knowledge of games theory, social dilemma theory, social psychological theory, rational-choice theory, symbolic interaction theory, as well as the fields of racial and ethnic relations and gender studies. Finally, this study strives to provide insight into the ways in which men and women reason and cooperate and how race may influence these processes.

¹ I employ the racial classifications Black and White rather than ethnic classifications of African American and Caucasian in acknowledgement of the diverse origins of my sample population. Additionally, the use of the racial

Major Research Questions

Though many scholars have employed Carol Gilligan's (1982) work on differences in the moral development of women and men as the foundation from which to project differences in cooperation in the Prisoner's Dilemma (including Stockard, van de Kragt & Dodge 1988; Brown & Taylor 2000), inconsistent results and contradictory findings suggest that the question of whether gender is associated with cooperation in the Prisoner's Dilemma and other social dilemmas remains unanswered (Ledyard 1995). Additionally, the role played by race in an actor's decision to cooperate or defect has been largely absent from the research literature and needs to be further explored. In this study, I examine the relationship between race, gender, and the tendency of an individual to either cooperate or defect by analyzing decisions made by same-race and same-gender pairs of participants, as well as cross-race pairs of participants in a monetary Prisoner's Dilemma game. As a student specializing in racial relations, I was surprised at the lack of Prisoner's Dilemma studies employing race as a variable and exploring the effect of race, gender, and their intersectionality on social dilemma cooperation. My knowledge of groups led me to believe that racial and gender group membership (each with their own varying expectations of group loyalty and obligation) would influence participants to be more cooperative when paired with a member of their same race and gender group. Additionally, I felt that minority group status would result in greater dyad solidarity and thus a higher probability of social dilemma cooperation. These views, buttressed by social theory led me to my particular research questions, which are:

1. Is there a correlation between race and likelihood of cooperation in a social dilemma?

term "Black" places emphasis on race as referring to the physical, phenotypic, and visible differences that are given social significance in American society. When discussing the research of others, however, I keep with the racial classifications they employed.

2. Is there a correlation between sameness of gender and likelihood of cooperation in a social dilemma?
3. What are the reasons and rationale given by participants for choosing to cooperate or defect?
4. Do levels of trust and expectations of a game partner's decision differ between race and gender groups?

To explore these questions, Chapter 2 reviews the relevant previous Prisoner's Dilemma research and discusses the theoretical support for varying levels of cooperation among different racial and gender groups. Based on the theoretical perspectives discussed in Chapter 2, Chapter 3 describes the design and methodological underpinnings of the experiment and poses five hypotheses. Chapter 4 specifies and discusses the study's quantitative results, which yield support for the claim that Blacks are more likely to cooperate in social dilemmas than are Whites. Chapter 5 examines the validity of the experiment design and then specifies and discusses the open-ended questionnaire results, which describe distinctions in the ways the various race and gender groups rationalize their game decisions. Chapter 6 comes to a conclusion and provides suggestions for future research.

CHAPTER 2 LITERATURE REVIEW

The literature on the Prisoner's Dilemma is astonishingly extensive and varied. Researchers in the fields of sociology, psychology, economics, political science, criminology, mathematics, biology, zoology, and others have used various versions of the Prisoner's Dilemma to study a plethora of issues. One intriguing example of the breadth of research conducted incorporating the Prisoner's Dilemma included using functional magnetic resonance imaging to scan the brain of women playing the Prisoner's Dilemma to gain insight into the decision making process by looking at what brain regions were activated during game play (Spinney 2004). Others have used the Prisoner's Dilemma to explain why certain foraging animals share food without any overt aggression (Dubois & Giraldeau 2003) or how an attractive experimenter or game partner affects a participant's decision on whether or not to defect (Morse, Reis, Gruzen & Wolff 1974). There is even a Prisoner's Dilemma world-championship competition in which researchers from many disciplines submit computer programs to a repetitive version of the Prisoner's Dilemma in a round-robin tournament (Axelrod 1980). Interestingly, the most successful strategy, tit-for-tat², is also one of the simplest (Axelrod 1980).

Though both the variation and uses that the Prisoner's Dilemma has undergone are exhaustive, the Prisoner's Dilemma literature most relevant to this study can be grouped into two manageable categories. The first category, Race, is exceedingly small and contains research on how race correlates with cooperation/defection in Prisoner's Dilemma games. The second and larger category, Gender, contains research addressing how gender correlates with cooperation/defection in the Prisoner's Dilemma. Below is a brief overview of the Race and

² The tit-for-tat strategy in the Prisoner's Dilemma game consists of a player cooperating on their first move and then copying the previous round's cooperation/defection decision of their opponent for the duration of the game.

Gender categories each followed by a discussion of the theoretical foundations for predicting variance in cooperation rates between racial/gender groups.

Race and Cooperation

The research literature on how race affects cooperation in the Prisoner's Dilemma is miniscule. Early research on race and the Prisoner's Dilemma shows that participants demonstrate higher rates of cooperation when they play against a member of the same racial group (Sibley, Senn & Epanchin 1968; Wilson & Kayatani 1968; Baxter 1973). Furthermore, Cederblom and Diers (1970) showed a tendency among White students to behave in a less cooperative manner toward cooperative Black game partner confederates³ than toward cooperative White game partner confederates. Additionally, Cederblom and Dies showed that Whites were more cooperative toward Black confederates who at first displayed competitiveness and later cooperated, versus Black confederates who mostly cooperated throughout the game play. These findings were taken by the researchers to mean that Black assertiveness is both understandable and necessary in order to affect institutional change.

In a later study of 42 same-sex pairs of eighth-grade students of varied (Black and White) racial composition, Downing and Bothwell (1979) discovered that females of either race tended to cooperate in same-race pairs and to compete in mixed-race pairs. They also found that White males tended to cooperate and Black males to compete independent of their partner's race. Owens' (1998) designed a study "to explore several facets of cross-racial interactions of young male African Americans and Caucasian Americans," finding evidence that for both African Americans and Caucasian Americans cooperation was in certain cases correlated with the participant's respective stage of racial identity development as measured by Racial Identity Scale

³ I use the term confederate to refer to a participant's game partner who was (unbeknownst to the participant) hired by the researcher and typically employed a predetermined ratio of cooperation and defection responses.

(RIAS) or White Racial Attitude Identity Scale (WRIAS) (1988:2488). Although Owens' study provides interesting insight into psychological aspects of cross-racial cooperation, it does not measure or compare same-race group cooperation rates, which is one of the aims of this present study.

More recently, Heider and Skowronski (2007) found that in two 50-shot⁴ Prisoner's Dilemma games (designed based on procedures adapted from Baxter [1973]) Caucasian participants unexpectedly cooperated at a higher rate when presented with a computer image and name of an African American partner ($M = 51.8\%$) than when presented with a computer image and name of a Caucasian partner ($M = 48.4\%$). They also found that measures of racial attitude such as the Implicit Association Test (IAT) and the Pro-Black subscale of the Pro-Black/Anti-Black Attitudes Questionnaire (PAAQ) predicted social behaviors of Caucasian participants toward African American targets. In the following section, I offer a critique of past studies and highlight some of their limitations and weaknesses.

Critique of Race and Prisoner's Dilemma Literature

A major problem with many of the past studies using the Prisoner's Dilemma to measure racial attitudes and cooperation rates is the use of exclusively White participants. In doing so, studies such as Baxter's (1973), Cederblom and Diers' (1970) and Heider and Skowronski's (2007) privilege the views and decisions of Whites over those of Blacks. Moreover by recruiting only White participants, these studies provide no insight into Black same-race and cross-race cooperation.

Another problem with past studies is the exclusive use of multi-shot games. Minkler and Miceli (2004) have noted that by employing a one-shot game version of Prisoner's Dilemma, rather than a multi-shot game version, you can assure that any resulting cooperation or defection

does not come from reputation or punishment effects associated with repeated games. Additionally, the one-shot version employed by this study protects against players cooperating or defecting as the result of a refined strategy developed over multiple plays. In terms of validity and generalizability, a one-shot game may also prove more similar to social dilemmas encountered by people on a daily basis. The decision of an individual to litter, cut in front of a line, or use an express lane of a supermarket with more than the maximum allowed items is a decision that is typically made without consideration to past or future decisions in the same social dilemma-style situation. Also, the law of diminishing marginal utility suggests that a participant will place more significance on a one-shot Prisoner's Dilemma decision, than on, for example, the 47th-shot decision of a Prisoner's Dilemma game. This suggestion is supported by the work of Clark and Sefton (2001) who found that the most important variable influencing cooperation in sequential multi-shot Prisoner's Dilemma games is the first-mover's choice. Their study yields support for the argument that cooperative behavior in multi-shot social dilemmas reflects reciprocation rather than unconditional altruism. Moreover, they found their cooperation in Prisoner's Dilemma games decreases with repetition. Hence, single-shot Prisoner's Dilemma games are also better barometers of altruistic behavior than are multi-shot games.

As will become evident in the Methods Chapter (3), I seek to address these deficiencies of past research in this area. In the next section, I will explore some of the theoretical foundations for possible differences in cooperation rates between different racial groups in a social dilemma, as well as the theoretical foundations for no variation by racial groups in a social dilemma.

⁴ The word "shot" refers to how many iterations of the game were played.

Theorizing Racial Cooperation

Though much has been written on the rationale behind actors' decisions to cooperate or defect in social dilemmas, the possible influence of race on these decisions is a topic that has not yet been thoroughly explored. While race is a fluid and ever-changing social construct that should no longer be used as a system of classification in either the biological or social sciences, it is a concept that is nevertheless accepted as a real and meaningful distinction by most Americans (Vera & Gordon 2003a). W.I. Thomas (1931) noted that, "situations that are defined as real, are real in their consequences," hence, since most Americans define race and racial groups as real, being categorized into a particular racial group has multitude of real consequences for an individual that will affect their life outcomes and perspectives (145). This study seeks to examine what influence, if any, racial group membership has on a participant's decision to cooperate or defect with another participant of either the same or a different racial group. For this purpose, the study employs Feagin and Feagin's (2002) definition of a racial group as "a social group that persons inside or outside the group have decided is important to single out as inferior or superior, typically on the basis of real or alleged physical characteristics subjectively selected" (7). Despite the paucity of research in this area, there is a sufficient theoretical basis to suggest that racial group affiliation may influence a participant's decision to cooperate or defect in a social dilemma.

Theoretical Basis for Greater Black Cooperation

I begin with the hypothesis⁵ that Black pairs will have higher same-race group cooperation rates than White pairs (referred to later as hypothesis 1). This hypothesis is grounded in several historical and sociopolitical considerations, the most important of which is

⁵ All hypotheses are formally presented in Chapter 4 (page 45).

the Black subjugation and response to White racism. White racism as defined by Feagin, Vera, and Batur (2001) can be viewed as the “socially organized set of practices, attitudes, and ideas that deny blacks and other people of color the privileges, dignity, opportunities, freedoms, and rewards that this nation offers to White Americans” (17).

As Simmel (1955) noted in his classic work *Conflict and the Web of Group Affiliations*, threats to a group (such as White racism) have the function of increasing group solidarity and causing group members to transcend individual interests in favor of the moral imperative to defend the group. As the level of violence against a group escalates, so does the group’s internal solidarity. Assensoh (2000) sums up this view, stating “nothing is known to bind and promote both collaboration and cooperation more than years and shared experience of fighting common and easily identifiable enemies” (115). Examples of this increased solidarity and intra-group cooperation among Blacks reacting to the social dilemma of White racism can be found in the work of McAdams (1995) and Chong (1991). Both scholars note that various forms of social protest employed by Blacks during the civil rights movement (such as demonstrations, sit-ins and boycotts) were all extremely costly to the individuals who participated in them, though it was known to all that any gains made by the protesters would benefit all Blacks in the community whether they participated or not.

To explain this phenomenon, Chong contends that social incentives such as increased social standing and avoidance of ridicule and ostracism for not participating worked as the impetus for participation in social protests among small social groups like Black Churches. Though social incentives also influence racial groups other than Black Americans, America’s racist past has provided Black Americans (compared to White Americans) much more motivation to sacrifice individual gain for the good of the community. I contend that the Black

history of subjugation to slavery, Jim Crowism, and the continuing racial discrimination faced by Blacks today, has created a culture of cooperation among Blacks that is rooted in what Dawson (1994) argues is a collective historical memory of racial oppression and sense of shared racial fate. He writes, “[T]he collective memory of the African American community continued to transmit from generation to generation a sense that race was the defining interest in the individual’s life and that the well-being of blacks individually and as a group could be secured only by social and political agitation... [that memory] has been reinforced historically” (Dawson 1994:58). Since individual participation in “social and political agitation” can itself be viewed as a social dilemma situation, it is reasonable to suggest that this collective memory may also increase intra-group cooperation among Blacks. This outcome is also supported by what McCormick and Franklin (2000) have called the inclusionary dilemma, “a dialectical process wherein emergent racial consciousness on the part of African Americans can be seen as response to the racial impediments that African Americans encounter as they attempt to gain access to the economic, social, and political opportunity structure of the larger society” (330).

In contrast to Blacks, Whites have no equivocal long-standing historical memory of oppression and racism in the United States (Rodgers 2000). Moreover, in a nation where Whiteness is taken to be the norm and therefore becomes invisible, it is no surprise that Blacks tend to be more conscious and aware of their racial group status than are Whites (Doane 2003). What past research has failed to examine is whether or not that awareness will translate into increased racial group cooperation in social dilemmas.

Theoretical Basis for Greater Cross-Racial Group Defection

In addition to the obvious and very pressing problems of racism, prejudice, and discrimination that plague American society and that may manifest themselves as increased

defection in a cross-racial pairing during a social dilemma game, there is also significant historical and sociological support for greater cross-racial group defection between Black and White actors (referred to later as hypothesis 5). American labor history has an array of examples where when faced with a social dilemma, White workers chose defection (and its benefits) over cooperation with Blacks and/or other minority groups (Feagin 2000). Though cooperation by White workers would have significantly increased the likelihood of higher wages for all workers White and Black, defection maintained what Du Bois (1935) and later Feagin (2001) describe as “the psychological wage of whiteness” (Du Bois:700; Feagin:27).

The psychological wage of whiteness as presented by Feagin (2001) is a complicit support for a White dominated racially hierarchical society in which working class Whites receive superior privileges, opportunities and cultural resources than do minorities, at the cost of lower wages from the White elites who employ both. In other words, White workers choose the benefits of being White, over “the greater economic wages they might have had if they had joined in strong organizations with black workers” (Feagin 2001:30). Historical examples of this social dilemma can be found at numerous times in American history: in *Iron Cages*, Takaki, (2000) recounts how the 1870’s strike by *The Secret Order of the Knights of Crispin*, an all-White labor union founded in 1867, failed because of the importation of Chinese laborers to replace the White union members. By excluding minorities from their labor union and workplace, white laborers did not improve their bargaining position, but detrimentally undermined it. By the time the Crispins tried to recruit Chinese workers into their union it was too late; the strike would soon end with the union having lost (Takaki 2000:239-40). In this example, racial stratification was the primary stratification because it “decentered class oppression in the thinking and orientation of most White workers” (Feagin 2001:31). This

emphasis on race was of course the paramount goal of the White industrial elite who wanted White workers to buy into a racist ideology and its psychological wages, so as to divert attention from the fact that these elites were exploiting both White and Black workers (Feagin 2001).

Labor movements, however, are not alone in their choices to exclude minority participation in favor of psychological wages and privilege. The U.S. women's rights movement of the late 19th century "dismissed the concerns of black women and developed segregated interests and organizations" (Feagin 2000:31). Instead of working for the betterment of women of all racial groups, this movement's negation of minority women's issues undermined its objective of equality, fair pay and women's rights. Though since the civil rights movement, the psychological wage of Whiteness and White privilege have become less de jure and overt, they nevertheless still exist, albeit in more de facto and hidden forms (Feagin 2000; Bonilla-Silva 2003). The existence of both the psychological wage of Whiteness and of White privilege may make Whites more likely to cooperate with each other and less likely to cooperate with Blacks in a social dilemma.

Also relevant to the hypothesis that there will be greater cross-racial group defection in a social dilemma is the statistical theory of discrimination, which posits "that people use race as a proxy to evaluate others by assuming in the absence of more specific information that the person has the average qualities of her race" (McAdams 1995:1021). Considering that negative stereotypes of Blacks are broadcast to American television and movie viewers on a daily basis, it would not be surprising to find that in our highly segregated society, many White people reify these stereotypes and take them to be true, therefore making them less likely to cooperate with a Black person about whom little is known (Hacker 1995).

Conversely, among White dyads facing a social dilemma, what Vera and Gordon (2003a) have identified as sincere fictions of the white self may lead to increased cooperation (15). Sincere fictions of the white self are “deliberately constructed images of what it means to be white” (Vera & Gordon 2003a:15). Many television programs and films are “sincere” fictions in so far as “they are rooted in the self-concept that we seldom examine, that we take for granted” (Vera & Gordon 2003a:16). In other words, these fictions are embraced without considering real or potential alternatives to them. The “white self” is the “concept of white Americans proposed by white American moviemakers,” who present Whites as morally and intellectually superior persons who are “powerful, brave, cordial, kind, firm, good-looking, generous [and] natural born leaders” (Vera & Gordon 2003b:114). Since people define themselves in relation to others and considering that many Whites internalize these sincere fictions as true, it would not be surprising to see Whites more likely to cooperate with one another in a social dilemma, than with a Black person. As social science research continues to show, “groups matter... people have a loyalty to groups that goes beyond what serves their narrow pecuniary self-interest” (McAdams 1995:1084).

Alternative Theoretical Arguments: Against Differing Cooperation Levels

Despite the theoretical and historical support for differing levels of social dilemma cooperation by race, there is also theoretical support to the contrary. The argument for different levels of cooperation hinges on a group interest versus individual interest argument. Simply put, for reasons described above, group interest is more likely to affect the social decision making process in favor of cooperation for Blacks than it is for Whites. That being said, it is difficult to create experimental designs in which pairs of participants take racial-group identity and

allegiance into consideration without overtly or covertly revealing to them that their decisions will be compared to that of participants from different racial groups.

As McAdams (1995) reports, in same-race pairs in which participants know they are being compared to pairs of another racial group, the proxy effect encourages cooperation since participants may speculate that they will be evaluated in pairs and thus go for the best pair outcome — cooperation. Furthermore, Blacks may experience a stronger desire than Whites to achieve the best pair outcome in order to combat racial stereotypes and racist theories of inferiority. Not revealing that they are being compared to other racial groups protects against this bias, however, it also poses the risk that racial-group interest will not be seen as relevant to the decision making process. It is for this reason that the social location of the study and its participants is of critical importance. Factors such as age, education, income, geographic location, and experiences of racism can all influence the extent to which group interest is seen as important or relevant to the decision to cooperate/defect. The role of social desirability should also not be discounted. Participants desire to be perceived by both their game partner and the researcher as good, nice, and non-racist people may also increase their likelihood of cooperation.

Another theoretical consideration that could negate any racial-group differences is the idea that White racism is also a form of cooperation. So while I have proposed that Blacks are more likely to have higher cooperation rates as a result of responding to White racism, one could contend that Whites have forged an identity and cooperative spirit based on centuries of practicing white racism in both its de jure and de facto forms.

Also pertinent is what critical theorist Derrick Bell (1980) calls the Interest-Convergence Hypothesis. According to Bell, “whites support the cause of equality and justice for blacks *only* when it is in *their interest* to do so” (Bell 1980: 252). In a social dilemma such as the Prisoner’s

Dilemma, White participants could easily see it as in their best interest to cooperate with Black participants for a mutually beneficial outcome. If this is the case, then different levels of cooperation will be unlikely.

Finally, theoretical support against lower cross-racial group cooperation levels and larger cross-racial group defection rates can be found in Wilson's (1978) declining significance of race argument. In his classic work *The Declining Significance of Race*, Wilson contends that in the modern industrial period, Black subordination and social advancement are more associated with economic class, than with race. Following this argument, cooperation/defection in a social dilemma could be more closely associated with class status than with race, and any measures of cooperation should closely control for the class status of the participants.

One final concept that is germane to the issue of social dilemma cooperation/defection is that of White racism as societal waste. Feagin (2001) notes that the tremendous amount of talent, energy, and resources that are spent in perpetuating White privilege are an extravagant waste that ultimately benefit no one and which have the potential to destroy society. Similarly, individual and mutual defection in a social dilemma ultimately results in a waste of resources that in the long term benefits no one.

In the plethora of social issues that can be viewed through the lens of a social dilemma, when defection becomes the rule, everyone loses. It is for this reason that understanding if and why different racial groups are more likely to defect or cooperate is important.

Gender and Cooperation

In contrast to the literature that examines racial cooperation in the Prisoner's Dilemma, the literature that examines gender cooperation in the Prisoner's Dilemma is vast; it is also often times contradictory. Prisoner's Dilemma gender cooperation results vary according to the time

the study took place, the geographic location of the study, as well as the study's design. Hence, certain studies have found evidence that females have higher cooperation rates (see Sibley, Senn & Epanchin 1968; Fisher & Smith 1969; Bonacich 1972; Smith, Vernon & Tarte 1975; Dawes, McTavish & Shaklee 1977; James, Soroka & Benjafield 2001; Hu & Liu 2003), while others have found support for the converse (see Kahn, Hottes & William 1971; Kahn, Hottes & Davies 1971; Sell & Wilson 1991; Brown-Kruse & Hummels 1993). Most studies, however, have found no significant differences for the cooperation rates of women versus those of men (Caldwell 1976; Goering & Kahn 1976; Orbell, Dawes & Schwartz-Shea 1994; Sell 1997).

The following section will review some of the theoretical support for the hypothesis that women will have higher cooperation rates than will men in a monetary Prisoner's dilemma.

Theorizing Gender Cooperation

Gender as a Social Construction and Social Structure

In *The Social Construction of Gender*, Lorber (2001a) notes that "gender is so pervasive in our society that we assume it is bred into our genes" (as cited in Shaw 2001:121). Gender, however, is not a genetic attribute; it refers to "the personal traits and social positions that members of a society attach to being female or male" (Macionis 2005:325). Furthermore, conceptions of gender norms are fluid, varying, and changing across cultures and over time; gender is constantly created and reproduced through human interaction — a process commonly referred to as "doing gender" (West and Zimmerman 1987). At the individual level, gender construction begins at birth (and possibly even before, thanks to medical technologies such as sonograms) when newborns are assigned a sex based on the appearance of their genitalia. The newborn's sexual classification quickly becomes a gender status through naming, dressing, and the use of other gender indicators (Lorber 2001a). People respond to these indicators according

to gendered norms and the child soon learns and internalizes their assigned gender identity and begins routinely doing (performing) gender for themselves (Butler 1990; Messner 1990). At an early age gender identity-construction is accomplished by the individual who then, according to West and Zimmerman (1987), becomes hostage to its production.

In addition viewing gender as a social construction, it can also be seen as a social structure. Risman (2004) makes the case for conceptualizing gender as a social structure⁶ (others such as Patricia Martin (2004), prefer the term institution) and using this conceptualization as a tool for analyzing the ways in which gender is grounded in the individual, interactional, and institutional dimensions of society. Focusing on gender as a social structure also suggests that gender can be a constraint that opposes individual motivation (Blau 1977). Gender is structurally buttressed through gendered norms and expectations that are “enforced through informal sanctions of gender-inappropriate behavior by peers and by formal punishment by those in authority should behavior deviate too far from socially imposed standards for men and women” (Lorber 2001a:123).

The function of gender categories is (according to some feminist scholars) to keep women subordinated through a system of stratification so that they can be exploited in both the marketplace and the household (Lorber 2001b). Despite the glaring inequality gender classifications produce, they persist because they are deeply embedded as a basis for stratification in our individual personalities, cultural norms, and societal institutions (Risman 2004). Thus, the status inequalities that gender divisions create can potentially manifest themselves in an individual’s social decision making.

⁶ Social structure is defined as “any relatively stable pattern of social behavior” (Macionis 2005:655).

Gender Cooperation and Social Decision Making

Many scholars have employed social learning theories, such as Carol Gilligan's (1982) work on differences in the moral development of women and men, as the foundation from which to project differences in cooperation in social decision making games such as Prisoner's Dilemma (Brown & Taylor 2000; Stockard, van de Kragt & Dodge 1988). According to Gilligan, boys are taught to hold a "justice view" of morality that emphasizes formal rules and the rights of individuals under those rules, while girls (because of socialization) tend to favor a "care view" moral perspective that emphasizes solidarity, community, and close relationships. Additional theoretical support for increased cooperation rates among women can be found in the work of Janet Lever (1978), who after examining single-sex play groups found boys favor games that nearly always have winners and losers; these games reinforce masculine traits of aggression and competition. Conversely, girls are more likely to play games (such as jump rope, hopscotch, dancing, and singing) where victory is not the ultimate goal and interpersonal skills of communication and cooperation are fostered. This finding is important considering the construction of the Prisoner's Dilemma game and its flexibility to end in either a draw or with a clear winner and loser. Applying Lever's conclusion to Prisoner's Dilemma suggests that women are more likely to cooperate and play for the draw that most benefits both players, and that men are more likely to attempt to out-compete one another by defecting.

As theoretical foundations for hypothesizing gender differences in social decision making scenarios the above explanations fit nicely with the social construction and social structure theories of gender described earlier. Though gender is a social construction, it is nonetheless considered as a real and meaningful distinction by most people. Since, as discussed earlier, "situations that are defined as real, are real in their consequences," the societal belief that women

place more value on interpersonal relationships, friendships, solidarity, and cooperation than do men who in turn are believed to favor aggression, domination, and competition becomes a self-fulfilling prophecy (Thomas 1931:145). In other words, since as women and men we are expected to act in certain gendered ways, we internalize that expectation and act accordingly. Similarly, gender as a social structure can both act as a constraint that tempers individual motivations to cooperate/defect according to socialized gender roles or as a prescribed response to the cooperate/defect decision.

Brent Simpson (2003), however, argues that previous research theoretically grounded on work by Gilligan (1982) and other feminist scholars often fails to find gender differences in cooperation levels because researchers have consistently used the Prisoner's Dilemma game to investigate if a difference exists. Simpson contends that the Prisoner's Dilemma is problematic because several theories of gender/sex related behavior support the notion that "females are more likely to defect out of fear (the prospect that one's cooperation may be exploited) while males are more likely to defect out of greed (the temptation to free-ride on others' cooperation)" (Simpson 2003:36). Since the Prisoner's Dilemma contains both fear and greed, Simpson argues that one should not expect to observe sex differences in this classic greed and fear version (his study supports this hypothesis). Instead, Simpson predicted that in a dilemma that emphasized the fear component, fewer females than males would cooperate. In Simpson's study, this was not supported by the evidence since there were equal levels of cooperation among men and women. Lastly, in a dilemma that emphasized greed, Simpson predicted males would be less likely than females to cooperate. In this greed dilemma study, he found that 57% of females versus 33% of males cooperated, thus supporting his hypothesis. In a repeat of this study using similar methods, Simpson found similar results.

Simpson brings to light some interesting considerations; his work shows that for all but the original (greed and fear) version of the Prisoner's Dilemma, women in his study cooperated more than men despite the fact that their cooperation levels often did not reach the level of statistical significance. This begs the question of whether a larger and broader sample would have yielded differing results. Also questionable is whether Simpson's tweaking of the Prisoner's Dilemma to create a fear dilemma and a greed dilemma is valid and is actually measuring fear and greed influences on cooperation levels. Since he does not ask participants the reason for their defection, we can only theorize as to their real motives. In contrast, the open-ended questionnaire component of the present study allows for an examination of the reasons and rationale participants give for cooperating and defecting.

A final important factor that is present in the work of Simpson and many others employing the Prisoner's Dilemma in their research, is that study participants are not allowed to see or meet one another throughout the experiment. As a result, participants have no ability to take racial and gender group membership into account when playing against a person they have never seen. By allowing participants to see the person they will play the monetary Prisoner's Dilemma game with before the game instructions are explained to each separately, this study gives insight into whether race and/or gender are somehow being used as a proxy to gauge trust and altruism.

It should also be noted that additional theoretical grounding for the hypothesis (referred to later as hypothesis 2) that women pairs will have higher same-gender group cooperation rates than male pairs in a Prisoner's Dilemma game, can be based on several historical and sociopolitical considerations, the most important of which is the existence of patriarchy and women's resistance to this social-structural system of domination. Hence, Simmel's (1955)

work on *Conflict and the Web of Group Affiliations*, can also provide theoretical grounding for the view that patriarchy and sexism, if viewed as a group threat to women, may have the function of increasing female group solidarity and fostering group members to transcend individual interest in favor of the moral imperative to support the group. From this perspective, women's subordinate social position will result in higher female cooperation levels rather than higher female defection levels that are based on fear and self-protection, as is Simpson's contention. Thus, in the case of the monetary Prisoner's Dilemma game I employ, increased female cooperation theoretically hinges on whether women see themselves as a subjugated and/or oppressed group.

In summation, the primary theoretical rationale past researchers have employed to predict gender differences in the Prisoner's Dilemma has typically been that women's socialization would result in higher cooperation rates for women relative to men (Stockard, van de Kragt & Dodge 1988; Brown & Taylor 2000). I propose that in addition to socialization, female experiences of subjugation under a patriarchal system may also motivate greater female cooperation in the Prisoner's Dilemma. Inconsistent results and contradictory findings, however, suggest that the question of whether gender affects cooperation in Prisoner's Dilemma and other social decision making games remains unanswered (Ledyard 1995). By employing traditional experimental and quantitative methods along with more qualitative methods (that allowed for the analysis of open-ended responses to the question of why participants chose to cooperate or defect) this study was able to further explore Prisoner's Dilemma gender differences and better elucidate how gender influences the decision-making processes of participants.

The Intersection of Race and Gender

Various scholars (particularly Women of color) have pointed out that when considering the system of gender stratification, it is valuable to consider various other dimensions of social stratification such as race and class since all of these systems of oppression operate simultaneously, intersect, and can have cumulative effects (Anderson and Collins 2001; Carby 2000; Collins 2000; Williams 2000; Baca Zinn 1996; Delgado 1995; Baca Zinn and Thorton 1994; Frankenberg 1993; Rothenberg 1992; hooks 1991; King 1988). In light of this, some have noted that the theoretical divisions among scholars who specialize in race or class or gender or queer theory have undermined a more sophisticated analysis of inequality (Reskin, 2002; Tilly, 1999). Others such as Collins (1998), Calhoun (2000) and Risman (2004) advocate a “both/and” strategy that accents the need to “understand gender structure, race structure, and other structures of inequality as they currently operate while also systematically paying attention to how these axes of domination intersect” (Risman 2004:429). Though gender and race are social constructs they are nevertheless universally used to rationalize inequality.

The implications of intersectionality research for Prisoner’s Dilemma studies are that racial and gender considerations are intertwined, and that participant’s race and gender status cannot be divorced from one another. In other words, Black women cannot respond separately as Black and as women, but rather these two statuses work in tandem in shaping social perceptions and responses. The race and gender status of a participant’s game partner may also influence social perceptions and expectations in ways that vary across race and gender categories. As a result, there is a need to shift from research that generally examines race or gender but not both together, to research that examines both race and gender and the intersection

of these statuses. By doing so we can learn if one status dominates or if the intersection of race and gender creates unique perceptions and responses for different race and gender groupings⁷.

In the following chapter, I present the methodology employed in this study and describe a research design that was created to measure both race and gender group differences in Prisoner's Dilemma cooperation/defection rates, while also addressing the need for intersectional exploration.

⁷ The intersection of race and gender compose the theoretical basis for hypotheses 3 and 4 presented in Chapter 4 (page 45).

CHAPTER 3 RESEARCH METHODOLOGY

Research Design

In order to examine differences in levels of cooperation between Blacks and Whites and women and men in a social dilemma, an experimental design based on a monetary version of the Prisoner's Dilemma game was created. This specific research design makes it possible to test the following key questions:

1. Is there a correlation between race and likelihood of cooperation in a social dilemma?
2. Is there a correlation between gender and likelihood of cooperation in a social dilemma?
3. What are the reasons and rationale given by participants for choosing to cooperate or defect?
4. Do levels of trust and expectations of a game partner's decision differ between race and gender groups?

To investigate these questions a sample with the following race and gender composition was recruited:

- 36 White males
- 36 White females
- 36 Black males
- 36 Black females

This created a total sample size of 144 participants, split into the following six experiment groups:

1. White male group ($n = 24$)
2. White female group ($n = 24$)
3. Black male group ($n = 24$)
4. Black female group ($n = 24$)
5. Black and White male cross-race group ($n = 24$)
6. Black and White female cross-race group ($n = 24$)

The purpose of creating these experiment groups and dividing participants accordingly was to allow the researcher to compare and contrast the cooperation/defection decisions and rationale of participants in a given group with those of participants in different groups. Participants in the study were scheduled in dyads and played a one-shot game of the Prisoner's Dilemma with a member of their same-gender group. For race, both same-group and cross-race group differences were measured and analyzed. Cross-gender group differences were not examined due to financial constraints and the multitude of previous studies that have explored this question.

At the beginning of the experiment (after participants read and signed an informed consent form⁸), participants were briefly allowed to see one another and told that they would both soon be participating in a social decision making game. They were then separated and told that the person they would be playing the game with was the same person they just saw and that they would leave the experiment in isolation (and not encounter the person they played) once the game was complete. Next, the participants were escorted to separate rooms where they received an extensive briefing on a monetary Prisoner's Dilemma game until the researcher was confident that they understood the various possible choices and the consequences and payoffs of each combination of choices. During this time they were told that if both players cooperated they would each receive \$6. If they both defected, they would each receive \$3, and if one cooperated and the other defected, the person who cooperated would receive \$0 while the person who defected would receive \$9. Like the classic version of the game, which potentially punishes cooperation⁹ with a nine-year prison term, the prospect of not receiving compensation for your time in this monetary Prisoner's Dilemma game served to temper players desire to cooperate.

⁸ The informed consent form is located in Appendix B

⁹ As mentioned in Chapter 1, cooperation in the classic Prisoner's Dilemma scenario refers to not confessing to the crime and thus cooperating with the co-criminal.

Following the briefing, participants indicated their cooperation or defection by circling either “cooperate” or “defect” on a game sheet, which was located on the first page of a questionnaire that was given to them during the briefing period (see appendix A). After indicating their cooperation/defection game decision, participants then filled out the questionnaire by responding (in writing) to a series of open-ended questions about their game decision and providing demographic information. Upon learning the cooperation/defection decision of both players the researcher compensated each player accordingly. The researcher then debriefed both players individually to prevent any possible animosity resulting from defection during game play.

Measures and Instruments

The data for this study came from two sources: (1) participants recorded decision to cooperate or defect and (2) a questionnaire that asked participants about their demographic characteristics and the following open ended questions¹⁰:

- Why did you cooperate or defect? Please explain in detail.
- Do you feel you can trust the other player? Why or why not?
- Do you believe the other player will cooperate? Why or why not?

The participants recorded decisions to cooperate or defect were entered into a statistical analysis computer program, Statistical Package for the Social Sciences (SPSS), which was used to calculate whether differences between groups were statistically significant (greater than zero) and whether the study’s hypotheses (presented in Chapter 4) were supported by the data. The researcher coded the open-ended questionnaire responses according to any common themes that emerged. Of particular interest were the reasons and rationale put forward by participants for cooperation/defection, and how these differed between and within the four categorical gender and racial groups and the two cross-race groups.

The strengths of this study are that: (1) it examines if there is a correlation between race and cooperation. This is major gap in the social dilemma literature and this study is a step toward filling it; (2) Unlike many studies incorporating the Prisoner's Dilemma, this study uses a one-shot version of the game that guarded against revenge, reputation and changes in strategy affecting cooperation rates; (3) Incorporating an open-ended survey component allows for the examination of why participants cooperate or defect in addition to the data on their actual cooperation and defection rates; and (4) Unlike most previous research that has tended to exclusively measure the likelihood of cooperation, irrespective of the gender and/or racial group membership of each individual and pair of participants, this study specifically examines intra-group and cross-group cooperation rates.

Experimental Design

According to Bernard (2000), the experimental method “is not one single technique but an approach to the development of knowledge” (139). Experiments are often used by social science researchers to control the effects of confounds to understand the effects of a particular independent variable. However, since this experiment (like most) entailed investigating the effects of several independent variables at once, a factorial design that allows for the systematic analysis of each independent variable was most appropriate. Moreover, factorial design made it possible to measure interaction effects on dependant variables (such as cooperation/defection) that occur as a result of interaction between two or more independent variables (such as race and gender).

The strength of using this method is that it enabled the researcher to see if there are any statistically different levels of cooperation/defection both among and between racial and gender group pairings. Additionally, a general benefit of factorial experimental designs is that they can

¹⁰ The questionnaire can be viewed in Appendix A.

be replicated, thus augmenting the confidence that can be placed in the findings' internal validity and generalizability (Babbie 2001). Perhaps the greatest strength of this method, however, is that a controlled experiment can measure social dilemma cooperation in an isolated environment and under such conditions that would be difficult, if not impossible, to observe otherwise.

A general limitation of the experimental method used is its artificiality (Babbie 2001). In other words, what happens in a controlled setting may not be reflective of what happens in more natural social encounters. Any study concerning social dilemma cooperation/defection should take this into account. In the case of social dilemma cooperation/defection the possibility of spurious correlations were also of concern. Factors other than race or gender, such as income, class, and/or religiosity may be at the root of greater group cooperation/defection and these were statistically controlled for when appropriate.

Recruitment of Participants

Participants for this study were Black and White undergraduate students attending a major public southeastern university. They were recruited through the use of flyers that were posted on campus and distributed in general elective introductory level sociology classes. Recruitment flyers stated that participants could earn from \$0-\$9 dollars for playing a social decision making game that would take between 15 and 20 minutes to complete. The recruitment flyers also stated that the study was seeking African-American and White non-Hispanic participants.

Demographic Characteristics of the Sample

Participation in the study was restricted to self-described Black and White students to examine if race (or perhaps racism) influenced a participant's decision to cooperate or defect. Due to the systemic form of White-on-Black racism that has persisted in the U.S. from the 17th

century until the present, any racial group differences in social dilemma cooperation resulting from subordination are most likely to be evident in same-race and cross-race pairings of Blacks and Whites. Latinos were not recruited¹¹ for the sample because they trace their origins to a multitude of countries including Mexico, Puerto Rico, Cuba, Dominican Republic, as well as all the Spanish speaking countries of Central and South America, each of which have their own differing systems of racial hierarchy and domination. Moreover, racially “Latinos are white, black, indigenous, and every possible combination thereof” (Suarez-Orozco & Paez 2002:3).

A general weakness of this study is that the sample was limited to undergraduate college students. Participants for the study ranged from 18-28 years of age. The mean age was 20 with a standard deviation of 1.63. Also, the majority of participants reported coming from a middle-class, upper-middle class, or upper-class background with 80.5 percent reporting a family income of \$41,000 or higher. Fifty-five college majors were represented with sociology being the most common major (n = 25). In these characteristics, the sample is reflective of the typical ages, social class positions, and variety of educational majors of traditional college students and therefore is susceptible to any biases present in this population. For example, studies on aging employing the Prisoner’s Dilemma provide evidence that cooperation rates may be higher for children than for adults (Sjoberg, Bokander, Denick, & Lindbom 1969). Social class may also influence cooperation and researchers have shown that college major can be correlated to increased or decreased cooperation rates (James, Soroka, & Benjafield 2001; Hu & Liu 2003). By only studying college undergraduates, this study did not address the question of whether having a broader and more diverse sample population would have yielded different results.

¹¹ A few participants who considered themselves White non-Hispanic, but who indicated they had a Latino ancestor on the questionnaire were permitted to participate. Similarly, participants who considered themselves African American, but indicated that they had ancestors from the Caribbean were also permitted to participate.

More specific weaknesses of this study's sample include the large contingent of sociology majors ($n = 25$) who participated, the use of sociology facilities to conduct experiments, and the participation of approximately 40 students who were enrolled in a course taught by this researcher. To combat possible influences on responses that a participant's connection to the sociology department and/or to this researcher may have, it was explained to participants (and explicitly stated in the informed consent form) that their responses would be anonymous to all but the researcher and that the responses would have no bearing on any course grade.

Analyzing the Data

Quantitative procedures for analyzing the data in this study included cross-tabulations, bivariate and multivariate analysis, analysis of variance and logistic regression. Qualitative procedures included a content analysis of the open-ended responses to the question "Why did you cooperate or defect? Please explain in detail." Questionnaire responses were coded according to various thematic categories and compared within and between the six experiment race and gender group categories. In addition to being qualitatively coded, responses to the questions "Do you feel you can trust the other player?" and "Do you believe the other player will cooperate?" were quantitatively coded and assigned into one of the three following categories: (1) mostly yes; (2) mostly no; and (3) uncertain. Statistical procedures to analyze race and gender group differences to the responses to these questions were then conducted using SPSS.

Role of the Researcher

The researcher/social dilemma game facilitator attempted to remain as neutral to the process as possible. He employed the same verbal script to explain the rules of the game to each participant and provided clarification when needed. Furthermore, he made sure that participants

were familiar with all of the possible outcome scenarios and the corresponding pay-out for each one.

At the conclusion of the game he paid participants accordingly and debriefed each one individually. He also asked participants not to reveal the dynamics of the game to any of their peers who might participate in the study. At the games conclusion he made sure participants left their separate rooms at staggered times so as not to encounter one another on the way out. Finally, he made every effort to maintain the same professional demeanor throughout each game and debriefing period.

For the purpose of reflexivity, the researcher would like to disclose that he is a Latino, male, graduate student, 28-years of age and that his presence in itself may have influenced the outcome of the study in unforeseen and unknown ways.

CHAPTER 4 QUANTITATIVE RESULTS

Hypotheses

In consideration of the first two research questions, (1) Is there a correlation between race and likelihood of cooperation in a social dilemma? and (2) Is there a correlation between gender and likelihood of cooperation in a social dilemma? outlined in Chapter 1 (page 12), I posit the following five hypotheses which are theoretically grounded in the works of Gilligan (1982), Chong (1991), McAdams (1995), James, Soroka and Benjafield (2001), and Hu and Liu (2003) among others.

- **Hypothesis 1:** Black participants will have higher intra-group cooperation rates than White participants.
- **Hypothesis 2:** Women will have higher intra-group cooperation rates than men.
- **Hypothesis 3:** Black women will have the highest cooperation rates of any of the four same-race and same-gender experiment groups.
- **Hypothesis 4:** White men will have the lowest cooperation rates of any of the four same race and same-gender experiment groups.
- **Hypothesis 5:** same-gender cross-racial group pairings will have lower cooperation rates than the intra-group pairings of both Blacks and Whites.

The following sections discuss the quantitative results of the study, which yield support for hypotheses numbers one and three. The findings from a quantitative analysis of trust and expectations are also discussed, as is the role of religiosity in social dilemma decision making.

Quantitative Findings

Cooperation

Tables 4-1 and 4-2 display the cooperation rates and distribution of outcomes for each of the six experimental groups. Hypothesis 1 predicts Blacks will have higher intra-group cooperation rates than Whites in the monetary Prisoner's Dilemma. Concordant with this

hypothesis, 69% of Blacks and 50% of Whites in same-race groups cooperated. This difference in same-racial group cooperation approached statistical significance ($p = .061$) (Table 4-3).

Additionally, if one also takes into account the participants in cross-racial group experiments, the overall cooperation rate is 72% for Blacks and 54% for Whites. This difference in Black and White cooperation is significant ($p = .025$) (Table 4-4).

Hypothesis 2 predicts that women will have higher intra-group cooperation rates than men will have in the monetary Prisoner's Dilemma. Contrary to this hypothesis, 61% of women and 65% of men cooperated (Table 4-5). This difference was not significant ($p = .604$) and indicates virtually no difference between female and male cooperation rates. Furthermore, there were also no statistically significant differences between females and males on the variables *trust in partner* and *expectation of partner's decision to cooperate or defect*. These findings are concurrent with the majority of previous studies that have found no significant difference in the cooperation rates of women compared to those of men (see Caldwell 1976; Goering & Kahn 1976; Orbell, Dawes & Schwartz-Shea 1994; Sell 1997).

Hypothesis 3 predicts that Black women will have the highest cooperation rates of any of the four same-race and same-gender categorical groups. Supporting this hypothesis, the cooperation rates for same-race and same-gender group pairings are as follow: Black women 75% cooperation; Black men 62% cooperation; White men 54% cooperation; White women 46% cooperation (Table 4-1). Though the differences between the cooperation levels of all the same-race and same-gender groups is not statistically significant ($p = .202$), the cooperation level difference between the Black female group and White female group is significant ($p = .039$).

Hypothesis 4 suggests White men will have the lowest cooperation rates of any of the four same-race and same-gender categorical groups. This hypothesis was not supported.

Although the White male group had the lowest cooperation rate of any of the categorical groups besides White women, the differences between the White male group's cooperation rate and most of the other groups was not statistically significant.

The final hypothesis predicts that same-gender cross-racial group pairings will have lower cooperation rates than the same-gender same-race group pairings of both Blacks and Whites. Surprisingly, the exact converse proved true in that the male cross-racial group pairings had the highest cooperation rate (79%) of any group and the female cross-racial group pairings cooperation rate (63%) tied for third (out of the six groups) with the Black male group (Table 4-1). This finding contradicts the findings of earlier research on how race affects cooperation in the Prisoner's Dilemma (see Sibley, Senn & Epanchin 1968; Wilson & Kayatani 1968; Cederblom & Diers 1970; Baxter 1973). On the other hand, this study corroborates the more recent cross-racial group cooperation findings of Hieder and Skowronski (2007).

Additionally, this study demonstrated that male cross-racial group pairings had cooperation rates that approached significantly greater levels than White male group pairings ($p=.066$) and that were statistically greater than the White female group pairings ($p = .017$). These findings run counter to those of Dowing and Bothwell (1979) and suggest that either racial discrimination in social dilemmas is subsiding or that the desire to appear non-racist is leading to increased cross-racial cooperation.

Finally, it should be noted that overall Black and White differences in cooperation (that indicate that Blacks have higher cooperation levels than Whites irrespective of race of game partner) remain significant even in logistic regression models that control for the influence of gender and family income ($p = .044$).

Quantitative Analysis of Trust and Expectations

The quantitative component of this study also revealed strong relationships between whether a participant trusted their game partner, their expectation that their game partner would cooperate, and their decision to cooperate or defect (Table 4-6). Of the participants who indicated in the questionnaire that they mostly trusted their game partner, 86% cooperated whereas 37% of those who mostly did not trust their partner cooperated. Of the participants who indicated they were uncertain as to whether or not they trusted their partner, 64% cooperated. In this, cooperation levels for participants who identified themselves as uncertain more closely resembled that of participants who trusted their partner than those who did not trust their partner. The relationship between trust of game partner and cooperation is significant at the $p < .001$ level.

Expectation of game partner's decision was also a significant predictor of cooperation (Table 4-7). Participant's who mostly believed their game partner would cooperate had a cooperation rate of 82%. Conversely, participants who mostly believed their game partner would defect had a cooperation rate of 25%. Of the participants who were mostly uncertain as to whether their partner would cooperate or defect, 68% choose to cooperate. The relationship between expectation of partner's decision and cooperation is significant at the $p < .001$ level. Additionally, there is a significant ($p < .001$) relationship between whether a participant trusts his/her game partner and his/her expectation that the game partner will cooperate.

Also of note, when excluding participants who indicated they were uncertain as to whether their game partner would cooperate or defect, statistically significant ($p = .051$) differences between Black and White participants became visible (Table 4-8). Seventy-two percent of Blacks believed their game partner would cooperate compared to only 56% of Whites.

A breakdown of participant's expectation of game partner's decision by race and gender is shown on Table 4-9.

The Role of Religiosity

Of the variables measured, the only one other than racial variables to correlate with cooperation was religiosity. The religiosity variable was originally coded with three categorical options for the response to the question "How religious are you?" These options were (1) below average; (2) average; and (3) above average. Later this data was collapsed into the categories "less than average religiosity," and "average or higher than average religiosity" in order to better explore how the presence and absence of religiosity is correlated with social dilemma cooperation and defection. In this, participants who identified as having less than average religiosity had a cooperation rate of 50%, whereas those who identified as having average or higher than average religiosity had a cooperation rate of 69% ($p = .029$) (Table 4-10).

Religiosity was also associated with trust in partner. Although participants who identified as having less than average religiosity were just as likely (39%) to trust their partner as participants who identified as having average or above average religiosity, the former group was more likely (45% versus 30%) to indicate that they did not trust their partner. Furthermore, participants with below average religiosity were half as likely to indicate uncertainty as to whether they trusted their partner (16%) than where participants who identified as average or above average religiosity (32%). These measures approached statistical significance at the $p = .069$ level.

While religiosity and race are clearly associated to cooperation levels in the monetary Prisoner's Dilemma, the quantitative results of this study are complicated by an intersection of race and religiosity (see tables 4-11 and 4-12). Eighty-nine percent of Black participants

indicated having average or above average religiosity compared to 50% of White participants. This difference in religiosity was significant at the $p < .001$ level. The higher level of Black participant religiosity was also evident in the six experiment racial/gender groups with the Black female group and Black male group tied for the greatest level (88%) of group participants in the average and above average religiosity category. Differences in the six racial/gender groups' religiosity levels are significant at the $p < .002$ level. In logistic regressions that incorporate religiosity and race, race as a predictor of cooperation is no longer a significant measure ($p = .136$). Therefore, it is possible that cooperation level differences by race are a reflection differences in religiosity and vice-versa; however, further exploration of this intersection is needed in order to draw a more definitive conclusion. It should also be noted that reported levels of religiosity correlated with cooperation rates in a similar manner for both Black and White participants.

In terms of the religion of participants, 76% of Blacks identified as either Protestant, Christian or both compared to 38% of Whites. Differences in religious affiliation between Blacks and Whites was significant at the $p < .001$ level. While religious affiliation was not significantly associated with cooperation rates or expectation of partners' decision rates, participants who indicated they were either Protestant or Christian were more likely to trust their partner (47%) than were non-Protestant and non-Christians (29%). This difference approached statistical significance at the $p = .081$ level. Also of note, in logistic regressions that controlled for gender and family income of participants, religiosity as a variable remained significant at the $p = .042$ level.

Discussion of Quantitative Findings

The quantitative findings of this study provide support for the hypothesis that Black participants will have higher same-race group cooperation rates than White participants in a social dilemma. They also show that in this particular social dilemma, Black participants are generally more likely to cooperate with a game partner (irrespective of that game partner's race) than are White participants. In Chapter 2, I proposed that hypothesized racial differences in cooperation rates would be based on Black subjugation and responses to White racism, as well as greater Black racial identity awareness. However, this study's quantitative component measures only if differences in cooperation exist, not what the reasons for these differences are. With that said, the quantitative findings are in line with the presented theoretical arguments for greater Black cooperation, although further analysis is needed (and will be presented in Chapter 5) to verify the validity of these claims. It should also be noted, that racial differences in participants' levels of religiosity may be the underlying cause of greater Black cooperation, thus presenting the possibility that associations between race group and cooperation levels are the result of a spurious correlation.

On the question of whether women have higher same-gender group cooperation rates than men (presented as hypothesis 2), the quantitative findings indicate no significant evidence of gender difference and thus are concordant with the majority of previous Prisoner's Dilemma studies (see Caldwell 1976; Goering & Kahn 1976; Orbell, Dawes & Schwartz-Shea 1994; Sell 1997). This finding contradicts the view that gender socialization and the status inequalities that gender divisions create (in the United States) will by themselves lead to greater female social dilemma cooperation levels.

However, the finding (supporting hypothesis 3) that the Black female group had the highest cooperation levels of any same-race experiment group while the White female group had the lowest, suggests that the intersection of race and gender creates unique perceptions and responses for different race and gender groupings. These differences in cooperation levels of Black and White females may be a reflection of the different social positions and power these women hold. As Lengermann and Wallace (1985) point out, White women are less likely to see themselves as an oppressed minority group than are Black women because the former are well represented on every level of U.S. social class structure, whereas the latter are found primarily on the lower and middle levels. With regard to social dilemma cooperation, this suggests that if White women do not see themselves as a minority group it is not likely they will have high cooperation rates that are due to their shared experiences of minority group subjugation. This is not to imply that gender group membership does play an important role in the cooperation/defection decisions of some White women, but rather that the influence of gender status on social dilemma cooperation may be different for White women than it is for Black women.

The negation of hypotheses 4 and 5 further speaks to the complicated nature of the results that the intersection of race and gender can create. In particular, the findings of higher than expected levels of both male and female cross-racial group cooperation can be viewed in many ways. These quantitative findings can lend support for Bell's (1980) *Interest Convergence Hypothesis*, Wilson's (1978) declining significance of race argument, and a host of other theoretical perspectives. In Chapter 5, I report and discuss the open-ended data findings of this study, which help to assess and interpret the reasons behind the relatively high levels of cross-racial group cooperation.

In light of the above findings it is important to note that one of the biggest challenges faced by gaming studies, and more particularly the Prisoner's Dilemma, is questions about the external validity of laboratory experiments and their relevance to real-life social dilemmas (Nemeth 1972; Apfelbaum 1974; Pruitt & Kimmel 1977). As Pruitt and Kimmel (1997) note, "most researchers who use games simply report their results with no attempt to speculate about the real-life implications" (367). This is in part due to the view of certain researchers such as Rapoport (1964) who feel laboratory results are chiefly valuable for the perspectives they bring forth and questions they give rise to. Thus, they feel no need to generalize beyond the laboratory. Other's, such as Pruitt and Kimmel (1997), feel it is preferable for researchers to try to generalize their findings to settings with similar background conditions, however, side against those, such as Rubin and Brown (1975), who attempt to generalize their game results to all settings involving interpersonal dependence.

The current study utilizes race and gender theory as the basis for testable hypotheses and employs content analysis in an effort to show the relevance of the findings to social dilemma research without over generalizing. Hence, what can be said about the quantitative findings presented above is that minority racial group membership and religiosity are positively correlated with cooperation in the social dilemma game Prisoner's Dilemma. Additionally, it is reasonable to suggest that these variables may also be correlated in settings involving interpersonal dependence with similar background conditions. However, as some of the open-ended responses that will be discussed in the next section show, the ideas of what qualifies as a similar condition can vary greatly from person to person. In the following chapter, a content analysis of questionnaire responses will help address some of the validity concerns about employing games to study social dilemma cooperation.

Table 4-1. Proportion of cooperation and defection by race/gender experiment group

Participants race/gender experiment group	% Cooperated	% Defected
White male group(n = 24)	54.2	45.8
White female group (n = 24)	45.8	54.2
Black male group (n = 24)	62.5	37.5
Black female group (n = 24)	75.0	25.0
Cross-race male group (n = 24)	79.2	20.8
Cross-race female group (n = 24)	62.5	37.5
Total	63.2	36.8

Table 4-2. Distribution of game pair outcomes by race and gender experiment group

Experiment Group	Cooperate/Cooperate	Cooperate/Defect	Defect/Defect
White Males	3 pairs	7 pairs	2 pairs
White Females	1 pair	9 pairs	2 pairs
Black Males	5 pairs	5 pairs	2 pairs
Black Females	7 pairs	4 pairs	1 pair
Cross-race Males	8 pairs	3 pairs*	1 pair
Cross-race Females	4 pairs	7 pairs*	1 pair

*In cooperate/defect category of the cross-race male group all defectors were White participants. In cooperate/defect category of the cross-race female group 4 defectors were White participants and 3 were Black participants.

Table 4-3. Proportion of cooperation and defection in exclusively White and exclusively Black experiment groups

Experiment group	% Cooperated	% Defected
Exclusively White groups	50.0	50.0
Exclusively Black groups	68.8	31.3
Chi-square = 3.498	$p = .061$	$n = 96$

Table 4-4. Proportion of cooperation and defection by race

Race of participants	% Cooperated	% Defected
Whites	54.2	45.8
Blacks	72.2	27.8
Chi-square = 5.046	$p = .025$	$n = 144$

Table 4-5. Proportion of cooperation and defection by gender

Gender of participants	% Cooperated	% Defected
Women	61.1	38.9
Men	65.3	34.7
Chi-square = .269 $p = .604$ $n = 144$		

Table 4-6. Proportion of cooperation and defection by trust in game partner

Participant trusts game partner	% Cooperated	% Defected
Mostly yes	85.7	14.3
Mostly no	36.7	63.3
Uncertain	64.1	35.9
Chi-square = 26.974 $p < 0.001$ $n = 144$		

Table 4-7. Proportion of cooperation and defection by expectation of game partner's decision

Expects game partner to cooperate	% Cooperated	% Defected
Mostly yes	82.3	17.7
Mostly no	25.0	75.0
Uncertain	68.4	31.6
Chi-square = 39.944 $p < 0.001$ $n = 142$		

Table 4-8. Expectation of game partner's decision by race

Expects game partner to cooperate	% White	% Black
Mostly yes	55.7	72.6
Mostly no	44.3	27.4
Chi-square = 3.796 $p = 0.051$ $n = 142$		

Table 4-9. Expectation of game partner's decision by race and gender

Expects game partner to cooperate	% White	% Black
Mostly Yes		
Women	56.7	71.0
Men	54.8	74.2
Mostly No		
Women	43.3	29.0
Men	45.2	25.8
Chi-square = 3.889 $p = 0.274$ $n = 142$		

Table 4-10. Proportion of cooperation and defection by religiosity

Level of religiosity	% Cooperated	% Defected
Average and above	69.0	31.0
Below average	50.0	50.0
Chi-square = 4.742 $p = 0.029$ $n = 144$		

Table 4-11. Level of religiosity by race

Level of religiosity	% White	% Black
Average and above	50.0	88.9
Below average	50.0	11.1
Chi-square = 25.658 $p < 0.001$ $n = 144$		

Table 4-12. Level of religiosity by race and gender

Level of religiosity	% White	% Black
Average and above		
Women	52.8	91.7
Men	47.2	86.1
Below average		
Women	47.2	8.3
Men	52.8	13.9
Chi-square = 26.182 $p < 0.001$ $n = 144$		

CHAPTER 5 OPEN-ENDED DATA RESULTS

Open-ended Data Findings

As stated earlier, the aim of the open-ended questionnaire component of this study is to explore the reasons and rationale participants give for their decisions to cooperate or defect and to see if there are general differences in the way different gender and/or racial groups explain their choices. It is also to see if the common explanations given by participants differ when their game partner is of a different racial group. To examine the written responses to the question, “Why did you cooperate or defect? Please explain in detail,” a coding system was developed with 27 categories that captured the most typical responses (see table 5-1). These responses were then compared within and between the six racial and gender experimental groups. Responses that were atypical were also noted and compared in the same fashion. Responses to questions on the variables of trust and expectations though mostly utilized for quantitative analysis were also examined and are discussed here. It should be noted that women generally wrote longer answers than did men and perhaps concomitantly gave more reasons for their decisions. Unexpectedly, open-ended responses also revealed information about the validity of the game and how certain participants equated this laboratory social dilemma to other social dilemmas they might encounter in natural settings. In this chapter, I will first discuss the findings on validity and then present a summary of the general reasons each of the six experimental racial and gender groups gave for both cooperation and defection. Next, I will discuss experiment group differences to questions three and four of the questionnaire. I will conclude the chapter with a discussion of what these findings mean for social dilemma research.

External Validity

Although none of the questions on the questionnaire were specifically designed to test the validity of the study, in their written responses to the open-ended questions some participants made direct comparisons between the social dilemma game they were playing and other social dilemmas that they have encountered in the past or may encounter in the future. One participant equated trusting someone to cooperate in the game to asking a stranger or associate to “save my place in line please” (Participant 77). Others compared game cooperation to trusting someone to return a pencil that they had borrowed or not “tattling” on someone (Participant 37 and Participant 5). An interesting analogy for cooperation in the game came from a participant who wrote: “In life sometimes you will be confronted with life making decisions; therefore, you have to be able to cooperate with your peers even if you don’t know their name. For example, you might be stuck in an elevator with a pregnant women. What do you do? There is another person inside, do you and him cooperate or do you argue? So, you see it is very important to cooperate” (Participant 114). These types of responses were equally present in all of the racial/gender groups and serve to demonstrate that at least some participants ($n = 6$) equate the social dilemma present in the game Prisoner’s Dilemma with social dilemmas that are encountered in natural settings.

Additionally, five participants referenced metaphors popular in other settings to explain their decisions in the laboratory. One participant compared his decision to cooperate as “tak[ing] one for the team” (Participant 61). Another said “although society is all about survival of the fittest, I do believe that we should work together to better survive [rather] than try to kill each other” (Participant 135). Two participants alluded to the “win-win” philosophy popular in the corporate sector, one writing that, “In the long run, it is better for us to cooperate and not be

greedy. Same idea as organizations or businesses. If they all helped each other out instead of working against one another, everyone would win” (Participant 10).

Support for the external validity of the study is also evidenced in responses such as “I equate this game to life and I felt to cooperate is the risk I take everyday, so why not transfer that same value to a game” (Participant 131). Similar responses like “In my opinion – in a life perspective cooperating is the only way to succeed” demonstrate the parallels that some participants draw between their decision in the game and decisions they make in their daily life (Participant 33). On the other hand, a handful of participants make reference to the artificiality of the experiment with comments such as, “I know I’ll feel bad for her if she gets no money, but I kind of just convinced myself that it’s a game and the whole point of playing a game is to have a winner. This now as I’m reading it sounds really terrible though because we should have fun together not compete” (Participant 44). Overall, however, most references to the external validity of the study support the assertion that participants draw on their real world experience in their game decision making process. Furthermore, some participants equate their game decision to decisions they would make in other social dilemmas. What these other social dilemmas are, however, can vary greatly between participants.

An issue that negatively affects the external validity of the study is the amount of monetary pay-out given to participants depending on their game decision and the decision of their game partner. As noted by Simpson (2003), changes in the monetary reward and punishment pay-out matrix produce different types of social dilemmas with possibly different results. With regard to this, one to two cooperative participants in every experiment group except the Black female group, expressed that had the pay-out been larger they would have defected.

Therefore any generalization of these findings to other contexts should consider the relatively minor stakes the social dilemma in this study presented participants with.

In the following sections, I summarize, compare, and contrast the general reasons each of the six experiment race and gender groups gave for both cooperation and defection (see Table 5-2).

Reasons for Cooperation and Defection

White male experiment group

Among participants in this group there were five frequently cited reasons for cooperation. As with all of the six experimental racial/gender groups, the most popular reason given by participants in the White male group for cooperating is that cooperation offers the most mutually beneficial outcome for themselves and their game partner. As one participant wrote “I cooperated because that’s the best outcome for the both of us. It’s not the most important to care about my well-being but I would like to see others benefit as well” (Participant 20).

The next most common explanation for cooperation amongst the White male group centered on the theme that they cooperated because of their personal faith in humanity. Of the 13 participants in this group who cooperated, five expressed sentiments such as “I chose to cooperate because I believe that humans are inherently good and unfortunately we have been given all this incorrect, negative propoganda that it is us against the world. But in reality it is not; we are all in this together and the more we cooperate (Pun intended!) the better off we are all going to be” (Participant 2). And, “I chose to cooperate because I tend to give people the benefit of the doubt and [believe] that people are good-hearted” (Participant 13). It should be noted that faith in humanity as a reason for cooperation was either not cited at all or not cited by more than one participant in any of the other five experimental groups.

After faith in humanity, the next major reason for cooperation stated amongst the White male group was that his game partner seemed nice/friendly. “Though I never knew that student [before today], I get the impression that he’s a nice, genuine person from the first impression” (Participant 10). Another writes, “I cooperated because the other participant appeared that he would be more willing to cooperate. By that I mean when I saw him he did not look like the type of person that would make a decision to go against a complete stranger. He looked like a genuinely good-mannered person.” Another reason given by multiple participants to explain their cooperation was simply that “cooperation is the better choice” (Participant 13). To participants employing this reasoning it seems that cooperation is the most rational alternative.

The primary explanation for defection given by the White male experimental group participants was that defection guarantees money. Ten out of the eleven participants in this group who defected attributed their choice, at least in part, to the fact that irrespective of their game partner’s decision, they would receive either \$3 or \$9.” Statements such as “I choose to defect because there is a guarantee I will receive money” were frequently observed in this experimental group (Participant 1).

A second, less major reason for defection cited by members of this experimental group is that defection made the maximum individual pay-out possible. “I defected because it... offers me the chance to win the most [money] possible” (Participant 4). Finally, the sentiment that a person’s game partner “will likely think and/or act like me” was equally given as a rationale for both defection and cooperation decisions.

White female experiment group

Participants in the White female experiment group primarily cited “cooperation is the most mutually beneficial outcome” as the reason for their cooperation. Slightly more than half

of the women who cooperated expressed this logic in their written response to the question of why they cooperated or defected. Another popular response for this group was, “I did not want to sucker my game partner.” One participant who cooperated noted that “by choosing to defect I feel as if I am being unjust to the other participant” (Participant 31). A participant with a similar view wrote, “if I chose to defect and she chose to cooperate, I would feel guilty about the money. Choosing to cooperate means that I am still electing to win money, but not hurting the other person with my motives” (Participant 27). Unlike the White male group, “faith in humanity” was not a popular response in the White female group and was mentioned by only one person.

Interestingly, three respondents in this group wrote that they cooperated because they “did not need the money.” “Even if she chose defect, losing the money would not be an issue for me” (Participant 47). This sentiment was also expressed multiple times in the Black female experiment group and in the female cross-racial group; however, only one male (White) in the entire study mentioned not caring about the money (Participant 105).

One final cooperation theme that became evident in the White female experiment group is that the female gender of the game partner played a role in some participant’s decision to cooperate. As one participant put it, “There was the possibility... that I would cooperate and she would defect to receive the full money, but I felt that isn’t something a girl would do, more of a sabotage act a male would commit (sexist, I agree)” (Participant 25). This view was shared by another participant who wrote, “My first instinct is to cooperate to be nice but I would figure most people would defect because they will make money and they can’t lose, so if she chooses as I think she will we both will win. It’s just an initial judgment to go by. If it were a male I would have no question but to defect, because she’s female she might cooperate” (Participant 38). A third expressed “I think the other participant, as a girl, is more likely to cooperate than defect”

(Participant 41). Notably, White women were the most likely to list gender as the reason or partial reason for their decision. None of the men and only two Black women in the study mentioned gender in describing their decision-making rationale. Despite the view by some White women in this group, as well as in the cross-race group, that females are more likely to cooperate as the quantitative part of this study demonstrated, White women had the overall lowest cooperation rates of any of the six racial/gender experimental groups.

Like the White male group, the large majority of defectors in the White female group cited the guarantee of money as the principal reason for their defection decision. One White woman stated “I chose to defect because I figured I cannot leave with \$0” (Participant 30). Also, similar to the White male group, the White female group’s second most commonly given reason for defecting is that defecting makes the maximum pay-out possible. Due in part to their higher defection rates, however, White women listed this reason twice as often as White men did. Three women also mentioned that they defected (among other reasons) because they did not know their game partner. “I did not know the stranger,” wrote one participant of her decision to defect (Participant 28). This reason was given either one or two times in each of the other five racial/gender experiment groups. Finally, the belief that a person’s game partner “will likely think and/or act like me,” was listed slightly more often as a rationale for cooperation than for defection.

Black male experiment group

Participants in the Black male group (with a few notable exceptions) generally gave the briefest written answers to the questionnaire of all the six racial/gender experiment groups. Concomitantly, they provided fewer types of reasons for their cooperation or defection. Like the previous groups discussed, the most common reason for cooperation given by participants in the

Black male group centered on the theme that “cooperation is the most mutually beneficial outcome.” Ten out of the 15 players in this group who cooperated gave this as their entire or partial response. The only other rationale for cooperation given multiple times by participants in this group is variations on the sentiment, “I cooperated because I am a good/nice/cooperative person.” Statements such as “that is just the type of person I am, if we can both get paid why not cooperate,” and, “seriously, I am a nice person and I do not see any reason to defect” were used to communicate that participants viewed cooperation as a positive character trait (Participants 53 and 61). One participant in this group explicitly wrote, “I am a cooperative person” (Participant 63). Curiously, this response theme, although fairly common among Blacks in the study, was solely mentioned by one White male and one White female. On the other hand, the popular White male group cooperation response, “faith in humanity,” was only mentioned by a single Black (male) participant in the entire study.

Unlike the majority of defectors in the White male and White female groups who listed guaranteed money as the most common reason for their defection, the most common response participants in the Black male group gave for defection is that defection made the maximum game pay-out possible. Six of the nine defectors in this group mentioned the possibility of achieving the maximum pay-out as a motivating factor. One participant wrote, “I chose to defect because I am a very competitive person. This is a game and defecting gives me the chance to win the most” (Participant 54). Another stated, “[I] defected in hopes that my partner will pick cooperate and I will get nine dollars. Sounds selfish but oh well,” thus again highlighting how this social dilemma decision can be viewed by some as a reflection of individual character (Participant, 59). The second most typical rationale for defection among participants in the

Black male group was that “defection guaranteed money.” Four respondents gave this as part or all of their answer. Members of this experiment group gave few other reasons for defection.

Black female experiment group

Participants in the Black female group made frequent reference to the “mutually beneficial outcome” of cooperation and like all other racial/gender groups listed it more often than they did any other reason for cooperation. Other, moderately common responses to the question “Why did you cooperate or defect?” given by participants in the Black female group are: (1) I cooperated because I am good/nice/cooperative person; and (2) I think my game partner “will likely think and/or act like me.” In an illustration of the latter reason a respondent wrote “[I cooperated] because I like to think positively and I believe that she will do the same” (Participant 95).

The other major theme to emerge from this group’s responses (more clearly than from any others) was that of a moral/altruistic imperative to cooperate. Examples of altruistic and morally laced statements made by participants in this group include responses such as “ [I cooperated] because I was thinking about helping the other person out and we could both leave with money” (Participant 74) and “I cooperated because I like to share and am not a very selfish person so, it was OK to cooperate; the more the better. Why would I be greedy and not share the wealth” (Participant 75). Another respondent stated, “I cooperated because, why would I want to work against someone for seemingly no reason, it seems a bit wrong and selfish... I’d feel a tiny bit bad if I somehow robbed her of an easy, free \$6” (Participant 77).

Related to the moral/altruistic theme was that of “I cooperated because I do not need the money.” A handful of Black female respondents expressed statements such as “if she gains all the money and I gain nothing, it’s OK because I would feel that she needs the money. Whereas I

really am not in need” (Participant 87). Additionally, assertions such as “the other person seems caring enough to want to help someone with a survey, so she seems trustworthy; also, I figure if she decides to defect I’m not at a great loss” are also examples of this line of reasoning (Participant 92). An additional type of response that loosely corresponds to the moral/altruistic theme is that of choosing cooperation to “avoid feelings of guilt” which was cited by three participants in the group.

Though this group had relatively few defections, the two most common reasons given for defection by participants in this group were that “defection guarantees money,” and that, “defection made the maximum pay-out possible. Participants in this group gave no other high-frequency responses for why they chose defection.

Male cross-race experiment group

The male cross-race group had the highest cooperation rate of any of the six experiment groups. The most common reason given among both Black and White respondents was that “cooperation provided the most mutually beneficial outcome.” The next most common reasons for cooperation given by Black respondents centered on the “I cooperated because I am a good/nice/cooperative person” theme and the moral/altruistic theme. Both of these response types typically expressed that the participant felt a strong connection between their character and values and their decision to cooperate. One Black participant in this group wrote:

I chose to cooperate because the money being issued collectively is maximized if both parties decide to cooperate (\$12 in total), along with the idea that I don’t want to seem like a selfish jerk if I happened to choose defect and he chooses cooperate. Sure, I’d receive \$9, but the fact that he received no money because of my selfish action I believe significantly outweighs the monetary value of \$9. Of course, he could choose to defect, leaving me with no money; that would simply convey the type of character he has. In this case, it would bother me much more that he received no money because of my selfishness, than vice-versa. Money isn’t something that could deter my feelings and values (Participant 117).

Another Black participant in this group wrote, “maybe I chose not to defect because of my parents and upbringing” (Participant 112).

White males in this group who cooperated mostly wrote about cooperation as “mutually beneficial,” but were less likely to invoke moral or character arguments in their response. One White participant wrote, “I chose to cooperate because the net benefit to both people cooperating (\$12) is greater than the net benefit of either both defecting (\$6) or one defecting and one cooperating (\$9)” (Participant 101). Another wrote, “I cooperated because I felt making \$6 would be a decent gain for me and the other, and another \$3 to defect isn’t worth losing more [total] dollars. However if the game was for millions, I would probably defect” (Participant 120).

Interestingly, no other cooperation themes among White male participants in the cross-race group emerged. The theme “faith in humanity” that was the second most popular response among the exclusively White male group was not mentioned by a single White male in the cross-race group. Similarly, the response, “I cooperated because my game partner looks nice/friendly,” which was the third most popular response in the White male group, was not mentioned by a single White male in the cross-race group (although one Black respondent listed it).

Notably the cross-race group had only one Black participant who defected (compared to four White participants who chose defection). Also notable, is the rationale given by the Black participant for his defection. He wrote, “I really wanted to cooperate but I don’t know the other person I’m playing with... my theory: with me being who I am, if he chooses to cooperate, then I would have much respect for him and I would give him half of the money I received when I see him again. However, I couldn’t put cooperate because I’m pretty sure he wouldn’t do the same

for me” (Participant 116). This participant was one of only two players in the entire study to suggest he would split the maximum defection money (though this task would have been difficult because participants’ departure time was intentionally staggered and they did not know one and other).

The most frequent response White participants in this group who chose defection gave was based on the view that defection was the most “economically rational” choice. The other most common responses for defection mentioned by Whites in this group were that defection “guaranteed money,” and that “defection was the safest option.” One participant employing all of these views wrote, “I think choosing cooperate is a risky and unwise choice since you are not guaranteed money and even if you do win, you cannot win the highest amount possible” (Participant 110). Notably, every White who defected in the male cross-race group cited economic logic as the primary reason for their defection.

Female cross-race experiment group

The female cross-race group had the most varied responses for why they cooperated than any of the six racial/gender experiment groups. Still, the most common reason for cooperation given by both Black and White women in this group was that cooperation offered “the most mutually beneficial outcome.” The second most common response among Black women was that their “game partner will likely think and/or act like me.” It should be noted that Black women in this group were twice as likely as White women in this group to employ this response. The second most common types of responses for White women was “I cooperated because I have nothing to lose,” and, “defecting is greedy,” which were each mentioned three times. Employing the former type of reasoning, one White women wrote, “If, by chance the other

player decides not to cooperate, I am no better or worse off than when I entered this room, having received \$0” (Participant 127).

The most common response for defection given by both Black and White women in this experiment group was that “defection guaranteed money.” A couple of White women also utilized the “defection is the safer option” theme in describing why they defected. One White women wrote of her defection, “I didn’t want to end up with \$0... and I also prevented myself from being left in a vulnerable position” (Participant 137). This emphasis on safety was a theme that was generally more common among women than among men and which I further discuss in the section titled, Gender and Race Influences. In the next section, I explore and discuss the responses to the questions dealing with trust and expectations.

Open-ended Data Analysis of Trust and Expectations

Though responses to the questions “Do you feel you can trust the other player? Why or why not?” and, “Do you believe the other player will cooperate? Why or why not?” were primarily incorporated into the questionnaire for quantitative coding and analysis (see Chapter 4), a content analysis of responses to both these questions uncovered a difference in experiment group responses for the White male and Black male experiment groups. Before discussion of this difference, however, it should be stated that responses to these questions were generally very short (one to three sentences) and mostly similar across all groups. Typical responses read, “no, because she probably wants to receive the larger amount also,” or, “I have faith that he would pick cooperate” (Participants 31 and 63). Moreover, quantitative analyses found no significant race or gender differences on the trust variable and no gender differences on the variable measuring expectation of game partner’s decision. However, some overall race group differences were found on the latter variable (see Chapter 4).

Despite the limited racial and gender group quantitative variation in the overall coding of responses, content analysis of experiment group responses found a major difference in the language used by different experiment groups to explain the decision to cooperate. This difference centered on the use of the physical appearance of a game partner as a factor in determining that person's trustworthiness and predicting their game decision to cooperate or defect. Labeled as the "halo effect," this phenomenon causes others to assume that those who are physically attractive are also more generous, trustworthy, and sociable than those who are not attractive (Katz, 2003). Additionally, several studies have also established a positive correlation between a person's level of physical attractiveness and their chances of being the recipient of helping behavior (see Benson, Karabenick & Lerner 1976; Mims, Hartnett & Nay 1975; West & Brown 1975). With regard to the Prisoner's Dilemma, Morse et al. (1974) showed that physical attractiveness plays an important role in the cooperation/defection decision. In their study, females playing the Prisoner's Dilemma made more cooperative responses when playing with an attractive male partner than with an unattractive male partner. They also found that males work harder for an attractive female experimenter than for an unattractive one, and that males allow attractive females to exert more social influence over them than they do an unattractive female. Even among players of the same gender, perceived physical attractiveness could possibly influence cooperation and defection rates.

In this study, over one-third of participants in the White male group cited the physical appearance of their game partner as a factor in their cooperation. One respondent wrote, "I feel like I can trust him because of his disposition and clothing style. I believe judging a book by it's cover is completely necessary, often useful, and yes sometimes results in false assumptions, however with his clean-cut looks, I don't think he's got too many radical tricks up his sleeve"

(Participant 21).) Other participants wrote, “he looked like a trustworthy person. He appeared well maintained and intellectual. He looked like someone that would trust me as well,” and, “simply put he looks like a nice dude” (Participants 13 and 19). Interestingly, all participants in the White male group who referenced physical appearance as a factor in their decision to cooperate used the term “looks” to describe the assumed attributes of their game partner, whereas most women in the study employed the term “seemed” to describe assumed attributes.

The Black male group, in contrast, had only one participant who employed the physical appearance of his game partner to explain his cooperation. This participant wrote, “he looks like he needs money just like I know I need money, so I feel we both will make the same decision and cooperate so we can have a few extra dollars in our pockets” (Participant 65). Black and White women, irrespective of their experiment group, were about equally likely to cite the physical appearance of their game partner in their responses to questions on trust and expectations, although White women showed a clear preference for the word “seems” in describing their game partner. Statements such as “she seems nice” were very common in the White female group.

An interesting finding is that no White males in the cross-race group (in contrast to one-third of the males in the exclusively White male group) referred to the physical appearance of their game partner in their responses to the questions regarding trust and expectations. Instead, a common response for White males in this group was that they could not say if they trusted their game partner or if he would cooperate because they did not know him. One White male respondent wrote, “I don’t know him well enough to make that judgment” (Participant 105). Although this was a common style of response for many participants irrespective of their experiment group, unlike White males in the cross-race group, one third of the Black males in

the cross-race group cited the appearance of their White game partner as a factor in why they trusted him or expected him to cooperate. One participant wrote, “I think he will cooperate because of the way he looks. His demeanor seems to be laid back” (Participant 107). Another stated, “He seemed like a cool person” (Participant 97). The absence of references to the physical appearance of Black game partners by White males and greater mention of perceived visible attributes of White game partners by Black males in the Cross-race group poses some interesting questions about who is allowed to talk about physical appearance and in what context.

Though the use of physical appearance as a proxy to measure assumed social and personality characteristics of strangers is well documented (see Zebrowitz, Waltham & Montepare 2005; Katz 2003; Mulford, Orbell, Shatto & Stockard 1998; Kahn, Hottes & Davis 1971), whether physical appearance matters more for certain racial and gender groups is a question that needs further exploration. This study’s open-ended data findings show that many participants rely on stereotypes in their judgments of the trustworthiness and cooperative potential of others. Yet while many participants freely admit to the use of certain stereotypes (such as stereotypes about socioeconomic status, educational level, or social group membership), the mentioning of race and/or racial stereotypes is clearly taboo. For example, differences in response styles according to the race of a participant and the race of their game partner suggest that judgments based on physical appearance are permissible so long as you are a racial-minority group member or if your game partner is of your same racial group. Thus, a White male can list the “look” of a White game partner as his reason for trusting him or expecting him to cooperate, but is socially prohibited (lest he be considered racist) from listing the “look” of a Black game partner as a reason for his cooperation/defection decision. Additionally, it is more common and

appears to be more acceptable to list a game partner's physical appearance as a reason for trusting or cooperating with them rather than as a reason for not trusting them or defecting.

The fact that the male cross-race experiment group had the highest cooperation rates of any in the study may mean that participants in this group are taking racial considerations into account in their decision making and are cooperating at a higher rate because of it. In the next section, I analyze the references made to gender and race by participants and explore the ways these demographic factors may influence cooperation/defection decisions.

Gender and Race Differences

Only one male participant in the entire study cited gender in his written responses to the open-ended questionnaire. He was in the Black male experiment group and wrote, "I generally would trust someone that never gave me a reason not to trust them, but there can also be underlying trust because the other player was the same gender and race as me" (Participant 51). Significantly, no other males in the study cited gender in their written responses. As stated earlier in the chapter, White women (in both the White women and cross-race experiment groups) were most likely to cite gender as factor in their cooperation/defection decision. One White female participant expressed, "I believe she is more likely to cooperate than to defect because she is a woman. Women are more prone to cooperation, and would be more likely to try to guarantee the maximum total payout between two players. I think she will comply with this stereotype" (Participant 126). Another stated, "I feel that I can to some degree, trust her. I suppose it's because she is female as well as soft-spoken. She does not appear as a threat" (Participant 31).

A theme of being more willing to trust another woman rather than a man also emerged among both White and Black female participants. Explaining why she trusts her female game

partner, a White woman wrote, “[her] being a female instead of a male influences my safety decisions” (Participant 28). Similarly, another participant wrote, “the other player is female like me and I more willingly trust a female I don’t know than I would a male” (Participant 124). In one case, a woman who was perceived as portraying masculine qualities was discriminated against because of them. Her game partner (after defecting) wrote, “I don’t think I trust her because she seemed more tom-boyish. But maybe she is more nice than her exterior predicts. I don’t really need to trust her one way or another” (Participant 38). Interestingly, this greater trust of females by certain participants did not manifest itself in high cooperation rates for the White female group that was most likely to employ this rationale in explaining their game decision. Instead, a stated emphasis on issues of threat, risk, and safety resulted in the more self-serving and competitive choice, defection.

There are several explanations for White women having the highest defection rates. The most common is that White women did not want to be taken advantage of (suckered) or be seen as weak. A second, less obvious reason is that they are using a gender stereotype to predict and take advantage of their female partner. In other words, certain female participants may perceive cooperation as a gendered weakness (but one they need not adhere to) that they can exploit for their own gain. This is evident in defection statements such as “I choose to defect because I think [she] would cooperate” or “normally I cooperate in my day-to-day life, choosing defect breaks me out of my normal routine” and “with my personality, I am usually one to take an opposite and independent stand on issues” (Participants 46, 40, and 28). Rather than cooperating and thus conforming to gendered expectations, many White women may be doing the opposite for either personal gain or as a result of the high personal risk that cooperation entails.

Men's responses also reflect gendered patterns in that they are less concerned about the personal risk of cooperation and more concerned about being perceived as bad, greedy, self-interested, and/or biased. Masculinity places them in a position of strength where from they can take perspectives similar to that of the male participant who wrote, "I could defect and be almost positive I'll get \$9 but I'll feel like an ass and \$3 is not worth the social punishment... I don't think too many would 'risk' the normal cordial social lives they have with strangers for a few bucks" (Participant 19). Thus, for men (and perhaps Black women) it may be that cooperation yields more social rewards than potential economic risks, and that the social punishments defection may entail take precedence over the economic advantages defection provides.

In addition to, and sometimes coinciding with, gender, a game partner's race was also listed by a handful of participants as a factor in their decision making process. However, it should be noted that no participants in the White male, White female, or male cross-race experiment groups mentioned race in any of their written responses. Instead, discussion of race as a decision making factor appeared exclusively in the Black male, Black female, and female cross-race groups.

One White woman in the female cross-race experiment group wrote, "I feel that because she is female, the other player stands a greater chance of cooperating than defecting. However, I also feel that an African-American woman may be more likely to stand up for what she wants by defecting, than to take the chance of cooperating. Based on these facts I feel that I have a greater chance of winning more money, and I have guaranteed that I will not leave empty-handed" (Participant 126).

Another example of racial influences on a participant's decision to defect were evident in this response by a Black participant:

I feel that in this world, the one person we must first look out for is you. This by no means is suggesting that people should be selfish with one another. I just feel as though in order to help the people around us, we must be at our most optimal level (financially, psychologically, socially, emotionally, etc.). I was always taught not to trust anyone, but still treat others the way you want to be treated. I can say that I believe most people have a more selfish (for the lack of a better word) mindset than an altruistic one. I briefly met with the girl in the other room. She seemed very outgoing and willing to talk. I would assume she is of Caucasian descent, and although I would never automatically assume that she has any negative feelings toward me, my experiences growing up have taught me that whites secretly do not like blacks on a standard equal to them. I've even been told they have 'a secret agenda' toward blacks (Participant 129).

Asked whether he believed his game partner would cooperate, a Black male wrote, "I would hope so because we are both Black and Greek¹². I think that he'll cooperate" (Participant 53).

Though the quantitative component of this study showed that certain racial differences in cooperation levels exist, the societal taboos against openly discussing race make the precise nature of and reasons for these differences difficult to uncover. In the following section I will summarize and discuss the open-ended data findings of this study.

Discussion of Open-ended Data Findings

The open-ended data findings on the external validity of the study support the view that the social dilemma present in a monetary Prisoner's Dilemma game is to a certain extent relevant to other social dilemma situations. Defining exactly which social dilemmas Prisoner's Dilemma findings can be used to generalize about, however, is a question whose answer seems to vary largely from person to person based on subjective frames of reference and personal histories. It is also a question that needs more in depth examination.

The analysis of open-ended questions also demonstrates that the most common reasons given for both cooperation and defection are very similar across various racial and gender group

¹² By "Greek" the participant presumably means affiliated with a fraternity. Since participants in the study were not allowed to participate with someone they knew previously, measures were adopted to ensure members of the same

pairings. Secondary response themes for cooperation, on the other hand, have greater variance by racial and gender groups. Blacks were more likely to view the decision to cooperate or defect as a moral choice and reflection of an individual's character than were Whites. This helps to explain the greater cooperation levels of Blacks and the statistically significant correlation of the religiosity, race, and cooperation variables.

Differences in responses by gender lend limited support for the view advocated by Simpson (2003) that women are more likely than men (particularly Black men in this study) to defect out of fear rather than out of greed. Nonetheless, a significant difference between Black female and White female cooperation rates point to the important role that cultural factors such as racial and religious group membership can play in social dilemma decisions. In light of this, the findings of past studies that rely exclusively or overwhelmingly on White participants should be revisited and duplicated using broader, more diverse samples. Furthermore, it should be noted that among the various race and gender experiment groups, participants belonging to minority groups are much more likely to take racial and/or gender group membership into account in their game decisions. This is supported by the finding that not a single White male participant mentioned either the race or gender of a game partner as a factor in their cooperation/defection decision. Similarly, only one Black male mentioned gender as a factor in his cooperation/defection decision. White women in the study were most likely to mention the gender of their game partner as a factor in their decision making, yet only one White women cited race. In line with intersection theory, Black women who may have faced subjugation and discrimination due to both their race and gender, were the only racial/gender group participants in the study to list both race and gender as factors in their cooperation/defection decision

fraternity or sorority group were not partnered with one another. In this case, the participants knew of each other's Greek affiliation because they were both wearing shirts identifying their respective fraternities.

multiple times. In this group the intersection of race and gender coupled with the influence of religiosity resulted in significantly higher cooperation rates than were present in the White female experiment group.

The complete absence of race talk in the cross-race male experiment group, despite clear differences in the language participants in this group versus same race groups used to describe their game partners, suggests that race, as a basis for cooperation/defection and as a topic of discussion, remains taboo. Additionally evidence of this taboo is apparent in the lack of references to the physical appearance of Black game partners by White males in the cross-race group. Though Bonilla-Silva (2003) has documented how many times the alleged colorblindness of most Whites serves as a mechanism for maintaining White supremacy, the greater cooperation rates of White participants in cross-race groups is likely not the result of covert racism, but instead may be evidence of Bell's (1980) *Interest Convergence Hypothesis*. In other words, White participants may be viewing the experiment as a chance to show they are non-racist by cooperating with Black participants for a mutually beneficial outcome. There is also modest evidence suggesting that Black male participants at this predominantly White university may have bought into the sincere fictions of Whiteness presented by our society and discussed earlier (Chapter 2), and that they are more likely to cooperate with White males as a result. Due to the limitations of the open-ended data gathered, more in-depth research is needed to substantiate these theoretical conclusions. In the final section of this paper, I will conclude and present suggestions for future research.

Table 5-1. Thematic coding categories with frequencies for responses to the question, “Why did you cooperate or defect? Please explain in detail.

Cooperation Themes	Defection Themes
1) Mutually beneficial (56)	1) Defection guaranteed money (38)
2) Person will think or act like me (26)	2) Made maximum pay-out possible (22)
3) I am a good/cooperative person (14)	3) I do not know the other person (11)
4) Morally superior choice (11)	4) Defection is the safer option (9)
5) Wanted to avoid feelings of guilt (10)	5) Defection is the logical choice (4)
6) Person seemed nice/friendly (9)	6) I think other person will cooperate (3)
6) Did not want to sucker the player (9)	7) Defected because I am greedy (2)
8) I do not need the money (8)	7) Defected because the stakes are low (2)
8) Faith in humanity (8)	9) Defected due to person’s appearance (1)
8) Defecting is greedy (8)	9) Cooperation could result in zero gain (1)
11) Cooperating is fair (7)	
12) Cooperation is the better choice (6)	
13) May have defected if more at stake (5)	
14) Gender influenced my decision (4)	
14) I have nothing to lose (4)	
16) Makes me feel better about myself (3)	
17) Makes me the better person/man (1)	

*Frequency distribution of responses is in parenthesis after each reason for cooperation and defection.

*Multiple responses were counted for participants who provided them.

Table 5-2. Reasons for cooperation and defection by experiment group with frequency of response

Experiment Group	Reasons for cooperation	Reasons for defection
White Males <i>n</i> = 24	<i>n</i> = 13 1. Mutually beneficial (9) 2. Faith in humanity (5) 3. Nice/friendly partner (4) 4. Better choice (3) 5. Partner will act like me (3)	<i>n</i> = 11 1. Guaranteed pay-out (10) 2. Maximum pay-out possible (3) 3. Partner will act like me (3)
White Females <i>n</i> = 24	<i>n</i> = 11 1. Mutually beneficial (6) 2. Against suckering partner (3) 3. Do not need money (3) 4. Gender of partner (3) 5. Partner will act like me (3)	<i>n</i> = 13 1. Guaranteed pay-out (10) 2. Maximum pay-out possible (6) 3. Partner is a stranger (3)
Black Males <i>n</i> = 24	<i>n</i> = 15 1. Mutually beneficial (10) 2. I am a good person (4)	<i>n</i> = 9 1. Maximum pay-out possible (6) 2. Guaranteed pay-out (4)

Table 5-2 continued

Experiment Group	Reasons for cooperation	Reasons for defection
Black Females <i>n</i> = 24	<i>n</i> = 18 1. Mutually beneficial (7) 2. I am a good person (4) 3. Partner will act like me (4) 4. Moral/altruistic choice (3) 5. Do not need money (3) 6. Guilt avoidance (3)	<i>n</i> = 6 1. Guaranteed pay-out (3) 2. Maximum pay-out possible (3)
Cross-race White Males <i>n</i> = 12	<i>n</i> = 8 1. Mutually beneficial (5)	<i>n</i> = 4 1. Economically rational (3) 2. Guaranteed pay-out (2) 3. Safest option (2)
Cross-race Black Males <i>n</i> = 12	<i>n</i> = 11 1. Mutually beneficial (8) 2. I am a good person (3) 3. Moral/altruistic choice (3)	<i>n</i> = 1 1. Partner is a stranger (1)
Cross-race Black Females <i>n</i> = 12	<i>n</i> = 8 1. Mutually beneficial (7) 2. Partner will ace like me (4)	<i>n</i> = 4 1. Guaranteed pay-out (3)
Cross-race White Females <i>n</i> = 12	<i>n</i> = 7 1. Mutually beneficial (4) 2. Nothing to lose (3) 3. Defecting is greedy (3)	<i>n</i> = 5 1. Guaranteed pay-out (5) 2. Safest option (2)

*Frequency distribution of responses is in parenthesis after each reason for cooperation and defection.

*Multiple responses were counted for participants who provided them.

CHAPTER 6 CONCLUSION

Though experimental games such as the Prisoner's Dilemma have long been popular, questions concerning their relevance to real-life settings and their general lack of theoretically grounded hypotheses have contributed to the results of gaming studies being largely ignored by social scientists outside the field of experimental gaming (Pruitt & Kimmel 1977). Despite this disregard, experimental games are valuable in studying social dilemmas in part because they permit precise measurements of elusive variables such as extent of cooperation, and because they allow hostile and competitive behavior to transpire without injury to participants or their relationships (Pruitt & Kimmel 1977).

The need to comprehend social dilemmas is of critical importance since as Van Lange and Messick note, "the functioning of societies, groups, and relationships is perhaps most strongly challenged by social dilemmas... because the well-being of these larger units is threatened when most or all individuals pursue their own well-being rather than the collective well-being" (1996:93). In the modern era, technological advancements in nuclear and biological weaponry, communications systems, and industry have created with them new social dilemmas in which defection's mutually deficient outcomes (and the human suffering those outcomes may entail) take place on a global scale. Since the well-being of much of humanity lies in our ability to cooperate on major social dilemmas, we must understand and be capable of overcoming socially constructed differences in race, gender, ethnicity, nationality, ideology, and religion. As stated by civil rights leader Martin Luther King Jr., "We must learn to live together as brothers or perish together as fools" (1964).

Keeping in mind the need to employ theoretically grounded hypotheses to uncover the racial and gender intricacies of social dilemma cooperation, the aims of this study consisted of:

(1) determining if Black college students, as members of a subordinated group, are more likely to cooperate in a social dilemma than are White college students who are members of the dominant group; (2) determining if female college students are more likely to cooperate with each other in a social dilemma than are male college students; (3) exploring the reasons and rationale given by respondents for cooperation or defection and (4) testing if levels of trust and expectations of a game partner's decision differ between race and gender groups.

In regard to the first aim, this study provides support for the hypothesis that members of subordinated racial groups are more likely to cooperate in a social dilemma than are members of a racially dominant group. In the constructed social dilemma employed by this study, quantitative analyses demonstrated that Blacks had both higher intra-group cooperation rates than did Whites (69% intra-group cooperation for Blacks compared to 50% for Whites) and significantly higher overall cooperation rates than did Whites (72% overall cooperation for Blacks compared to 54% for Whites). In other words, Black participants were more likely to cooperate with their game partner (irrespective of that game partner's race) than were White participants. This finding lends limited support to the theory that Blacks have developed a culture of cooperation as a response to White racism, and additionally suggests that Blacks (especially Black males) are willing to extend that culture of cooperation to include Whites.

With regard to the second aim, overall gender cooperation levels did not significantly differ between males (65% cooperation) and females (61% cooperation), although the cooperation rates in the Black female experiment group (75% cooperation) and White female experiment group (46% cooperation) did. These differing levels of female cooperation by race suggest that in the United States cultural factors—such as race and religiosity—play a more important role than gender in a participant's decision to cooperate or defect. These differences

also potentially reflect an important intersectional difference in the way women of different racial groups are influenced by gender subordination. In this, subordination may be leading Black women to cooperate at higher rates and White women to defect (mostly out of fear) at higher rates when presented with a monetary social dilemma.

With regard to the third aim, it was found that although the reasons and rationale given by participants in different racial and gender experiment groups for cooperation and defection were mostly similar, minority racial and gender group members were more likely to account for their minority group status in their cooperation/defection decision. This greater awareness of race and/or gender group status by minority group members, coupled with the higher cooperation rates of Black participants, lends support to the claim that experiences of subjugation (such as McCormick and Franklin's [2000] inclusionary dilemma) and the increased group awareness that they generate can manifest themselves as increased minority group cooperation in social dilemmas.

Furthermore, the finding that White women had the lowest cooperation rates of any race and gender experiment group can be interpreted to mean that most White women do not see themselves as subjugated. This interpretation of the data is consistent with the work of Lengermann and Wallace (1985) who argue that White women are less likely to see themselves as an oppressed minority group than are Black women. Additionally, it was found that Black participants were more likely to view the decision to cooperate or defect as a moral issue and as a reflection of character, than were Whites. This finding is likely correlated with the significantly higher levels of religiosity reported by Black participants compared to White participants.

With regard to the fourth aim, quantitative analyses revealed no significant race or gender differences on the trust variable and no gender differences on the variable measuring expectation

of game partner's cooperation decision. There was, however, a statistically significant difference between Black and White participants' expectation of game partner's cooperation decision when participants who indicated they were uncertain as to whether their game partner would cooperate or defect were excluded from the cross-tabulation. With participants who reported being "uncertain" filtered out, 72% of the remaining Black participants believed their game partner would cooperate compared to only 56% of White participants. Like the findings on cooperation rates, this finding also suggests that subjugation increases a group's cohesiveness and ability to work together in social dilemmas.

Lastly, content analyses on the trust and expectation variables revealed that among males in the study, Whites were more inclined to report making judgments based on physical appearance when playing a member of their same racial group, but refrained from mentioning physical appearance when paired with a Black game partner. Possible explanations for White males omitting mention of the physical appearance of Black game partners is that race is considered by Whites to be a taboo topic, and that references to the physical appearance of a Black game partner may be interpreted as racist.

Unlike most previous studies employing the Prisoner's Dilemma, the present study did not rely on a sample composed almost exclusively of White participants and was therefore able to generate insights into Black same-race and cross-race social dilemma cooperation and defection. Additionally, the methodological decision to assign participants to one of six race and gender groups allowed for cross-race group comparisons and for analyses of how the intersection of race and gender influences social dilemma cooperation and defection decisions. Other methodological advantages of the present study included the use of a single-shot rather than multi-shot game, and the utilization of theoretically based hypotheses. Both of these

methodological design elements served to improve the validity and generalizability of the study's findings.

Compared to previous Prisoner's Dilemma research on cross-race pairs, this study's findings on racial cooperation contradict many of the earlier studies conducted in the 1960's and 1970's that showed lower levels of cross-race cooperation compared to same-race cooperation. Nonetheless, this study's findings coincide with the most recent study of Heider and Skowronski (2007), which produced results that were the exact converse of the earlier studies. This reversal, coupled with the finding that White males refrained from referring to the physical appearance of Black game partners, may be evidence of a societal shift toward less race-based discrimination. However, an equally plausible and less optimistic interpretation of the cross-race findings is that they merely reflect a desire among participants to appear non-racist. As Heider and Skowronski have noted, this latter interpretation suggests that White participants in the study "were aware of their potential prejudice and were overtly trying not to treat the African American partner poorly" (2007:61).

Additionally, these findings may also be evidence of Bell's (1980) *Interest Convergence Hypothesis* whereby Whites realize it is in their interest to cooperate with Blacks for a mutually beneficial economic outcome. This study's findings on racial cooperation add to the racial relations and social dilemma literature by showing both that (1) racial minority group status positively correlates with social dilemma cooperation and (2) that anti-racism may be influencing Whites' cooperation/defection decisions—in favor of increased cooperation—when they are paired with a Black game partner.

On the question of gender cooperation in the Prisoner's Dilemma, this study like most before it, suggests no overall difference in cooperation levels by gender. This, however, does not

necessarily imply that gender does not play a role in social dilemma cooperation since many studies conducted at other times and places have shown that it does. What the lack of overall gender difference implies, rather, is that cultural difference, including differences in gender socialization and levels of patriarchy and subjugation, are more important to social dilemma cooperation than is the biological classification of female or male.

Considering that the sample was composed entirely of undergraduate college students, this study's findings may also be indicative that U.S. anti-discrimination educational curriculums, programs, and policies are reducing overt discrimination against Blacks. Furthermore, the findings imply that minorities are more likely to account for their minority group membership in social dilemma decision-making, and that among Whites, concerns about political correctness may suppress competitive behavior toward Blacks and make the mentioning of race in formal settings taboo.

The finding that Blacks have significantly higher same-race and overall cooperation rates than do Whites, may be evidence that Black students at predominantly White universities are collectively resisting experiences of subjugation and/or alienation through cooperative strategies that emphasize group interests over individual interests. In this, greater Black cooperation in this social dilemma may in part be the result of coping strategies developed by Black students to overcome social-structural and institutional hurdles faced by students of color.

The policy implications of the above findings are limited by the usual issues that arise when trying to generalize from an experimental setting to a target setting and by the variation in behavior that different types of social dilemmas may elicit. With this in mind, any attempts at generalization should be made cautiously and should be limited to social dilemmas that involve the allocation of finite resources such as those that often occur in the economic, social, political,

and interpersonal arenas. In these arenas, the most practical implication of this study centers on the finding that racial domination, be it in the form of racism, discrimination, subjugation, and/or exploitation, increases a groups awareness of its minority status and concomitantly also increases its cohesiveness and likelihood of social dilemma cooperation. Researchers from the various fields that employ games theory, social dilemma theory, social psychological theory, rational choice theory, and symbolic interaction theory may find the results of this study relevant to their work. Additionally, policy makers and activists in education, government, the military, the labor movement, non-governmental organizations and in other sectors that require an understanding of the intricacies of social dilemma cooperation and defection may also find this study useful. Considering this is one of the few studies to utilize Black participants in the examination of social dilemma behavior and to provide cross-race comparisons of social dilemma cooperation and defection rates, these findings should not be overlooked.

Suggestions for future Prisoner's Dilemma and social dilemma research include the need for researchers to account for and study the religiosity levels of participants in their sample. As discussed in Chapter 4, the intersection of race and religiosity complicate this study's findings. Based on the theoretical rationale that grounds this study's hypotheses, the observed differences in racial cooperation are likely the result of shared experiences of minority group subjugation. However, the significant differences in levels of religiosity by race make it feasible that observed racial differences in cooperation are in actuality the product of differences in levels of religiosity. In addition to the need to account for the influence of religiosity, the need to incorporate significantly more racial minority group participants into future Prisoner's Dilemma studies is also great. Latinos and Asian-Americans in particular are two large and growing US minority groups that have been habitually ignored by Prisoner's Dilemma researchers. Corresponding

with a greater emphasis on racial minority groups' participants, more research needs to be conducted to corroborate the findings of this present study. In the written responses to this study's questionnaire, much about the racial factors that influence cooperation/defection was left unsaid. Qualitative methods such as in-depth interviews and focus groups should be utilized to uncover richer data on the more covert factors that influence a participant's cooperation/defection decisions.

Quantitatively, games other than the Prisoner's Dilemma, such as ones based on monetary ultimatums, should be employed to measure racial social dilemma cooperation/defection. Doing so could not only reinforce, but also speak to the external validity of the findings presented here. Also, employing a sample composed exclusively of undergraduate university students is a limitation in this study that future research should address by drawing from a more diverse pool of participants. The uniqueness of the university environment may have influenced this study's outcome in ways that limit broader generalizability.

The focus of the present research has been to use the Prisoner's Dilemma to identify the links between race, gender, and levels of cooperation, trust, and expectations of a partner in social dilemmas. However, due to a limited amount of research employing games theory to study race relations, many questions still remain unanswered. By employing games similar to the one adapted for this study, future researchers could gauge racial discrimination by comparing intra- and inter-race cooperation rates for a given school, organization, town, or city. Additionally, these results could be compared across time and place, providing hard data on the relative levels of societal racial discrimination. In this, the application of social decision making games to measure racial discrimination would be useful in that they permit hostile and aggressive

behavior to transpire without harm to participants or as Pruitt and Kimmel put it, “these games permit conflict without tears” (1977:366). Furthermore, these games have the added advantage of providing researchers with a way to measure racial discrimination without revealing what is being measured to the participants of the study (who may otherwise inadvertently taint the results). Finally, the potential for games in general and the Prisoner’s Dilemma in particular to be utilized as a barometer of institutional and societal levels of racial discrimination is great and should be further explored.

APPENDIX A
MEASUREMENT INSTRUMENT

The following is a game in which you will have the opportunity to earn money for your participation in this social decision making study. You will be playing the game alongside another player (who is the person you just met). The game is simple; each of you can decide to cooperate with each other or to defect and work against one another. Be aware that there are benefits and risks attached to both cooperation and defection. The game's payout is as follows:

- If you both cooperate you each receive \$6.
- If you both defect you each receive \$3.
- If one player cooperates and the other defects, the person who cooperated will receive \$0, and the person who defected will receive \$9.

Game

		Other Player	
		Cooperates	Defects
You	Cooperate	\$6	\$9
	Defect	\$0	\$3
		Total \$12	Total \$12
		Total \$9	Total \$6

1. Please circle one of the following choices: Cooperate or Defect

3. Do you feel like you can trust the other player? Why or why not?

Demographic Background

1. Gender: (circle one) Male Female

2. Age (in years) _____

3. How would you describe your racial or ethnic background? (circle all that apply)

Black (please specify) _____

African American _____

Asian (please specify) _____

White (please specify) _____

Caucasian (please specify) _____

Hispanic (please specify) _____

Latino (please specify) _____

Other (please specify) _____

4. College classification (please circle one)

a. freshman b. sophomore c. junior d. senior e. graduate student

5. College Major? _____

6. How many siblings do you have? _____

7. How many years of education do you expect to complete? (circle one)

- a. B.A.
- b. M.A./M.S./M.B.A./M.S.W.
- c. J.D. (law)
- d. Med./Vet/Dent.
- e. Other Doctoral

8. What is your religious preference? (circle one)

- a. Protestant -- what denomination? _____
- b. Catholic
- c. Jewish
- d. Other – please specify _____
- e. Christian – what denomination? _____
- e. No religion

9. How religious are you?

- A. very religious B. average C. below average

10. What is your family's yearly household income? (circle one)

- a. \$25,000 and below
- b. \$26,000 - \$40,000
- c. \$41,000 - \$80,000
- d. \$81,000 – 160,000
- e. Above \$160,000

11. Are you affiliated with a fraternity or sorority? (circle one) Yes or No

If you answered yes, what fraternity or sorority _____

12. Which of the following political orientations best describes you? (circle one)

A. Conservative

B. Liberal

C. Centrist

D. Other (please specify) _____

13. What political party do you identify with?

A. Republican Party

B. Democratic Party

C. Green Party

D. I am independent

E. Other (please specify) _____

APPENDIX B
INFORMED CONSENT

Informed Consent
Protocol Title: Social Decision Making Study

Please read the consent form carefully before you decide to participate in this study

Purpose of the research study:

The purpose of this study is to examine how people respond to social dilemmas.

What you will be asked to do in the study:

You will be asked to meet another student and afterward play a quick social decision making game. You will also be asked to fill out a short survey.

Time required: 10-15 minutes

Risks and Benefits:

You may or may not experience minor feelings of anger or guilt after playing the game. We do not anticipate any other risks to you by participating in the study. The benefit of the study is the opportunity to earn \$0, \$3, \$6, or \$9 for completing the game and survey.

Confidentiality:

Your identity will be kept confidential to the extent provided by law and your name will not be used in any report.

Voluntary Participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study:

- Victor Romano M.A., Sociology Department, 3357 Turlington Hall, 786-338-1027
- Supervisor: Hernan Vera Ph.D., Professor of Sociology, 3229 Turlington Hall, 392-0265 ext. 232
- For questions about your rights as a research participant, please contact the UFIRB office at 352-392-0433 or PO Box 112250, Gainesville, Florida 32611.

Agreement:

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: _____ Date: _____

Principal Investigator: _____ Date: _____

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BIOGRAPHICAL SKETCH

Victor Eduardo Romano was born in 1979, in Queens, New York. The only son of Argentine immigrants, he grew up mostly in Miami, Florida, which is where he currently resides with his wife Kelli.