INTERRACIAL CONTACT: CONSEQUENCES FOR ATTITUDES, RELATIONSHIPS, AND WELL-BEING

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
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By

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The goal of the present research was to advance understanding of how racial attitudes affect, and are affected by, relatively long-term interracial relationships. Specifically, the goal was to understand the fundamental processes by which automatically-activated racial attitudes exert their influence and serve to simplify (or complicate) daily life, and in turn how such interracial experiences affect racial attitudes. Natural field experiments were conducted in the college dormitory housing system and took advantage of the fact that students are randomly assigned to their roommates if they do not specifically request a roommate. The dormitory system was also experiencing a housing crunch, so students could not easily change rooms. This allowed for an experimental test of the contact hypothesis in a situation involving long-term, daily contact.

The first experiment was intended to examine whether the racial attitudes of a White student randomly assigned to an African-American roommate grew more positive as a consequence of the relationship. Participants were White freshmen who had been randomly assigned to either a White or African-American roommate. Students participated in two sessions during the first and last two weeks of their first quarter on campus. During these sessions, participants completed questionnaire packets,
included questions about roommate satisfaction and involvement. Participants also completed an implicit measure of racial attitudes. Participants reported less satisfaction and less involvement with their roommates when in an interracial room. However, automatically-activated racial attitudes and intergroup anxiety showed differential change over time, with those students in the interracial rooms becoming more positive and less anxious toward African-Americans than those in same-race rooms. Thus, the results suggest that interracial roommate relationships, although generally less satisfying and less involving, do produce benefits.

Based on the indication that Interracial roommate situations may be more stressful than same race situations, the second study addressed the effect of Intergroup contact and interactions on stress and health. At a more basic level, it also addressed the functional value of attitudes, specifically having an attitude that matches the situation. The procedure was similar to the first experiment with the addition of several measures of stress and health. Overall, there were no differences in stress and health between participants in interracial and same-race rooms. However, within interracial rooms, automatically-activated racial attitudes did affect well-being, at least among those who began the academic year feeling relatively distressed. Participants who possessed more positive racial attitudes reported improved well-being later in the school year, whereas health concerns were accentuated for those with more negative racial attitudes. The results provide evidence for the functional value of attitudes and having an attitude that is appropriate for a specific situation.
Dedicated to my family
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PUBLICATIONS

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INTRODUCTION

Over the past few decades a great deal of research has focused on understanding prejudice, with hopes of illuminating how intergroup conflict might be reduced. One of the primary theories regarding prejudice reduction is the “contact hypothesis” (Allport, 1954; Pettigrew, 1998). The underlying assumption of the theory is that prejudice stems from a lack of knowledge and exposure to different groups. Thus, increased interaction between members of different groups should allow individuals to gain information about other groups and lead to a reduction in hostility and prejudice between the two groups (see Brewer & Brown, 1998; Pettigrew, 1998; Pettigrew & Tropp, 2000, for reviews). The more contact between groups, the more the group members can learn about their similarities, rather than their differences, and disconfirm negative beliefs and feelings.

Allport (1954) posited that four conditions were necessary to facilitate the success of intergroup contact: equal group status in the contact situation, intergroup cooperation, common goals, and support of authorities, law, or custom. Equal group status was believed to help by reducing some of the differences between the groups. Particularly, equal status was intended to overcome the effect of negative stereotypes often associated with the lower status group, which could accentuate group conflict and bias. Intergroup
cooperation and common goals were important in order to overcome competition between the groups and encourage the group members to rely on one another to achieve their shared goals. Sherif and colleagues (1961) demonstrated the importance of cooperation and common goals in the classic Robbers Cave experiment, in which young boys were separated into two groups and kept apart to allow group identities to form. When the groups were finally allowed to interact, hostility toward the other group was displayed. It was only under conditions in which the groups had to work together to achieve a goal that the hostility was overcome. Finally, the support of authorities was posited to help intergroup contact by defining social norms and serving as a means of influencing individuals’ behavior.

Since Allport’s conception, several other factors have been proposed as important for the facilitation of intergroup contact. Two especially noteworthy factors are intimacy and intergroup friendships. The first refers to the opportunity for personal, intimate interaction between the individual group members which allows for self-disclosure and social comparison (Amir, 1976; Brewer & Miller, 1984; Miller, 2002). Through the sharing of intimate information, trust and familiarity are encouraged, and individuals are more likely to overcome perceived differences and see more similarity between groups. Second, the formation of friendships (Pettigrew, 1998) is a critical contributor to any positive change in prejudice that emerges from intergroup contact. For example, Pettigrew’s (1997) structural equation analyses of cross-sectional data indicate that the path from friendship to reduced prejudice is stronger than the reverse path, i.e., that from prejudice to fewer intergroup friends. Thus, providing a situation in which interaction is
intimate and friendships can easily form should increase the effectiveness of intergroup contact in reducing prejudice.

A great deal of research, from archival studies to laboratory experiments, has been conducted in search of evidence to support the contact hypothesis and to understand the conditions necessary for intergroup contact to be successful (Pettigrew, 1997; Pettigrew & Tropp, 2006). Indeed, a recent meta-analysis by Pettigrew and Tropp (2006) of over 500 studies found that intergroup contact is generally beneficial. However, despite the long history of the contact hypothesis and the supportive results, the theory has had a troubled past and there are still several shortcomings (Brewer & Gaertner, 2004; Dovidio, Gaertner, & Kawakami, 2003; Miller, 2002; Pettigrew, 1998; Pettigrew & Tropp, 2006).

First, a great deal of the intergroup contact research is correlational at best (Pettigrew, 1998). Most research relies on self-reports of intergroup involvement and friendships. Very few studies have actually manipulated contact. Thus, much work is characterized by the problem of self-selection. The results of such work and any benefits of intergroup contact found may then stem from the fact that individuals who are less prejudiced are more likely to engage in interracial interactions. Less prejudiced individuals may be more open to the situation and more likely to change their views of another group. More prejudiced individuals may simply avoid such situations and thus the effect of intergroup contact on such individuals is not known. The individuals for whom intergroup contact would ideally benefit are choosing not to partake and thus the validity of the theory is not being tested. The lack of experimental research prevents definitive conclusions about the direction of causality and detracts from an understanding of the mechanisms underlying any outcomes of intergroup contact.
Another problem with the research to date is that much of it is cross-sectional (Pettigrew, 1998; Pettigrew & Tropp, 2006). Little contact research is longitudinal in nature. In particular, the few experiments that have been conducted are generally short-term in nature (one exception will be discussed shortly i.e. Van Laar, Levin, Sinclair, & Sidanius, 2005). Most experimental work has consisted of a one to two hour laboratory session in which participants interact with an individual they believe to be an outgroup member. For example, Brown and colleagues (1999) had British participants work with a German confederate on a communication task in which they had to direct each other through a series of city streets using a map. Wolsko and colleagues (2003) had White participants interact with Latino confederates on a team communication task in which team members had to effectively work together to ensure that they accurately passed information from one team member to another. In general, the interaction in such lab experiments involves a cooperative task in which individuals must work together to reach a common goal. After completing the task, participants are asked to evaluate their interaction partner and/or their interaction partner’s group. Generally, group evaluations are more positive after interacting with a member of the given group. The problem with such studies is that the extent to which any reductions in prejudice after intergroup contact endure over time are unknown. Additionally, it is unclear whether any benefits observed in the laboratory setting at the level of evaluative reports will generalize to behavior in other situations.

With the noted benefits of intergroup friendships for prejudice reduction (Levin, Van Laar, & Sidanius, 2003; Paolini, Hewstone, Cairns, & Voci, 2004; Pettigrew, 1997; Vonofako, Hewstone, & Voci, 2007), one might assume that extended contact would be
all the more beneficial. However, the little work that has been conducted regarding long-term interracial contact has provided mixed results. A principal situation used to examine the effects of long-term contact was in schools following the implementation of a desegregation policy. It was expected that integrating children of different ethnicities would lead to a reduction in prejudice. Unfortunately, the initial studies of the effectiveness of desegregation provided very unpromising results (see Stephan, 1978, for a review). Very few studies found decreases in prejudice. In fact, many found increases in prejudice. These findings were interpreted by many as having cast considerable doubt on the contact hypothesis. However, the school environment after desegregation may not have provided conditions to encourage the benefits of interracial contact (Schneider, 2004). Socioeconomic differences between African-American and White students would have hindered perceptions of equal status among the students. Many communities did not support segregation and felt forced to integrate their school systems, so there was a lack of support from the public. Consequently, the atmosphere inside the classrooms was not necessarily conducive to positive interactions and experiences for the students.

Aronson and colleagues (1978) demonstrated with the jigsaw classroom the complexity of creating a positive, cooperative experience in an integrated school. They found that assignments had to be structured very carefully to ensure equal participation in group work. Only under such circumstances were there benefits to intergroup contact.

In sum, research on long-term intergroup contact has been limited and produced inconsistent results. Correlational work concerning friendships suggests that extended contact is beneficial. However, the extended contact stemming from school
desegregation has not produced generally positive outcomes. With such inconsistent findings, it is unclear what effect long-term intergroup contact has on prejudice reduction.

A real world situation that can address the previously stated problems of research concerning the contact hypothesis is a dormitory roommate relationship. Many students are randomly assigned to their college roommates, which leads some students to be assigned to roommates from other groups (intergroup rooms) while others are assigned to roommates from their own group (same-group rooms). These conditions provide an ideal situation for the effects of intergroup contact to be studied. Self-selection concerns are eliminated, and conditions for a natural field experiment are created. Also, the college housing situation allows for longitudinal research. Students are generally expected to live with their roommate for at least one academic year, so the situation calls for extended exposure to an out-group member for those in an intergroup rather than a same-group room. As such, long-term intergroup contact and the persistence of prejudice reduction can be explored. Perhaps more importantly, the longitudinal nature of the situation allows for a better understanding of the underlying mechanisms contributing to prejudice reduction. In sum, dormitory roommate relationships provide circumstances that help to overcome some of the criticisms of past intergroup contact research.

The college dormitory housing situation also meets many of the conditions considered to facilitate the benefits of intergroup contact. First, individuals are generally considered to be of equal status. They are all entering into the situation as students and peers. Second, it is ideally a cooperative environment, with individuals working toward a common goal. Students have to work together to achieve a suitable living situation. Third, the university may be seen as an authority that supports the intergroup contact as
representatives of the institution assigned students to their rooms and oversee the housing system. Finally, the dormitory situation also provides a very intimate setting in which frequent and personal interactions may occur, while also providing an ideal opportunity for friendship to form. Thus, the dormitory housing situation should encourage positive intergroup interactions and reduce prejudice.

Recent research has taken advantage of the random pairing of roommates in college dorms to provide a truly experimental test of the contact hypothesis (Van Laar, Levin, Sinclair, & Sidanius, 2005). Students were tracked over a five year span, starting the summer before their freshman year of college. During that summer and the spring quarter of each subsequent academic year, participants completed surveys about the ethnicity of their roommates, friends, and dating partners, as well as questions about group bias and prejudice. Those students who were placed in an interracial roommate relationship earlier in their academic career reported more positive affect toward different ethnic groups, marginally less symbolic racism, and more friendship heterogeneity. Overall, interracial dormitory relationships proved to be beneficial, supporting the contact hypothesis. However, the means by which living with a roommate of another ethnicity affected prejudice are not known. Van Laar and colleagues (2005) did not assess the actual roommate relationship and the extent of contact between the roommates.

Presumably, a key contributor to these positive results was that the interracial relationships were themselves successful and a positive experience. The students developed a satisfactory living situation and probably became friends, which led to the observed benefits. However, are such successful interracial relationships to be expected? To the contrary, some research indicates that interracial dormitory relationships are less
satisfying and more problematic than same-race dormitory relationships (Phelps, Altschul, Wisenbaker, Day, Cooper, & Potter, 1998; Towles-Schwen & Fazio, 2006).

Phelps and colleagues (1998) found that White freshmen with an African-American freshman roommate believed that they were less compatible with their roommate than White freshmen randomly assigned to a White roommate. Towles-Schwen and Fazio (2006) found that White freshmen randomly assigned to an African-American roommate spent less time together, were less socially involved with one another’s networks, and were less likely to continue living with that roommate than White freshmen randomly assigned to another White freshman. By the end of the first semester at college, 28 percent of the interracial roommate relationships had dissolved, as compared to 9 percent of the same-race relationships. If interracial relationships quickly dissolve, or are viewed as incompatible, the likelihood of friendships forming would not be high. Thus, the potential benefits of contact may not come to fruition. Despite the benefit of random assignment to dormitory rooms evident in the Van Laar et al. (2005) investigation, attention still needs to be paid to the actual intergroup relationship to understand how prejudice reduction occurred and who is experiencing such benefits.

Another issue that has recently been raised with regard to intergroup contact research is the use of explicit measures to assess prejudice (Aberson, Shoemaker, & Tomolillo, 2004; Henry & Hardin, 2006; Vonofakou, Hewstone, & Voci, 2007). Most research in the area has relied on explicit reports of attitudes toward different groups. There are of course many interpretational problems inherent to self-report measures (Schwarz, 1999). However, of more concern in the present case is the very topic on which intergroup contact researchers are asking participants to report. Explicit measures
of racial bias and prejudice raise further considerations of self-presentational concerns and motivational factors that may lead individuals not to respond truthfully on such scales (Dovidio & Gaertner, 1991; Gaertner & Dovidio, 1986). Fazio’s (1990) MODE (Motivation and Opportunity as Determinants) model provides clear reasoning as to why explicit measures of prejudice may be less sensitive and less accurate than implicit measures of prejudice.

The MODE model (Fazio, 1990; Fazio & Towles-Schwen, 1999) distinguishes two classes of attitude-to-behavior processes. The difference depends on whether an individual’s behavior is due to their spontaneous reaction to the attitude object or whether the situation allows the individual to deliberate about his/her behavior options. The model posits that upon encountering an attitude object, an individual’s overall evaluation of the object may be spontaneously activated. This automatically-activated attitude will influence how the person construes the object in the immediate situation and, ultimately, will affect the person's behavioral response. However, if the situation provides an individual with the opportunity (i.e., time and resources) and the individual is motivated, attitudes may guide behavior through a more deliberative process. That is, individuals may analyze the situation and determine what course of action is more suitable and appropriate. In this case, the behavioral decision may not directly match the individual’s attitude.

With regard to prejudice, there are several motivational factors that can lead individuals to alter their behavior and self-reports so as not to be considered prejudiced (Dunton & Fazio, 1997; Plant & Devine, 1998). Some people for whom negativity is automatically activated in response to African-Americans are disturbed by such
negativity and are motivated to control their prejudiced reactions (Devine, 1989; Devine, Monteith, Zuwerink, & Elliot, 1991; Monteith, 1993). Others are not. Consideration of automatic and controlled processing in the MODE model allows for predictions as to when an individual’s behavior will be attitudinally-consistent. First, the behavior of those for whom negativity is automatically activated but who, at the same time, are motivated to control prejudiced reactions will depend on whether the situation provides sufficient opportunity for them to counter their attitudes. With a lack of opportunity, these individuals will be more likely to express negative judgments that match their spontaneous reactions. However, if such individuals have the opportunity, they will monitor their behavior and respond less negatively. Individuals for whom negativity is automatically activated but who lack any motivation to control those reactions are predicted to exhibit negative behavior. Such people simply have no qualms about experiencing or expressing negativity. Finally, there are people for whom negativity is not automatically activated or for whom positive evaluations are automatically activated. These individuals should not, of course, show evidence of negative judgments or behavior.

Returning to the use of self-report measures, it is difficult to interpret positive evaluations and judgments on explicit measures. Generally, individuals will have the opportunity to monitor their responses on a self-report measure if they are so motivated. Thus, positive responses may indicate a person’s automatically-activated attitude toward a group, or the response may instead be due to a person’s desire not to be considered prejudiced. Thus, explicit measures of prejudice and bias are not necessarily accurate indicators of individuals’ automatically-activated attitudes.
The benefits of intergroup contact that have been found using explicit measures may be due to an increased salience of motivational factors rather than prejudice reduction at the level of automatic activation. Placing individuals into a situation in which they are to interact with a member of a different group may make salient and strengthen motivations to control prejudiced behaviors. In an intergroup setting, some individuals will be more attentive to monitoring their behavior and countering their automatically-activated attitudes. Consequently, the benefit of intergroup contact found with explicit measures may be exaggerated and due to motivational factors rather than reduction in prejudice at an automatic level. To better address the extent of prejudice reduction then, implicit measures of attitudes would serve as a clearer assessment of an individual’s spontaneous evaluation of a given group, and there would not be the issue of motivational factors influencing reports of prejudice.

The goal of the first experiment then was to experimentally test the contact hypothesis while addressing several of the previously stated shortcomings of research in the area. First, the study took advantage of random assignment to college dormitory rooms, which provided a natural, field experiment. Specifically, the lesser role of self-selection factors permitted the examination of whether the racial attitudes of a White student randomly assigned to share a room with an African-American grow more positive as a consequence of the relationship. Self-selection concerns were also reduced due to the fact that the OSU housing system was experiencing a “housing crunch” during the period of data collection. That is, there was a room shortage on campus which diminished the opportunity for students to move from one room to another during the academic quarters. Indeed, analyses of archival data from previous academic years found
that roommate dissolution rates were much lower at OSU than observed by Towles-Schwen and Fazio (2006) at Indiana University (Shook & Fazio, 2004). The OSU situation, then, required that students ”stick it out” or maintain their assigned living situation for at least a quarter or until other housing arrangements could be made. Thus, the roommate relationships were all the more ideal in terms of testing long term effects of contact, and self-selection was not so severe as to jeopardize the internal validity of the experiment.

As the study permitted an experimental test of the effect of a long-term friendship opportunity on racial attitudes, particular attention was given to the assessment of the roommate relationship and changes in the relationship. Consequently, the relationship between the quality and extent of actual intergroup contact and prejudice reduction could be analyzed. The experiment also uniquely focused on the impact that such interracial contact had on automatically-activated racial attitudes and motivation to control prejudiced reactions. Thus, the study permitted a longitudinal examination of the association between the quality of an interracial roommate relationship and change in racial attitudes and/or related motivational concerns.

To explore the effect of interracial contact on automatically-activated attitudes, a sample of White freshmen who had been randomly assigned (by the Office of Residence Life, per their usual practice) to share a room with an African-American freshman, and a comparison sample of Whites assigned to another White, were recruited over the course of two academic years to participate in a two session experiment presumably concerned with adjustment to college. The experimental sessions were conducted within the first and last two weeks of the fall quarter. During each session, participants’ automatically-
activated racial attitudes were assessed as well as their motivation to control prejudice. Several measures were also incorporated to assess how involved and satisfied participants were with their roommates.

From the study, experimental comparisons between interracial and same-race rooms could be made at each time period and with respect to change across time. The experiment also allowed for a test of how racial attitudes affected relationship assessment and, in turn, how relationship variables affected prejudice. Thus, the first experiment was an experimental test of the contact hypothesis that addressed several of the shortcomings associated with past research. The experiment also explored the association between ongoing interracial relationships and prejudice.

The second experiment was intended to explore the broader consequences of intergroup contact for the individual and, in particular, the consequences of possessing attitudes that are maladaptive for a given situation. More specifically, the study explored the potential stress and health consequences of an interracial roommate situation, both relative to what occurs for White-White dyads and as a function of automatically-activated racial attitudes that interfere with the situational requirements. Thus, the study addressed further consequences of intergroup contact and interactions, and at a more basic level, addressed the functional value of attitudes.

The basis for this experiment was the indication that interracial roommate situations may be more stressful than same race situations, for some people. Previous research found that White students living with an African-American student were less satisfied and less involved with their roommate relationship than those randomly paired with another White, and more likely to experience dissolution of the relationship
(Towles-Schwen & Fazio, 2006). Also, analysis of OSU archival data revealed that same-race White and same-race African-American roommate relationships were more successful (i.e., less likely to dissolve) than interracial roommate relationships (Shook & Fazio, 2004). As a whole, these findings imply that interracial pairings are more problematic and thus may be more stressful for White freshmen than same-race pairings. If interracial roommate situations are more stressful, the situation may have consequences for the students’ physical and psychological health.

The effect of social and psychological stressors on health and well-being are well documented (see Glaser, 2005, and Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002, for recent reviews). For example, students tend to report more psychological distress (Sausen, Lovallo, Pincomb, & Wilson, 1992) and more illness (Glaser et al., 1987) around the time of final exams, a stressful time. Interested in the actual experience of illness and not just self-reports, Cohen (1994) exposed individuals to cold viruses. Individuals who reported more negative life events at the time, thus more stress, were more likely to actually become infected and contract a cold. Still other research has focused on caregivers and the connection between stress and well-being (Keicolt-Glaser, Malarkey, Cacioppo, & Glaser, 1994; Keicolt-Glaser, Marucha, Malarkey, Mercado, & Glaser, 1995). The stress of caring for an ill loved one has been related to fatigue, depression, health declines, and impaired immune responses to infection and healing. In sum, the evidence is striking as to the deleterious effects stress can have on an individual’s psychological and physical health.

With regard to college dormitory roommate relationships, there is tentative evidence available to suggest that a more stressful roommate relationship may have
negative health consequences. In a study involving two sessions across 3 weeks, Joiner, Vohs, & Schmidt (2000) found cross-sectional evidence that students whose roommates appraised them less positively reported more physical illness. The prospective findings were not as clear, but yielded marginally significant evidence of a causal link between social appraisal at time one and illness at time two. Thus, to the extent that interracial roommate pairings involve greater dissatisfaction, they may prove more stressful and adversely affect the students’ health as compared to same-race roommate pairings.

At a more focused level however, any such consequences are likely to be moderated by racial attitudes. An interracial living situation may be more stressful and lead to more negative health consequences for individuals with more negative racial attitudes. Research on the functional value of attitudes has illustrated the benefits that merely possessing accessible attitudes (of any valence) generally has for mental and physical well-being (Fazio & Powell, 1997). In this study, participants’ stress and health were assessed during the first two weeks of their freshmen year at college and again two months later. At the initial session, the accessibility of participants’ academically related attitudes (e.g., studying in the library, majoring in business) was also assessed. Fazio and Powell (1997) then tested whether health at time two was predicted jointly by stress and attitude accessibility at time one. They found that the detrimental effects of stress on health were attenuated among individuals who held relatively accessible attitudes toward the objects and issues central to their current life setting. Thus, there is value to knowing one’s likes and dislikes.

Functionally, attitudes allow one to navigate their social world without having to engage in effortful reflection (Fazio, 1995). In a series of experiments, the value of
having accessible attitudes for decision making was assessed (Blascovich, Ernst, Tomaka, Kelsey, Salomon, & Fazio, 1993; Fazio, Blascovich, & Driscoll, 1992). In these experiments, participants either rehearsed preference for abstract paintings, or they did not engage in any rehearsal. All participants then completed a speeded pairwise preference task in which they were shown two abstract paintings and had to indicate as quickly as they could which painting they preferred. It was found that individuals in the preference rehearsal condition tended to make faster, more accurate decisions in the pairwise judgment task and exhibited a smaller increase in blood pressure when performing the second task than participants in the control condition. These findings suggest that having accessible attitudes eases the demands on the person and eases decision making. With regard to an individual’s well-being, possessing accessible attitudes result in a freeing of resources that can help in coping with any stressors one is experiencing (Fazio & Powell, 1997).

The findings summarized above point to the value of having an accessible attitude, regardless of its valence. The interracial rooming situation is different in one important respect, however. Behavior is more constrained. Given limited flexibility with respect to room changes, a student needs to make the best of the situation. Hence, this is a case in which it is advantageous to have an attitude of a particular valence – one that facilitates the requirements of the situation. Automatically-activated negativity toward African-Americans is likely to prove maladaptive in a situation that calls for the development of a close relationship with a randomly-paired African-American roommate. Instead of proving functional, a negative attitude may exacerbate stressful reactions to the living situation and result in more negative consequences for health. Thus, a main goal
of the second experiment was to demonstrate that possessing an accessible attitude which matches a given situation is more adaptive and beneficial for navigating one’s social environment.

To address the questions of the functional value of attitudes that correspond to a situation and the potential differences in stress and health associated with intergroup contact, random assignment to college dormitory housing was again utilized. The procedure for the second experiment mirrored the first study, except for the addition of several physical and psychological health measures as well as an assessment of general stress. Random assignment to dormitory rooms allowed for an experimental comparison between interracial and same-race rooms to determine whether there were any differences in the stress and health of students in the two rooms at the beginning and end of the quarter and with respect to change over time. Focusing on the interracial rooms allowed for the test of attitude functionality, and whether the valence of one’s attitude given a specific situation influenced one’s health. In the case of the roommate situation, people for whom negativity is automatically activated in response to African-Americans, and yet find themselves rooming with one, may experience relatively more stress for a prolonged period of time. It was expected that students in such a stressful living situation would report more psychological and physical health concerns throughout the course of the quarter.

In sum, these two natural field experiments were intended to provide important insights regarding long-term interracial relationships. The first permitted an experimental test of the impact of interracial rooming on subsequent automatically-activated racial attitudes, as well as consideration of the prospective relation between relationship quality
at time one and racial attitudes at time two. The second addressed the causal effects of interracial roommate relationships on stress and physical and mental well-being. In addition, it permitted examination of an important question regarding the functional value of attitudes. Obviously, the interracial rooming relationship is a situation for which positive racial attitudes would prove much more adaptive than negative attitudes. The study tested the hypothesis that attitudes which are contrary to the requirements of a given situation elevate stress levels and, hence, have detrimental health consequences. Overall, this research extends our basic knowledge of intergroup contact and the functionality of attitudes.
CHAPTER 2

ATTITUDES STUDY

The present study was an experimental field test of the contact hypothesis. That is, the experiment tested the effect of a long-term friendship opportunity on racial attitudes, as well as providing a longitudinal examination of the association between the quality of an interracial relationship and change in racial attitudes. The study took advantage of random assignment of incoming freshmen to roommates if students do not specifically request to live with one another. Thus, the housing situation provides a true experimental field test. Also, the OSU dormitory system was experiencing a housing shortage, which diminished the opportunity to move from one room to another during the course of the academic year. Unlike previous work, students could not easily remove themselves from the living situation and avoid contact with their roommate. Thus, the reduced opportunity to change dormitory rooms permitted a better test of the benefits of intergroup contact and whether the racial attitudes of a White student randomly assigned to share a room with an African-American grow more positive as a consequence of the relationship.
Method

Participants. A sample of White freshmen randomly assigned to a White (N = 136) or African-American (N = 126) freshman were recruited in the beginning of the Autumn quarter of two consecutive academic years. Participants were contacted via e-mail or telephone and asked to participate in a two-session study concerning adjustment to college life. For their time, they received either $25 or research experience credit for an introductory psychology course.

Measures. The participants completed two one-hour experimental sessions, one within the first two weeks and the second within the last two weeks of their first quarter of college. During each session, participants completed questionnaires regarding roommate satisfaction, joint activities, time spent together, social network involvement, comfort with each others’ friends, group identification and typicality, intergroup anxiety, motivation to control prejudiced reactions, and racial attitudes. Participants also completed a computer task designed to assess racial attitudes unobtrusively (Fazio, Jackson, Dunton, & Williams, 1995). At the second session, participants also completed questions regarding social support, number of common friends with their roommate, and trait ratings about their roommates. These questions were not included in the first session to reduce the likelihood of participants realizing that the experiment was about their roommate relationship. (see Appendix A for the complete questionnaire packet). More detailed descriptions of the various measures are provided below.

Roommate Satisfaction. Participants were provided with seven statements about their roommate (e.g., “I am extremely happy with my roommate.”) and were asked to indicate the extent to which they agreed with each statement on a scale from 0 (Not at all)
to 9 (Very much). The seven items correlated highly with a minimum correlation of .64. Due to the strong relationship between the items, a composite score was calculated to represent roommate satisfaction (Cronbach’s alpha of .96).

*Joint Activities Interaction.* Participants were provided a list of eleven common activities (e.g., run errands, watch television) and asked to indicate the frequency with which they do each activity with their roommate on a scale from 0 (Never) to 8 (More than once per day). The eleven items correlated well with a minimum correlation of .29. Thus, a composite score was created to represent frequency of joint activities with roommate (Cronbach’s alpha = .90).

*Time Spent Together.* Participants were asked to indicate how much time they spent with their roommates in their dorm room each day on a scale from 0 (less than one hour) to 9 (nine hours or more). They were also asked to indicate how much time they spent with their roommates outside of their dorm room each day on a scale from 0 (less than half an hour) to 9 (four and one half hours or more). The two items correlated well with a minimum correlation of .65. The two items were averaged to represent how much time each participant spent with their roommate.

*Social Network Involvement.* Participants’ involvement in their roommates’ social networks and the roommates’ involvement in the participants’ social networks were assessed by determining how much social interaction there was between the two friendship networks. Participants were asked to indicate the two individuals with whom they spent the most time other than their roommate. They also listed the two individuals with whom their roommates spent the most time other than themselves. Participants then rated to what degree they interacted with their roommate and each of their roommate’s
friends and to what degree their roommate interacted with each of their friends on a scale from 0 (Don’t know each other) to 5 (Our friends are the same). A composite score aggregating across all pairings was calculated to represent the degree of involvement between the participants’ and their roommates’ social networks (Cronbach’s alpha = .71).

Comfort with Friends. Participants were asked to estimate how comfortable they were with their roommates’ friends and how comfortable their roommates were with the participants’ friends. The response scale ranged from 0 (Not at all comfortable) to 9 (Very comfortable).

Group Identification and Typicality. Participants were asked to indicate how strongly their roommates identified with OSU, their dorm, and their ethnic group. They were then asked to indicate to what extent their roommates were typical OSU freshmen, residents of their dorm, and members of their ethnic group. The response scale for each item ranged from 1 (Not at all identified/typical) to 9 (Very much identified/typical).

Intergroup Anxiety. Britt and colleagues’ (1996) intergroup anxiety toward African Americans scale was used to assess participants’ outcome expectancies when interacting with African-Americans. The scale consists of eleven items regarding anxiety from interacting with African-Americans (e.g., “I would experience some anxiety if I were the only white in a room full of blacks.”). Participants were asked to indicate to what degree they agreed with each statement on a scale from 0 (Strongly disagree) to 4 (Strongly agree). The necessary items were reverse coded, and the eleven items were averaged. Higher scores indicated greater intergroup anxiety (Cronbach’s alpha = .89).

Motivation to Control Prejudiced Reactions. Dunton and Fazio’s (1997) motivation to control prejudiced reactions scale (MCPR) was used to assess participants
desire to avoid dispute with or about African-Americans (restraint) and to not appear prejudiced (concern). The scale consists of seventeen items (e.g., “In today’s society it is important that one not be perceived as prejudiced in any manner.”). Participants are asked to indicate to what extent they agree with each statement on a scale from -3 (Strongly disagree) to +3 (Strongly agree). The necessary items were reverse coded and the factor scores for concern and restraint were calculated with higher scores indicating more concern or restraint.

*Feeling Thermometer.* One way participants’ racial attitudes were measured was with a feeling thermometer. Participants were provided with a list of 16 groups (e.g., Republicans, School Teachers, African-Americans) and were asked to indicate on a scale from 0 to 100 to what degree they liked or disliked the group. Scores between 0 and 50 were to indicate an unfavorable evaluation, and scores between 50 and 100 a favorable evaluation. Ratings of African-Americans were standardized relative to the responses to all of the groups in order to control for variations in the extremity of responses.

*Automatically-Activated Racial Attitudes.* Participant’s racial attitudes were also measured with a computer-based, priming procedure first developed in the mid-1980's (Fazio et al., 1986) and since used widely to study automatic attitude activation (see Fazio, 2001, for a review). The participants’ task is to indicate the connotation of an adjective as quickly as possible: does it mean "good" or "bad?" Prior to seeing the adjective, participants are presented with a prime which they have been told to study for a later recall test. Of interest is the latency with which the adjective judgment is made and, more specifically, the extent to which responding is facilitated by the prior presentation of a prime. The pattern of facilitation that is exhibited on positive versus negative
adjectives provides an indication of the individual's attitude toward the primed object. Relatively more facilitation on positive adjectives is indicative of a more positive attitude; relatively more facilitation on negative adjectives is indicative of a negative attitude. Furthermore, these estimates are obtained without the individual’s awareness that his or her attitude is even being assessed. The participant is not asked to consider his or her attitude toward the prime during the task. Yet, it is possible to infer the degree to which positive or negative evaluations are activated by the object.

When being used to assess racial attitudes, the procedure involves the presentation of photographs of African-Americans and Whites as the critical primes. The photos are presumably being presented on each trial as a secondary task intended to see whether the distraction might interfere with performance on the word judgment task. Participants are told to study each photo that is briefly presented at the beginning of a trial so as to be able to pick it out later, while at the same time indicating the connotation of the target adjective as quickly and accurately as possible. The procedure provides an unobtrusive measure of the attitudes automatically activated in response to the African-American faces, and research findings have established its predictive validity. The priming measure’s estimates of attitude have been found to predict various race-related judgments and behavior in a variety of studies (e.g. Fazio, Jackson, Dunton, & Williams, 1995; see also Bessenoff & Sherman, 2000; Dovidio et al., 1997), and to do so in an incremental fashion, i.e., over and above the variance accounted for by explicit, self-report measures.

In the present case, the procedure involved five phases. During the first phase, participants were simply presented with positive or negative adjectives and were asked to indicate as quickly as possible whether the word on the screen was good or bad. This
served as a baseline for latency to respond to each word. The adjectives presented consisted of 12 positive (e.g., likable) and 12 negative (e.g., awful) words. During each trial, the adjective appeared in the center of the screen for at most 1.75 s or until the participant responded. Participants completed two blocks of 24 trials with all 24 adjectives randomly presented during each block.

The second and third phase of the computer task served to bolster the cover story. In the second phase, participants were told to watch the computer monitor as a number of faces would flash on the screen. They were told to study the faces as their recall of the faces would be tested in the next phase. Participants were presented with 20 African-American, White, Asian, and Hispanic faces in two blocks, ten faces per block. In the third phase, participants’ recall of the faces was tested. Participants were presented with 20 faces in two blocks and told to indicate either “yes” they previously saw the face or “no” they did not previously see the face. Half of the faces were target faces from the previous phase and half were filler faces. Faces were presented on the computer monitor for at most 5 s or until the participants responded.

The fourth phase combined the two previous tasks and was the phase of interest. On any given trial, participants were presented with an African-American, White, Asian, or Hispanic face for 315 ms followed by a 135 ms interval before presentation of the target adjective. The adjectives appeared on the computer screen for 1.75 s or until participants responded. Participants finished a short practice block before completing four blocks of 48 trials. Each block consisted of 16 African-American faces and 16 matched White faces. The other 16 faces were filler faces. All 48 faces were randomly presented in each block, however a different adjective followed the faces in each block.
Each face was followed by two positive adjectives and two negative adjectives. The 24 adjectives from the first phase of the computer task were used.

The fifth phase was again simply to bolster the cover story. Participants were presented with faces on the computer screen and were asked to indicate whether they had previously seen each phase in the preceding task. Participants were presented with 24 faces. Half of the faces were from the previous task and half were novel faces.

**Social Support.** At the second session, Updegraff and colleagues’ (2002) social support scale was included in the questionnaire packet. Participants were asked to indicate how often their roommate engaged in eight different support-related activities (e.g., give you useful information or advise,) on a scale from 0 (Not at all) to 7 (A great deal). The appropriate items were reverse coded and a composite variable was calculated by aggregating the eight items. Higher scores indicated more social support.

**Number of Common Friends.** At the second session, participants were asked to indicate how many friends they and their roommate had in common on a scale from 0 to 9 (More than 8).

**Trait Ratings.** At the second session, participants were provided with a list of 20 positive and negative traits (e.g. kind, understanding, moody, distant) and were asked to indicate the extent to which each trait described their roommates. The response scale ranged from 0 (Not at all characteristic of my roommate) to 9 (Completely characteristic of my roommate). The negative trait items were reverse coded and a composite roommate evaluation score was calculated by aggregating the responses to the 20 traits (Cronbach’s alpha = .85). Higher scores indicated a more positive overall evaluation.
Procedure. When participants arrived for the first session, they were told that the project concerned college experiences and adjustment to college life. The true nature of the project was not revealed to prevent alterations in participants’ self-reports and behavior. Participants were then informed of their participation being completely voluntary and that their data from the experiment would be confidential. At that point if there were no questions, participants were asked to read and sign a consent form.

Participants were then told that they would complete a computer task intended to measure their “multi-tasking” abilities, which was actually the racial attitude measure. To enhance the cover story and integrate the priming procedure, participants were told that an important predictor of success and adjustment to college is a person’s ability to multi-task. After completing the priming measure of automatically-activated racial attitudes, participants were provided with questionnaire packets, which contained the roommate relationship, motivation, and attitude questions along with a variety of filler items concerning college life. After completing the questionnaires, participants were paid $10 or given one hour of research experience credit for their time.

During the last two weeks of the Autumn quarter, participants were asked to return to the lab for the second session. The procedure for the last session was identical to the first session. Participants were reminded of confidentiality and their voluntary participation. They completed the priming measure of automatically-activated racial attitudes and the questionnaire packet with the additional questions about their roommate. Then, they were debriefed and informed of the true nature of the project. Any questions or concerns that they had were addressed. Finally, they were paid $15.00 or given one and one half hours of research credit for completing the second session.
Results

Experimental Effects: Comparing the Roommate Conditions

The data were first analyzed with respect to differences between the two conditions at Session One, Session Two, and changes across sessions. Changes across sessions were also tested within each condition.

Session One. Differences between the two conditions were evident across a variety of measures, generally indicating that the interracial roommate relationships were more problematic than the White-White relationships (see Table 2.1 for means and t-values). Participants randomly assigned to an African-American roommate were less satisfied with their roommates than participants randomly assigned to a White roommate. Interracial participants also did fewer activities with their roommates, spent less time with their roommates, were less involved in each other’s social networks, and reported less comfort for both themselves and their roommates. In addition, they evaluated their roommates’ identity and typicality differently (see Table 2.2 for means and t-values). African-American roommates were believed to identify less with OSU and their dorm, but identify more with their ethnic group. They were also rated as less typical OSU and dorm students. There were no significant differences in students’ racial attitudes based on either the self-report measure or the priming procedure. Freshmen in interracial rooms also did not differ in levels of intergroup anxiety, concern, or restraint from the freshmen in same-race rooms. Overall, participants in interracial rooms were less satisfied, less involved, and less comfortable with their roommates than participants in same race rooms.
Session Two. At the end of the Autumn quarter, interracial roommate relationships were still reported to be more problematic than same-race roommate relationships, but there was some evidence of benefits from the interracial living situation (see Tables 2.3 and 2.4 for means and t-values). Participants in interracial rooms were still less satisfied with their roommates than the same-race participants. They continued to do fewer activities with their roommates, spend less time with their roommates, were less involved in each other’s social networks, and report less comfort for both themselves and their roommates. African-American roommates were still reported to identify less with OSU and their dorm, and to be less typical of OSU and dorm students. Freshmen in interracial rooms also reported experiencing less social support and having fewer friends in common with their roommates. Although freshmen in interracial rooms did not evaluate their roommates more negatively on the composite trait rating scale than the freshmen in same-race rooms, they did rate their African-American roommates differentially on one of the specific trait dimensions. Notably, they rated their roommates as significantly less intelligent. There was no difference in racial attitudes between the two conditions on the feeling thermometer.

However, as predicted by the contact hypothesis, White freshmen randomly assigned to an African-American roommate exhibited more positive automatically-activated racial attitudes than White freshmen in same-race rooms. Despite the reports that the experiences in the interracial rooms were more negative than the same-race White rooms, the White freshmen with African-American roommates had more positive automatically-activated racial attitudes. Thus, there was the expected benefit from the
interracial setting. The effect of intergroup contact will receive more attention shortly when considering change over time.  

*Change from Session One to Session Two.* Across time, there were several changes in the roommate relationship variables and the attitude measures within the two room types and differences in the extent of the change between the two conditions (see Table 2.5 for means and t-values). Participants in same-race rooms became less satisfied with their roommates, did fewer activities with their roommates, spent less time with their roommates, and decreased social network involvement. Interestingly, same-race participants reported slightly more negative racial attitudes at the second session on the feeling thermometer. On a positive side, they reported that their roommates were more comfortable with the participants’ friends at the end of the quarter.  

Participants in interracial rooms also reported doing fewer activities with their roommates and decreasing social network involvement at the end of the quarter. However, the reduction in joint activities was not as great as the reduction reported by freshmen in same-race rooms. Freshmen with African-American roommates reported spending more time with their roommates in their dormitory rooms and that their roommates seemed more comfortable with their friends. There was not a significant difference between interracial and same-race rooms in the amount of increased roommate comfort. However, there was a significant difference between the two room types and the change in time spent with their roommates, particularly with time spent outside of the room with their roommate. Same-race roommates reduced the amount of time they spent together to a greater extent than interracial roommates. There was no change in roommate satisfaction or self-reported racial attitudes within the interracial rooms.
There were also changes in group identification and typicality ratings over time (see Table 2.6 for means and t-values). With regard to group identity and typicality ratings, African-American roommates were reported to identify less with OSU and their dorm at the second session. The same-race roommates’ identification and typicality ratings did not significantly change over time. The changes in African-American roommate identification ratings were also significantly different from the changes within the same-race rooms.

Of primary interest for this experiment was how racial attitudes changed over time as a function of roommate relationship? Supporting the contact hypothesis, freshmen in interracial rooms exhibited a significant increase in their automatically-activated racial attitudes, whereas the automatically-activated racial attitudes of freshmen in same-race rooms did not change. Also, the difference in attitude change between the two room types was significant.

Participants in interracial rooms also exhibited a reduction in intergroup anxiety, whereas there was no change for participants in same-race rooms. That is, freshmen with African-American roommates reported more comfort with regard to interacting with African-Americans over the course of the quarter. In sum, participants in the same-race rooms exhibited more negative racial attitudes on the self-report measure, as compared to the interracial participants who exhibited more positive automatically-activated racial attitudes and less intergroup anxiety (see Table 2.5 for means and t-values).
Correlations within the Interracial Roommate Sample

After comparing the differences between the two room types, further analyses were conducted with the data just from the interracial rooms. The purpose of this set of analyses was to better understand the relationship between the attitude and the roommate relationship measures, which would ideally elucidate the mechanisms underlying the benefits of intergroup contact. First, simple linear correlations between the roommate relationship and attitudes variables during each experimental session were calculated to determine whether any of the variables were associated with one another. The differences scores of each of the variables were also correlated to determine whether any of the relationship and attitudes measures cohered in their evolution across time. Then, Session One measures were correlated with Session Two measures to determine whether the initial measures predicted the measures at the end of the quarter. Finally, prospective regression analyses were conducted to determine (a) whether the Session Two relationship measures were predicted by the Session One attitude measures and (b) whether the attitude measures at Session Two were predicted by the Session One relationship variables.

Session One Correlations. At the beginning of the quarter, there were several significant correlations between the relationship variables and the attitude measures in the interracial rooms (see Table 2.7 for correlation coefficients). Participants who rated African-Americans more positively on the feeling thermometer also reported greater satisfaction with their roommates, did more activities with their roommates, spent more time with their roommates, and experienced more social network involvement. They also rated their roommates as identifying more with their dorm. Participants with less
intergroup anxiety toward African-Americans reported more satisfaction with their roommates, did more activities with their roommates, spent more time with their roommates, and reported more comfort for both themselves and their roommates. Lower intergroup anxiety participants also reported that their roommates identified more with OSU and their dorm. They also viewed their roommates as tending to be more typical of an OSU student.

The measure of automatically-activated racial attitudes and the restraint factor from the MCPR scale did not correlate with any of the roommate relationship variables. However, the concern factor from the MCPR scale did correlate with roommate’s comfort with participant’s friends and roommate’s ethnic typicality. That is, participants who were more concerned about appearing prejudiced rated their roommates as being more comfortable and more typical of their ethnic group. Overall, participants who reported more positivity and less intergroup anxiety toward African-Americans were more positive in their evaluation of their roommate relationships and rated their roommates as belonging more to academic groups to which they also belonged.

Session Two Correlations. At the end of the quarter, there were again several significant correlations between the relationship and attitude measures (see Table 2.8 for correlation coefficients). Participants who were more positive toward African-Americans on the feeling thermometer reported more satisfaction, more joint activity interaction, more time spent together, marginally more social network involvement, and more comfort with their roommates’ friends. They also rated their roommates as being more identified with their dorm, more typical of an OSU student, and more typical of a student in their dorm. With regard to the new variables included only in the second session,
students who were more positive toward African-Americans also reported receiving more social support from their roommates and rated their roommates more positively overall on the trait rating sale. In particular, they rated their roommates as more intelligent. Intergroup anxiety correlated similarly with the roommate relationship variables. That is, students who reported less intergroup anxiety toward African-Americans were more positive in evaluating their roommates and their relationships.

The measure of automatically-activated racial attitudes correlated with roommate ethnic identification and typicality. Participants who exhibited more positivity toward African-Americans on the priming measure reported that their roommates identified more with their ethnic group, but were less typical of their ethnic group. With regard to the MCPR scale, the concern factor correlated with ratings of their roommates’ typicality as an OSU freshman and a resident of their dorm. It also correlated with evaluations of their roommates’ intelligence. That is, participants who were more concerned about appearing prejudiced rated their roommates as being more typical of an OSU freshman, more typical of a resident in their dorm, and more intelligent.

Much like Session One, those participants who reported more positivity and less intergroup anxiety toward African-Americans were generally more positive in their evaluation of their roommates and their relationships. Unlike Session One, automatically-activated racial attitudes were associated with evaluations of the African-American roommates’ ethnic identification and typicality. Also, concern was associated with ratings of roommate’s OSU and dorm typicality as well as roommate intelligence.

*Correlations of Change from Session One to Session Two.* First, changes in the attitude measures were correlated with the changes in the roommate relationships
variables (see Table 2.9 for correlation coefficients). Those participants who reported increasing social network involvement with their roommate over time also exhibited an increase in positivity toward African-Americans on the priming measure for automatically-activated attitudes. In addition, participants who reported reductions in intergroup anxiety experienced an increase in roommate satisfaction. They also reported an increase in comfort with their roommates’ friends. In sum, as automatically-activated racial attitudes improved and intergroup anxiety decreased, several roommate relationship variables improved over time.

Next, changes in attitude measures were correlated with changes in roommate identification and typicality ratings (see Table 2.10 for correlation coefficients). Participants who rated their roommates as identifying less with their ethnic group at the end of the quarter exhibited an increase in their automatically-activated racial attitudes and a marginally significant reduction in restraint. For students who rated their African-American roommates as being more typical of their ethnic group at the end of the quarter than at the beginning of the quarter, they experienced an increase in concern with appearing prejudiced over time. In sum, as the association between the African-American roommates and their ethnic group decreased, there was both a decrease in motivation to control prejudiced reactions and an increase in positivity of automatically-activated racial attitudes.

Finally, changes in roommate relationship variables were correlated with changes in roommate identification and typicality ratings (see Table 2.11 for correlation coefficients). Those who increased the strength with which they perceived their roommates to identify with OSU and their dorm also demonstrated an increase in
roommate satisfaction, social network involvement, comfort with their roommate’s friends, and roommate’s comfort with their friends. Their roommates’ increased comfort was also associated with increased typicality ratings with regard to OSU and their dorm. Finally, an increase in the amount of time spent with their roommates was correlated with a reduction in roommates’ ethnic typicality. Thus, as several roommate relationship variables improved, African-American roommates were perceived to identify more with OSU and/or their dorm. Relationship improvement was also related to OSU and dorm typicality increasing and ethnic typicality decreasing.

Prospective Relations: Attitudes as Predictors of Roommate Relationship.

Correlations between the Session One attitude measures and the Session Two roommate relationship variables were calculated (see Table 2.12 for correlation coefficients). Based on the simple correlations, the feeling thermometer and intergroup anxiety scale predicted several of the roommate relationship variables. That is, more positivity and less anxiety toward African-Americans at the beginning of the quarter was associated with more positive evaluations of the roommate relationship at the end of the quarter. However, when partial correlations were calculated controlling for the appropriate Session One roommate relationship variable, the correlations were markedly reduced in magnitude. The implication is that the simple correlations of the Session One feeling thermometer and intergroup anxiety variables with the roommate relationship variables at Session Two stemmed from their common dependence on the status of the roommate relationship at Time One.

Thus, initial attitudes alone do not seem sufficient to predict roommate satisfaction, involvement, and/or interaction at the end of the quarter. The absence of
substantial prospective relations between initial attitudes and relationship variables measured subsequently in time was not necessarily surprising. With the wealth of research exploring the attitude-behavior link and demonstrating that other factors in addition to attitudes need to be considered when predicting behavior (Azjen, 1991; Eagly & Chaiken, 1993; Fazio, 1990), it should be expected that a more complex interaction of variables would determine roommate relationship evaluations. Besides the White freshmen’s racial attitudes, their initial motivations and experiences with their roommates would most likely affect their later reports about the relationship. Thus, to more completely understand roommate relationships at the end of the quarter, I turned to a consideration of the joint and potentially interactive influence of initial attitudes, motivation, and roommate relationship reports.

Given the multitude of roommate relationship variables, principal components analyses were conducted with the roommate relationship variables to determine whether a single factor would emerge to represent an overall assessment of the roommate relationship. When roommate satisfaction, time spent together, joint activities interaction, and social network involvement were included in the analysis, a single factor with an eigen value greater than one did emerge and accounted for 75.31% of the variance at Session One and 71.75% at Session Two. To simplify the analyses and reporting, the single factor was used to represent the overall evaluation of the roommate relationship. From here on, the factor score will be referred to as the relationship assessment variable.

To determine whether the relationship assessment factor at Session Two might be predicted from any of the Session One attitude, motivation, and/or relationship measures,
hierarchical regression analyses were conducted incorporating all combinations of the relationship assessment factor at Session One, automatically-activated racial attitude at Session One, intergroup anxiety at Session One, and the MCPR factors at Session One. The most fruitful regression analysis predicted Session Two relationship assessment factor from Session One relationship assessment factor, Session One automatically-activated racial attitude, Session One intergroup anxiety, and their interaction terms. The analysis revealed a main effect of Session One relationship assessment factor, $b = .88, t(109) = 15.33, p < .001$. Students who were more positive in their reports about the relationship at the beginning of the quarter were more positive at the end of the quarter.

There was also an interaction between Session One automatically-activated racial attitude and Session One intergroup anxiety, $b = -.67, t(106) = 2.28, p < .03$. The relation between racial attitude and later relationship assessment was as one would expect among those who were low in intergroup anxiety toward African-Americans. More positive automatically-activated racial attitudes were associated with more positive assessments of the roommate relationship at the second session. However, as intergroup anxiety increased, this relationship was attenuated and eventually reversed. Thus, among those high in intergroup anxiety, individuals with negative attitudes reported viewing the relationship as all the more positive (see Figure 2.1). As will be elaborated in the discussion section, high intergroup anxiety may have prompted those with negative attitudes to monitor their interactions more carefully and eventually yielded a sense that the interactions were proceeding more smoothly than expected. Thus, the roommate relationships were assessed more positively.
Prospective Relations: Roommate Relationship as a Predictor of Attitudes.

Correlations between the Session One relationship variables and the Session Two attitude measures were calculated (see Table 2.13 for correlation coefficients). Based on the simple correlations, more positive relationship reports predicted more positivity on the feeling thermometer and less intergroup anxiety toward African-Americans. That is, the more positively the roommate relationship was evaluated at the beginning of the quarter, the more positively the participants rated African-Americans on the feeling thermometer and the less intergroup anxiety toward African-Americans at the end of the quarter.

When Session One attitudes measures were controlled, the strength of the correlations diminished and most became insignificant. Only one association remained significant. More joint activity interaction at the beginning of the quarter predicted less intergroup anxiety at the end of the quarter.

Again, the largely insignificant partial correlations were not surprising. A more complex relationship between initial attitude, relationship assessment, and motivation was expected to predict end of quarter attitudes. To determine what factors proved prospectively predictive of the attitude measures at Session Two, hierarchical regression analyses were conducted incorporating as predictors all combinations of the relationship assessment factor at Session One, automatically-activated racial attitude at Session One, intergroup anxiety at Session One, and the MCPR factors at Session One. Regression analyses predicting each of the five Session Two attitude and motivation variables from the aforementioned Session One variables were conducted.

What emerged as noteworthy from this approach was the regression analysis predicting Session Two intergroup anxiety from Session One intergroup anxiety, Session
One automatically-activated racial attitude, Session One relationship assessment factor, and their interaction terms. Naturally, there was a main effect of Session One intergroup anxiety such that students who reported less Session One intergroup anxiety also reported less Session Two intergroup anxiety, $b = .82$, $t(110) = 14.65$, $p < .001$. Interestingly, there also was a main effect of Session One automatically-activated attitude, $b = -.43$, $t(110) = 2.47$, $p < .02$. Those participants who demonstrated more positive racial attitudes at the beginning of the quarter reported less intergroup anxiety at the end of the quarter. Even more interestingly, there was an interaction between Session One automatically-activated racial attitudes and the Session One relationship assessment factor, $b = .40$, $t(107) = 1.97$, $p = .05$. Among those who had developed relatively positive relationships at Session One, intergroup anxiety at Session Two was relatively low. Moreover, this was true irrespective of initial racial attitudes; both those with relatively positive and those with relatively negative attitudes displayed less anxiety if they viewed the relationship favorably. However, among those who were experiencing a more negative relationship with their roommates, initial attitudes were strongly predictive of subsequent intergroup anxiety. Those with negative attitudes and negative relationships reported much more intergroup anxiety at the end of the quarter (see Figure 2.2).
Discussion

The results of this research are consistent with previous research findings (Phelps, et al., 1998; Towles-Schwen & Fazio, 2006) indicating that interracial roommate relationships tend to be less satisfactory and more problematic than same-race White roommate relationships. White freshmen randomly assigned to an African-American roommate were generally less satisfied, less socially involved, less interactive, and less comfortable than White freshmen randomly assigned to a White roommate. These more negative relationship evaluations were reported at both the beginning and the end of the fall quarter. Also, at the end of the quarter, African-American roommates were reported to be less supportive and to share fewer friends with their White roommates. Thus, overall, interracial relationships were evaluated more negatively than same-race relationships.

However, despite the deficits reported in the interracial rooms, there were benefits to the intergroup living situation. The automatically-activated racial attitudes of students in the interracial rooms became more positive toward African-Americans, whereas the attitudes of students in the same-race rooms did not change. Participants in interracial rooms also reported less intergroup anxiety toward African-Americans, while participants in same-race rooms did not exhibit any change. Thus, it appears that the opportunity for intergroup contact experienced by students in the interracial rooms did have positive consequences.

The interracial rooms allowed for several different experiences and changes that the same-race rooms did not. The exposure to African-Americans due to the living situation most likely allowed the White roommates to gain more knowledge and
experience and form new associations which led to more positive racial attitudes and a reduction in intergroup anxiety. Indeed, as students in interracial rooms became more socially involved with their roommates their racial attitudes became more positive. And, as they became more satisfied with their roommates and comfortable with their roommate’s friends, they became less anxious about interacting with African-Americans. Freshmen in same-race rooms, on the other hand, had less opportunity to interact with African-Americans. As OSU is a predominantly White university, opportunities for interracial interactions may have been limited and/or students may have easily avoided such interactions. The interracial living situations provided experience and the opportunity for information gain that same-race rooms simply did not supply.

Presumably then, the individuals who should have benefited the most from an interracial living situation should have been students who entered the relationship with negative racial attitudes, but took advantage of the opportunity for intergroup contact. Such individuals should have gained the most from the information and/or experience of living with an African-American. In fact, the prospective regression analyses revealed support for this notion. Freshmen in interracial rooms who initially had negative racial attitudes and evaluated their roommate relationships relatively negatively at the beginning of the quarter reported the highest levels of intergroup anxiety at the end of the quarter. These participants started the relationship spending less time, interacting less, being less socially involved, and being less satisfied with their roommates. By choosing to limit their interaction and exposure to their roommates, these students never would have experienced the level of contact necessary to help them overcome their anxiety about interacting with African-Americans. On the other hand, participants who had
negative racial attitudes but were more involved and interacted more with their African-American roommate reported intergroup anxiety levels equivalent to participants with positive racial attitudes. Presumably, they were able to gain information about the group, disconfirm misconceptions, and simply grow more comfortable with such interracial interactions. Thus, these students reported less intergroup anxiety at the end of the quarter.

Although the prospective regression analyses proved informative with respect to intergroup anxiety, they were less successful when it came to identifying specific variables that were predictive of the change in automatically-activated racial attitudes. However, the lack of a single underlying mechanism may not necessarily be unexpected. Over the years, several mechanisms have been proposed as the means by which intergroup contact reduces prejudice (Dovidio et al., 2003; Pettigrew, 1998). Thus, the lack of findings may be due to the fact that prejudice reduction occurred through several different routes. (More attention will be given to this possibility in the General Discussion.)

To this point, I have focused on the positive outcomes of the interracial roommate situation for reports of intergroup anxiety and for automatically-activated racial attitudes. However, there were some signs of improvement in the assessments of the interracial roommate relationships themselves. Freshmen with African-American roommates increased the amount of time they spent in their room with their roommate and reported more perceived comfort from their roommate. They also did not report a significant decrease in roommate satisfaction as was found for the same-race participants. More importantly, interracial participants did not exhibit an increase in negativity toward
African-Americans on the self-report scale, as the same race participants did. Thus, there was some evidence of advance in the interracial living situations within the first quarter.

Of note, the prospective regression analysis revealed that evaluations of the interracial roommate relationships were affected by the White participants’ racial attitudes and intergroup anxiety. Particularly, relationship assessments for students with more negative racial attitudes were influenced by their level of intergroup anxiety. For those with negative automatically-activated racial attitudes and no anxiety about interacting with African-Americans, roommate relationship assessments were more negative. Less inhibition, due to the lessened interaction anxiety, may have led them to express more negative verbal and nonverbal behaviors, which may have produced more friction and negative interactions with their roommates. The negative interactions may then have resulted in more negative roommate assessments. On the other hand, participants were much more positive in their final evaluation of the roommate relationship if they reported higher initial levels of intergroup anxiety. The higher anxiety associated with interacting with an African-American may have increased awareness of acting appropriately with their roommate and inhibited any offensive behavior. As negativity was initially activated for these students, the higher anxiety and attention to the interaction may have led to a more positive and smoother than expected interaction. Such contrast in a favorable direction may have promoted the development of a more positive relationship. Thus, initial attitudes and anxiety appear to have jointly affected the development of the roommate relationship.

The differences between the interracial and same-race living situations also extended to personal evaluations of the roommates. Although African-American
roommates were not evaluated more negatively on the trait rating scale than the White roommates, they were generally perceived to identify less with OSU and their dorm and to be less typical of either group. These differences in identification and typicality may stem from the fact that OSU is a predominantly White university and thus African-American roommates are ethnically less representative of the campus and dorm populations. Participants may simply have been using base rates to make the judgments about their roommates. As African-American are an ethnic minority, the White participants may have viewed them as less identified and typical of OSU and their dorm.

Another possibility is that students noticed that their African-American roommates were less integrated and less adjusted to college life (Allen, 1985; D’Augelli & Hershberger, 1993; Davis, 1995). The differences in identification and typicality ratings may have been due to the African-American roommates actually having a harder time fitting in and adjusting to college life, and the Whites students accurately observing these difficulties.

A third possibility is that the students in the interracial rooms perceived and evaluated their roommates in a manner that was biased by their roommates’ race. That is, due to stereotypes and misconceptions, African-American roommates may have been viewed as less similar to the participants than White roommates.

Within the interracial rooms, roommate identification and typicality ratings with regard to the academic groups tended to increase as roommate relationship variables improved. These findings are more suggestive of the last two possibilities than of a simple inference from base rates. That is, increased involvement, comfort, and satisfaction may have helped the African-American roommates to adjust to a predominantly White university. The improved relationship with their White roommate
may have encouraged a sense of belonging, which is particularly important for African-
American students (Walton & Cohen, 2007), and led to them actually identifying more
with OSU and their dorm. The increased involvement and satisfaction may have also
affected how similar the participants viewed their roommates to themselves. As
participants gained more information about their roommates and positivity increased
toward their roommates, they may have altered how they perceived their roommates and
incorporated them into their own academic groups.

To further test the idea that roommate involvement and satisfaction influenced
roommate evaluation, prospective regression analyses were conducted. Session Two
OSU and dorm identity and typicality ratings were predicted from the relevant Session
One identity or typicality rating, Session One roommate assessment factor, and the
interaction term. Roommate assessment at the beginning of the quarter significantly
predicted OSU and dorm identity and typicality ratings ($b$s = .33, .64, .59, and .43
respectively, all $p$s < .05). The more positively participants evaluated the roommate
relationship at the beginning of the quarter, the more they rated their African-American
roommates as identified and typical of OSU and their dorm. Thus, the roommate
relationship did affect how the participants perceived their roommates and subsequently
evaluated them. Unfortunately, the data cannot distinguish whether the altered
evaluations are due to actual change in the roommate or simply change in how the
participants viewed their roommates.

Above all, the present study provides support for the contact hypothesis.
Importantly, it does so in terms of real-life rooming situations but, because the
experiment focused on students who had been randomly paired to either an African-

American or a White roommate, the research is characterized by all of the advantages of random assignment to condition. Despite the fact that interracial relationships were not as close as same-race relationships, there were positive results. The research also demonstrates the complexity of intergroup contact. It is not just the opportunity for intergroup contact that matters. Whether a person chooses to engage in the experience and what attitudes and expectations they bring to the situation play a critical role. The findings also suggest that development of an interracial friendship has implications for perceptions of group identification. Overall, the field experiment highlights the benefits of interracial relationships and intergroup contact and suggests factors that may facilitate the goals of intergroup contact.
<table>
<thead>
<tr>
<th>Variable</th>
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<th>t(261)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate Satisfaction</td>
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<td>5.58**</td>
</tr>
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<td>Time Spent in Room</td>
<td>3.24</td>
<td>2.10</td>
<td>5.55***</td>
</tr>
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<td>Time Spent Out of Room</td>
<td>2.14</td>
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<td>4.29***</td>
</tr>
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<td>Social Network Involvement</td>
<td>2.96</td>
<td>2.61</td>
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<td>Participant Comfort</td>
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<td>Roommate Comfort</td>
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</table>

** p < .01, *** p < .001

Table 2.1: Session 1 means for relationship and attitude measures as a function of roommate race
<table>
<thead>
<tr>
<th>Variable</th>
<th>White</th>
<th>Black</th>
<th>t(261)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate OSU Identification</td>
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<td>6.37</td>
<td>2.76**</td>
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<td>Roommate Dorm Identification</td>
<td>6.43</td>
<td>5.91</td>
<td>2.10*</td>
</tr>
<tr>
<td>Roommate Ethnic Identification</td>
<td>6.92</td>
<td>7.46</td>
<td>2.34*</td>
</tr>
<tr>
<td>Roommate OSU Typicality</td>
<td>7.05</td>
<td>5.97</td>
<td>4.65***</td>
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<tr>
<td>Roommate Dorm Typicality</td>
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<td>3.86***</td>
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<tr>
<td>Roommate Ethnic Typicality</td>
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<td>6.96</td>
<td>1.44</td>
</tr>
</tbody>
</table>

* p < .05, ** p < .01, *** p < .001

*Table 2.2: Session 1 means for group identity and typicality measures as a function of roommate race*
<table>
<thead>
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<th>Variable</th>
<th>White</th>
<th>Black</th>
<th>t(255)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate Satisfaction</td>
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<td>4.65</td>
<td>3.56***</td>
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<td>Joint Activity Interaction</td>
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<td>3.79***</td>
</tr>
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<td>Time Spent with Roommate</td>
<td>2.38</td>
<td>1.64</td>
<td>3.51**</td>
</tr>
<tr>
<td>Time Spent in Room</td>
<td>3.22</td>
<td>2.36</td>
<td>3.74***</td>
</tr>
<tr>
<td>Time Spent Out of Room</td>
<td>1.54</td>
<td>0.92</td>
<td>2.44**</td>
</tr>
<tr>
<td>Social Network Involvement</td>
<td>2.81</td>
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<td>3.43***</td>
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<tr>
<td>Participant Comfort</td>
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<td>5.90</td>
<td>3.87***</td>
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<tr>
<td>Roommate Comfort</td>
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<tr>
<td>Automatically-Activated Attitude</td>
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<td>0.03</td>
<td>1.98*</td>
</tr>
<tr>
<td>Feeling Thermometer</td>
<td>0.27</td>
<td>0.25</td>
<td>0.28</td>
</tr>
<tr>
<td>Intergroup Anxiety</td>
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<td>1.42</td>
<td>0.44</td>
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<tr>
<td>Concern</td>
<td>0.07</td>
<td>-0.10</td>
<td>1.38</td>
</tr>
<tr>
<td>Restraint</td>
<td>0.03</td>
<td>-0.02</td>
<td>0.42</td>
</tr>
<tr>
<td>Social Support</td>
<td>4.90</td>
<td>4.32</td>
<td>3.15**</td>
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<tr>
<td>Number of Common Friends</td>
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<td>2.50</td>
<td>2.29*</td>
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<tr>
<td>Roommate Evaluation</td>
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<td>5.43</td>
<td>0.47</td>
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<tr>
<td>Intelligent</td>
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<td>5.49</td>
<td>3.33***</td>
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* p < .05, ** p < .01, *** p < .001

Table 2.3: Session 2 means for relationship and attitudes measures as a function of roommate race
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<th>Variable</th>
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<td>4.18***</td>
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<td>Roommate Dorm Identification</td>
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<tr>
<td>Roommate Ethnic Identification</td>
<td>7.19</td>
<td>7.57</td>
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<tr>
<td>Roommate OSU Typicality</td>
<td>7.03</td>
<td>5.74</td>
<td>5.04***</td>
</tr>
<tr>
<td>Roommate Dorm Typicality</td>
<td>6.46</td>
<td>5.52</td>
<td>3.42***</td>
</tr>
<tr>
<td>Roommate Ethnic Typicality</td>
<td>7.37</td>
<td>6.99</td>
<td>1.67</td>
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+ p < .08, *** p < .001

*Table 2.4: Session 2 means for group identity and typicality measures as a function of roommate race*
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<td>Joint Activity Interaction</td>
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<td>-.18^</td>
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<td>Time Spent with Roommate</td>
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<td>.09</td>
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<td>Time Spent Out of Room</td>
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<td>-.06</td>
<td>2.53**</td>
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<tr>
<td>Social Network Involvement</td>
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<td>-.13^</td>
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<td>Participant Comfort</td>
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<td>Roommate Comfort</td>
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<td>.39^</td>
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<td>Automatically-Activated Attitude</td>
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<tr>
<td>Feeling Thermometer</td>
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<td>.00</td>
<td>1.29</td>
</tr>
<tr>
<td>Intergroup Anxiety</td>
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<td>-.08^</td>
<td>1.87+</td>
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<tr>
<td>Concern</td>
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<td>-.01</td>
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<tr>
<td>Restraint</td>
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<td>.04</td>
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</table>

+p < .08, * p < .05, ** p < .01; ^ change score differs significantly from zero

*Table 2.5: Mean difference scores for relationship and attitude measures as a function of roommate race*
<table>
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<th>Variable</th>
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<td>.06</td>
<td>0.26</td>
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</table>

* p < .05; ^ change score differs significantly from zero

Table 2.6: Mean difference scores for group identity and typicality measures as a function of roommate race
### Session 1 Attitude and Motivation Measures

<table>
<thead>
<tr>
<th>Session 1 Roommate Relationship Variables</th>
<th>Automatically-Activated Attitude</th>
<th>Feeling Thermometer</th>
<th>Intergroup Anxiety</th>
<th>Concern</th>
<th>Restraint</th>
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<td>.00</td>
<td>.26**</td>
<td>-.31***</td>
<td>.12</td>
<td>.06</td>
</tr>
<tr>
<td>Joint Activity Interaction</td>
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<td>.36***</td>
<td>-.33***</td>
<td>.06</td>
<td>.02</td>
</tr>
<tr>
<td>Time Spent with Roommate</td>
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<td>.32***</td>
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<td>-.23**</td>
<td>.06</td>
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</tr>
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<td>.01</td>
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<td>Participant Comfort</td>
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<td>Roommate Dorm Typicality</td>
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<tr>
<td>Roommate Ethnic Typicality</td>
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<td>.12</td>
<td>.20*</td>
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</tbody>
</table>

+ p < .08, * p < .05, ** p < .01, *** p < .001

**Table 2.7:** Session 1 correlations between relationship and attitude measures within interracial rooms
### Session 2 Attitude and Motivation Measures

<table>
<thead>
<tr>
<th>Session 2 Roommate Relationship Variables</th>
<th>Automatically Activated Attitude</th>
<th>Feeling Thermom.</th>
<th>Intergroup Anxiety</th>
<th>Concern</th>
<th>Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate Satisfaction</td>
<td>.06</td>
<td>.26**</td>
<td>-.32***</td>
<td>.04</td>
<td>.01</td>
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<tr>
<td>Joint Activity Interaction</td>
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<td>.23*</td>
<td>-.35***</td>
<td>.05</td>
<td>.00</td>
</tr>
<tr>
<td>Time Spent with Roommate</td>
<td>.11</td>
<td>.22*</td>
<td>-.21*</td>
<td>.04</td>
<td>.11</td>
</tr>
<tr>
<td>Time Spent in Rm</td>
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<td>.20*</td>
<td>-.16+</td>
<td>.07</td>
<td>.05</td>
</tr>
<tr>
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<td>.20*</td>
<td>-.22*</td>
<td>.00</td>
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<tr>
<td>Social Network</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>.09</td>
<td>.17+</td>
<td>-.26**</td>
<td>-.03</td>
<td>-.04</td>
</tr>
<tr>
<td>Participant Comfort</td>
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<td>-.25**</td>
<td>.09</td>
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<td>Roommate Dorm Ident.</td>
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<td>.13</td>
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<td>Roommate Ethnic Ident.</td>
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<td>.08</td>
<td>-.14</td>
<td>.06</td>
<td>-.01</td>
</tr>
<tr>
<td>Roommate OSU Typ.</td>
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<td>.21*</td>
<td>-.02</td>
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<td>Roommate Dorm Typ.</td>
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<td>-.33***</td>
<td>.21*</td>
<td>-.06</td>
</tr>
<tr>
<td>Roommate Ethnic Typ.</td>
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<td>-.11</td>
<td>.15</td>
<td>.01</td>
</tr>
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<td>Social Support</td>
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<td>.18*</td>
<td>-.26**</td>
<td>.05</td>
<td>.03</td>
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<td>No. of Common Friends</td>
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<td>-.17+</td>
<td>-.02</td>
<td>.17</td>
</tr>
<tr>
<td>Roommate Evaluation</td>
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<td>-.33***</td>
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<td>.09</td>
</tr>
<tr>
<td>Intelligent</td>
<td>.04</td>
<td>.21*</td>
<td>-.28**</td>
<td>.27**</td>
<td>.11</td>
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</tbody>
</table>

+ p < .08, * p < .05, ** p < .01, *** p < .001

*Table 2.8:* Session 2 correlations between relationship and attitude measures within interracial rooms
### Table 2.9: Correlations between change in attitude and roommate relationship variables

<table>
<thead>
<tr>
<th>Roommate Relationship Change Scores</th>
<th>Automatically-Activated Attitude</th>
<th>Feeling Thermom</th>
<th>Intergroup Anxiety</th>
<th>Concern</th>
<th>Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate Satisfaction</td>
<td>-.01</td>
<td>.12</td>
<td>-.24**</td>
<td>.12</td>
<td>-.02</td>
</tr>
<tr>
<td>Joint Activity Interaction</td>
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<td>.08</td>
<td>-.07</td>
<td>-.09</td>
<td>.05</td>
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<tr>
<td>Time Spent with</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roommate</td>
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<td>.12</td>
<td>.01</td>
<td>-.13</td>
<td>.06</td>
</tr>
<tr>
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<td>-.06</td>
<td>.00</td>
</tr>
<tr>
<td>Time Spent Out of Rm</td>
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<td>.06</td>
<td>.05</td>
<td>-.14</td>
<td>.09</td>
</tr>
<tr>
<td>Social Network Involvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant Comfort</td>
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<td>.08</td>
<td>-.19*</td>
<td>.01</td>
<td>-.02</td>
</tr>
<tr>
<td>Roommate Comfort</td>
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<td>-.04</td>
<td>-.03</td>
<td>-.08</td>
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+ p < .08, * p < .05, ** p < .01, *** p < .001
### Table 2.10: Correlations between change in attitude measures and roommate identification and typicality variables

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<th>Roommate Evaluation Change Scores</th>
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<th>Feeling Thermom</th>
<th>Intergroup Anxiety</th>
<th>Concern</th>
<th>Restraint</th>
</tr>
</thead>
<tbody>
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<td>-.04</td>
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<td>.03</td>
<td>.13</td>
<td>.09</td>
</tr>
<tr>
<td>Roommate Ethnic Ident.</td>
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<td>-.02</td>
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<td>.05</td>
<td>.17+</td>
</tr>
<tr>
<td>Roommate OSU Typ.</td>
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<td>-.03</td>
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<td>-.05</td>
</tr>
<tr>
<td>Roommate Dorm Typ.</td>
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<td>-.03</td>
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<td>Roommate Ethnic Typ.</td>
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<td>.03</td>
<td>.29***</td>
<td>.01</td>
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+ p < .08, * p < .05, ** p < .01, *** p < .001
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<tr>
<th>Roommate Relationship Change Scores</th>
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<th>Joint Activity Interaction</th>
<th>Time Spent with Rmmt</th>
<th>Social Network Involvement</th>
<th>Participant Comfort</th>
<th>Rmmt Comfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate OSU Ident.</td>
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<td>.09</td>
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<td>.42***</td>
</tr>
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<td>Roommate Dorm Ident.</td>
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<td>.00</td>
<td>.24**</td>
<td>.14</td>
<td>.27**</td>
</tr>
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<td>Roommate Ethnic Ident.</td>
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<td>-.11</td>
<td>-.04</td>
<td>-.02</td>
<td>.11</td>
</tr>
<tr>
<td>Roommate OSU Typ.</td>
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<td>.10</td>
<td>.12</td>
<td>.09</td>
<td>.15</td>
<td>.20*</td>
</tr>
<tr>
<td>Roommate Dorm Typ.</td>
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<td>.07</td>
<td>-.10</td>
<td>-.01</td>
<td>.11</td>
<td>.18*</td>
</tr>
<tr>
<td>Roommate Ethnic Typ.</td>
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<td>-.11</td>
<td>-.23*</td>
<td>-.05</td>
<td>-.05</td>
<td>.02</td>
</tr>
</tbody>
</table>

*p < .05, ** p < .01, *** p < .001

*Table 2.11: Correlations between change in roommate relationship measures and roommate identification and typicality variables*
### Table 2.12: Correlations between Session 1 attitude measures and Session 2 roommate relationship variables

<table>
<thead>
<tr>
<th>Session 2 Roommate Relationship Variables</th>
<th>Automatically Activated Attitude</th>
<th>Feeling Thermom</th>
<th>Intergroup Anxiety</th>
<th>Concern</th>
<th>Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate Satisfaction</td>
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<td>.20* (.05)</td>
<td>-.22* (.05)</td>
<td>.06 (.03)</td>
<td>.06 (-.04)</td>
</tr>
<tr>
<td>Joint Activity Interaction</td>
<td>.05 (-.02)</td>
<td>.24** (.07)</td>
<td>-.28** (.03)</td>
<td>.06 (.05)</td>
<td>.01 (.01)</td>
</tr>
<tr>
<td>Time Spent with Roommate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.07 (-.03)</td>
<td>.20* (-.09)</td>
<td>-.18* (.00)</td>
<td>.09 (.06)</td>
<td>.07 (.14)</td>
</tr>
<tr>
<td>Time Spent in Rm</td>
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<td>-.10 (.02)</td>
<td>.13 (.08)</td>
<td>.07 (.06)</td>
</tr>
<tr>
<td>Time Spent Out of Rm</td>
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<td>.17+ (-.01)</td>
<td>-.22* (-.09)</td>
<td>.07 (.04)</td>
<td>.07 (-.02)</td>
</tr>
<tr>
<td>Social Network</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>.04 (-.05)</td>
<td>.19* (-.03)</td>
<td>-.23** (.02)</td>
<td>.03 (-.02)</td>
<td>.01 (-.02)</td>
</tr>
<tr>
<td>Participant Comfort</td>
<td>.10 (.11)</td>
<td>.17+ (.03)</td>
<td>-.21* (.01)</td>
<td>.06 (.06)</td>
<td>.05 (-.10)</td>
</tr>
<tr>
<td>Roommate Comfort</td>
<td>.09 (.08)</td>
<td>.12 (.01)</td>
<td>-.18* (.03)</td>
<td>.03 (.02)</td>
<td>.02 (-.02)</td>
</tr>
<tr>
<td>Roommate OSU Ident.</td>
<td>.01 (.08)</td>
<td>.07 (-.06)</td>
<td>-.20* (-.03)</td>
<td>.07 (.05)</td>
<td>-.13 (-.14)</td>
</tr>
<tr>
<td>Roommate Dorm Ident.</td>
<td>.05 (.07)</td>
<td>.19* (.06)</td>
<td>-.24** (-.03)</td>
<td>.08 (.06)</td>
<td>-.09 (-.09)</td>
</tr>
<tr>
<td>Roommate Ethnic Ident.</td>
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<td>.12 (.18+)</td>
<td>-.07 (-.09)</td>
<td>.05 (.09)</td>
<td>-.04 (-.08)</td>
</tr>
<tr>
<td>Roommate OSU Typ.</td>
<td>.05 (.12)</td>
<td>.10 (-.03)</td>
<td>-.20* (-.09)</td>
<td>.15 (.14)</td>
<td>-.02 (-.01)</td>
</tr>
<tr>
<td>Roommate Dorm Typ.</td>
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<td>.14 (.07)</td>
<td>-.25** (-.16+)</td>
<td>.10 (.06)</td>
<td>-.12 (-.16)</td>
</tr>
<tr>
<td>Roommate Ethnic Typ.</td>
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<td>.07 (.15)</td>
<td>-.05 (-.13)</td>
<td>.10 (.00)</td>
<td>-.03 (-.08)</td>
</tr>
<tr>
<td>Social Support</td>
<td>.09</td>
<td>.11</td>
<td>-.15</td>
<td>.05</td>
<td>.09</td>
</tr>
<tr>
<td>No. of Common Friends</td>
<td>-.02</td>
<td>.09</td>
<td>-.15</td>
<td>-.01</td>
<td>.09</td>
</tr>
<tr>
<td>Roommate Evaluation</td>
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<td>.08</td>
<td>-.22*</td>
<td>.11</td>
<td>.11</td>
</tr>
<tr>
<td>Intelligent</td>
<td>.23**</td>
<td>.05</td>
<td>-.17*</td>
<td>.28**</td>
<td>.12</td>
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</tbody>
</table>

+ < .08, * p < .05, ** p < .01, *** p < .001

Partial correlations controlling for the relevant Session 1 relationship variables are within the parentheses. (The last 4 variables in the table were assessed only in Session 2. Hence, no partial correlations are listed for those variables.)
<table>
<thead>
<tr>
<th>Session 1 Roommate Relationship Variables</th>
<th>Automatically Activated Attitude</th>
<th>Feeling Thermom.</th>
<th>Intergroup Anxiety</th>
<th>Concern</th>
<th>Restraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roommate Satisfaction</td>
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<td>.21* (.09)</td>
<td>-.34* (.15)</td>
<td>.02 (.06)</td>
<td>.02 (.01)</td>
</tr>
<tr>
<td>Joint Activity Interaction</td>
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<td>.27** (.07)</td>
<td>-.38*** (.19*)</td>
<td>.08 (.05)</td>
<td>.01 (.01)</td>
</tr>
<tr>
<td>Time Spent with</td>
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<td>-.26** (.14)</td>
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<td>-.02 (.01)</td>
</tr>
<tr>
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<td>.18* (.01)</td>
<td>-.18* (.13)</td>
<td>.12 (.06)</td>
<td>-.01 (.02)</td>
</tr>
<tr>
<td>Time Spent in Rm</td>
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<td>.23** (.10)</td>
<td>-.26** (.12)</td>
<td>.07 (.05)</td>
<td>-.03 (.01)</td>
</tr>
<tr>
<td>Time Spent Out of Rm</td>
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<td>-.35*** (.02)</td>
<td>.01 (.05)</td>
<td>-.06 (.08)</td>
<td></td>
</tr>
<tr>
<td>Social Network Involvement</td>
<td>.08 (.11)</td>
<td>.23* (.11)</td>
<td>-.26** (.02)</td>
<td>.12 (.07)</td>
<td>-.03 (.04)</td>
</tr>
<tr>
<td>Participant Comfort</td>
<td>.03 (.11)</td>
<td>.18+ (.09)</td>
<td>-.23** (.08)</td>
<td>.13 (.03)</td>
<td>.03 (.00)</td>
</tr>
</tbody>
</table>

+ < .08, * p < .05, ** p < .01, *** p < .001

Partial correlations controlling for the relevant Session 1 attitude measures are within the parentheses

Table 2.13: Correlations between Session 1 roommate relationship variables and Session 2 attitude measures
Figure 2.1: Session Two relationship assessment factor as a function of Session One automatically-activated racial attitude and Session One intergroup anxiety at values one standard deviation above and below the means.
Figure 2.2: Session Two intergroup anxiety toward African-Americans as a function of Session One automatically-activated racial attitudes and Session One relationship assessment factor at values one standard deviation above and below the means.
CHAPTER 3
STRESS AND HEALTH STUDY

The second experiment was based on the indication that interracial roommate situations may be more stressful than same race roommate situations, for some people. As demonstrated in the previous experiment and in other research (Phelps, Altschul, Wisenbaker, Day, Cooper, & Potter, 1998; Towles-Schwen & Fazio, 2006), interracial roommate relationships are generally evaluated more negatively and tend to be more problematic. As such, the less socially supportive and less socially involved interracial living situation may be a more stressful environment. This, in turn, may have consequences for students’ general well-being and health. Thus, one goal of this experiment was to examine the potential stress and health consequences of being in an interracial roommate relationship versus a same-race roommate relationship.

The other purpose of this experiment was to explore the role of attitudes with respect to the health-related outcomes of the interracial situation. The focus here concerned the functional value of attitudes. Of particular interest were the maladaptive effects of an attitude that is contrary to the requirements of the situation. Specifically for students assigned to an interracial room, having a more negative racial attitude would seem deleterious and harmful for navigating the living situation. If negativity is
automatically activated in response to one’s roommate, this reaction could potentially hinder working with one’s roommate to achieve a satisfactory living situation. Thus, the extent to which positivity or negativity is automatically activated with regard to African-Americans may affect the stress an individual experiences in an interracial living situation and, in turn, with extended exposure to the stress, the overall well-being of students with negative racial attitudes in interracial rooms may be affected. To address these questions, random assignment to same-race versus interracial dormitory rooms was again utilized.

Method

Participants. A sample of White freshmen randomly assigned to a White (N = 74) or African-American (N = 61) freshman were recruited in the beginning of the Autumn quarter of a single academic year. Participants were contacted via e-mail or telephone and asked to participate in a two-session study concerning adjustment to college life. For their time, they received either $25 or research experience credit for an introductory psychology course. This sample comprised the second of the two recruited cohorts involved in the previous experiment.

Measures. The participants completed two one-hour experimental sessions, one within the first two weeks and the second within the last two weeks of their first quarter of college. During each session, the participants completed the questionnaire packet, containing the relationship and attitudes measures, and the priming procedure to assess automatically-activated racial attitudes, as outlined in the previous experiment. In
addition, participants completed several stress and health self-report measures at both sessions. To incorporate the new measures into the cover story, participants were told that starting college is a significant life transition and can be stressful, which can have consequences for one’s health. As such, another means of assessing adjustment to college was through the measurement of general stress and health. (see Appendix B for the stress and health questionnaires). More detailed descriptions of the various stress and health measures are provided below.

**Perceived Stress Scale (PSS).** To assess participants’ stress levels, the perceived stress scale was utilized (Cohen, Kamarck, & Mermelstein, 1983). The scale consists of 14 items that assesses the level of stress an individual is currently or has recently experienced. The scale is intended to measure an individual’s appraisal of their general stress level. That is, the scale is not specific to particular events or a particular domain of an individual’s life. Participants are asked to consider their thoughts and feelings over the past month. They are then asked to indicate on a scale from 0 (Never) to 4 (Very Often) how often they have felt or thought a certain way (e.g., “In the last month, how often have you been upset because of something that happened unexpectedly?”). Seven of the items are positive thoughts and feelings, whereas the other seven are negative. To score the scale, the seven positive items are reverse coded and responses to all 14 items are summed. Larger numbers indicate more perceived stress.

**Beck Depression Inventory-II (BDI).** To assess participants’ psychological well-being, the Beck Depression Inventory-II was utilized (Beck, Steer, & Brown, 1996). The scale consists of 21 symptoms associated with depression (e.g., loss of pleasure, guilty feelings). Participants are asked to indicate on a scale from 0 to 4 the degree to which
they have experienced each of the symptoms in the past two weeks. To score the BDI, responses to the 21 items are summed. Larger numbers indicate more severe depression.

*Hopkins Symptom Checklist (SCL-90).* To assess both psychological and physical well-being, the Hopkins Symptoms Checklist was administered (Derogatis, Lipman, & Covi, 1973). The instrument consists of 90 physical and psychological symptoms of distress (e.g., headaches, mind going blank). Participants are asked to indicate the extent to which they have experienced each symptom in the past week on a scale from 0 (Not at all) to 4 (Extremely). To score the SCL-90, responses to all 90 items are summed. Larger numbers indicate more physical and psychological distress.

*Cohen-Hoberman Inventory of Physical Symptoms (CHIPS).* To assess physical health separately, the Cohen-Hoberman Inventory of Physical Symptoms was used (Cohen & Hoberman, 1983). The scale consists of 33 common, physical ailments (e.g., back pain, constipation). Participants are asked to indicate on a scale from 0 (Not at all) to 4 (Extremely) the extent to which they have been bothered or distressed by each of the physical symptoms in the last two weeks. To score CHIPS, responses to all 33 items are summed. Larger numbers indicate more health problems.

*Loneliness.* A final measure used to assess participants’ general psychological well-being and happiness was the R-UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). The loneliness scale was intended to capture the extent to which individuals felt connected to their social environment and understood by others. The scale consists of 20 items (e.g., “I feel isolated from others.”). Participants were asked to indicate the extent to which each statement described them on a scale from 1 (Definitely does not describe me) to 7 (Definitely describes me). There were nine positive
statements and eleven negative statements. To score the loneliness scale, the positive items were reverse coded and the responses to the 20 items were averaged. Larger numbers indicate more loneliness.

Procedure. The data for this experiment were collected during the second academic year that comprised the first experiment. The procedure for this experiment was the same as the previous experiment except for the addition of the stress and health measures at both Session One and Session Two. The cover story was also slightly different to justify the stress and health measures. Thus, students were told that the main focus of the study was adjustment to college life, and that an indicator of successful transition to college life was students’ general well-being. As such, their stress and health levels would be assessed at the beginning and end of the quarter.²

Results

Experimental Effects: Comparing the Roommate Conditions

The data were first analyzed with respect to differences in stress and health between the two conditions at Session One, Session Two, and change across time. Changes across sessions were also tested within each condition.

Session One. The stress and health measures from the beginning of the quarter were compared between the two room types to determine whether roommate race affected the White freshmen’s stress levels and well-being (see Table 3.1 for means and t-values). Participants in the interracial rooms appeared to report more physical and psychological distress on the SCL-90 and CHIPS, however neither comparison reached conventional levels of statistical significance. There were no differences in perceived
stress, depression, or loneliness between the rooms. Thus, at the beginning of the quarter, there were no significant differences in stress and health between the participants in the interracial and same-race rooms.

*Session Two.* The stress and health measures from the end of the quarter were compared between the interracial and same-race rooms (see Table 3.2 for means and t-values). There were no differences in perceived stress, depression, physical health, or loneliness. As with Session One, participants in the two rooms reported similar levels of stress and well-being.

*Change from Session One to Session Two.* Across time, there were changes in stress and health within each room type (see Table 3.3 for means and t-values). Participants in same-race rooms experienced an increase in perceived stress over the quarter. Participants in interracial rooms did not experience a similar increase in stress, but the difference in the change in stress between the two room types was not significant.

Participants in interracial rooms experienced a decrease in physical and psychological distress symptoms on the Hopkins Symptoms Checklist. Freshmen in the same-race rooms also reported fewer distress symptoms at the end of the quarter, but this decline was not statistically reliable. Also, the difference in change between the two rooms was not significantly different. There were no significant changes in depression, loneliness, or reports of physical ailments in either room type or in the differences between the two rooms.

Overall, there was no indication of any difference in the stress or health of White freshmen randomly assigned to White versus African-American roommates. Thus, despite interracial rooms being less satisfying and more problematic than same-race
rooms, these differences did not result in higher stress levels or decreased psychological and/or physical well-being.

Correlations within the Interracial Roommate Sample

Despite the lack of experimental effects, some of the White freshmen in the interracial rooms may have found the situation less problematic than others. Initial racial attitudes may have made the situation more or less difficult. Hence, further analyses were conducted focusing on the data from the interracial rooms. The purpose of this set of analyses was to better understand the functional value of attitude, particularly when an individual is in a situation that affords greater value to an attitude of a particular valence. Thus, the goal of these analyses was to determine whether there were any relationships between the attitude variables and the stress/health measures. For participants in interracial rooms, having negative racial attitudes would seem maladaptive for the living situation. The potentially problematic, negative attitude may prove to be a source of stress to the individual and ultimately have consequences for the individuals’ psychological and physical health. To address this possibility, simple linear correlations between the stress/health measures and attitudes variables during each experimental session were calculated. The difference scores of each of the variables were also correlated to determine whether any of the stress/health and attitude measures cohered in their evolution across time. Then, Session One attitude measures were correlated with Session Two stress and health measures to determine whether the initial measures predicted the measures at the end of the quarter. Finally, prospective regression analyses
were conducted to determine whether the Session Two stress and health measures were predicted by more complex combinations of the Session One attitude measures.

**Session One Correlations.** At the beginning of the quarter, there were a couple of significant correlations between the stress and health variables and the attitude measures in the interracial rooms (see Table 3.4 for correlation coefficients). Participants who reported more intergroup anxiety toward African-Americans also reported more perceived stress. That is, students who felt less uncertainty and were more comfortable interacting with an African-American reported feeling less general stress. Participants who reported more restraint, or were more motivated to avoid dispute with or about African-Americans, also experienced more perceived stress at the beginning of the quarter. The psychological and physical well-being scales did not correlate with any of the attitude or motivation measures. Thus, for freshmen randomly assigned to an African-American roommate, general stress levels were accentuated for those individuals who reported more uncertainty with regard to interacting with an African-American or desired avoiding disputes with African-Americans.

**Session Two Correlations.** During the second session, most of the stress and health measures did not correlate with the attitude and motivation variables (see Table 3.5 for correlation coefficients). However, two relationships did emerge. First, there was a surprising, significant correlation between intergroup anxiety toward African-Americans and the Cohen-Hoberman Inventory of Physical Symptoms. At the end of the quarter, the greater the reported intergroup anxiety, the fewer physical ailments participants reported experiencing. Thus, this correlation was in an unexpected direction. The second correlation was between the feeling thermometer and loneliness. Participants who
evaluated African-Americans more positively on the feeling thermometer reported being less lonely.

**Correlations of Change from Session One to Session Two.** Changes in attitude measures were correlated with changes in stress and health measures to determine whether there was any association in how the different variables evolved over time (see Table 3.6 for correlation coefficients). Increases in level of concern on the motivation to control prejudiced reactions scale were associated with increased reports of physical and psychological distress on the SCL-90. As participants became more concerned with acting prejudiced, they also experienced more physical and psychological symptoms of distress. Participants who experienced a decrease in loneliness also experienced an increase in restraint. That is, as participants became more motivated to avoid dispute with or about African-Americans, they became less lonely and felt more connected and understood by their social environment. Thus, increased motivation to control prejudiced reactions was associated with more reports of health problems, but less loneliness.

**Prospective Relations: Predictors of Stress and Health.** Correlations between Session One attitude measures and Session Two stress and health measures were calculated to determine if the measures at the beginning of the quarter predicted participants’ well-being at the end of the quarter (see Table 3.7 for correlation coefficients). The simple correlations did not highlight any significant relationships between the different variables. Partial correlations were then calculated controlling for the relevant Session One stress and health measures. When this was done, several of the correlations increased in magnitude to significant levels. Self-reported racial attitudes on the feeling thermometer predicted several of the stress and health measures. Participants
who evaluated African-Americans more positively at the beginning of the quarter reported more stress, physical ailments, distress, and loneliness at the end of the quarter. Also, participants who had more intergroup anxiety toward African-Americans at Session One reported fewer psychological and physical distress symptoms at Session Two. In general, the more self-reported anxiety and negativity toward African-Americans that participants experienced at the beginning of the quarter, the less stress and better health they reported at the end of the quarter.

The significant partial correlations between the two attitude measures and the stress/health measures seemed counterintuitive. It would seem more appropriate for positivity at the beginning of the quarter to predict less stress and better health at the end of the quarter. Indeed, the relations seem inconsistent with some of the other correlations that were observed. Recall that at the beginning of the quarter, intergroup anxiety was associated with more stress, and at the end of the quarter, more positivity toward African-Americans was associated with less loneliness. However, the prospective correlations suggest the opposite relationship. A possible explanation for the mixed findings may be that the participants who initially reported more intergroup anxiety and negativity toward African-Americans simply may have avoided their roommates. These individuals would presumably have experienced the most discomfort in an interracial room as perhaps demonstrated by the correlation between intergroup anxiety and stress at the beginning of the quarter. Wanting to eliminate such discomfort, these individuals may have stayed away from their roommate situation. By doing so, these individuals may have removed themselves from situations that would evoke stress and lead to physical and psychological distress. Thus, at the end of the quarter, those who reported the most
anxiety and negativity may have experienced less stress and health concerns because they avoided their roommate and living situation.

The inconclusive associations between attitudes and well-being were not necessarily surprising when considering that Fazio and Powell (1997) also did not find a simple relationship between the variables. Instead, they found that the combination of initial stress, health, and attitude accessibility was more predictive of later health than attitude accessibility alone. That is, attitude accessibility moderated the relationship between stress and health. Accessible attitudes served as more of a buffer for individuals experiencing more stress. Thus, for the current experiment also, racial attitudes alone may not determine health. Other factors may need to be considered. Consequently, hierarchical regression analyses were conducted to explore predicting health from more complex combinations of factors. The approach taken to understand the effect of attitudes on health mirrored Fazio and Powell (1997). Thus, for the present study, the regression analyses predicted health at Session Two from Session One attitudes, Session One stress, and Session One health.

As there were several physical and psychological health variables (SCL-90, CHIPS, BDI, and loneliness), principal components analyses were conducted with the health variables to determine whether a single factor would emerge to represent an overall assessment of students’ general physical and emotional distress. The perceived stress scale was not included in the analyses as the aim was to use this measure of stress as a predictor of health-related outcomes, as has been done in past research (e.g., Cohen & Wills, 1991; Ebrecht, Hextall, Kirtley, Taylor, Dyson, & Weinman, 2004; Glaser et al., 1987). Overall, the four health variables correlated well, however loneliness
correlated the least with the other three variables with correlations ranging from .22 to .53 versus a range of .67 to .83 with the other three variables. Conceptually, the loneliness scale is also quite distinct from the other three measures. Thus, principal components analyses were conducted without the loneliness measure. When the SCL-90, CHIPS, and BDI were included in the analysis, a single factor with an eigen value greater than one did emerge and accounted for 83.50% of the variance at Session One and 79.77% at Session Two. To simplify the analyses and reporting, the single factor was used to represent participants’ overall well-being. From here on, the factor score will be referred to as the emotional distress variable. This composite variable and the loneliness scale will serve as the outcome measures of interest.

To determine whether the emotional distress factor at Session Two might be predicted from any of the Session One attitude and/or motivation measures, hierarchical regression analyses were conducted incorporating all combinations of automatically-activated racial attitude at Session One, intergroup anxiety at Session One, and the MCPR factors at Session One while controlling for perceived stress at Session One and emotional distress at Session One. The most fruitful regression analysis predicted Session Two emotional distress from Session One automatically-activated racial attitude, Session One perceived stress, Session One emotional distress, and their interaction terms. There was a main effect of Session One emotional distress, $b = .83$, $t (49) = 7.89$, $p < .001$. Students who experienced more emotional distress at the beginning of the quarter were also more emotionally distressed at the end of the quarter. There was also an interaction between Session One automatically-activated racial attitude and Session One emotional distress, $b = -1.05$, $t (46) = 2.46$, $p < .02$. Reports of emotional distress at the
end of the quarter were accentuated by initially negative racial attitudes. Particularly for those individuals who experienced higher levels of emotional distress at the beginning of the quarter, automatically-activated negativity toward African-Americans worsened their health self-reports at the end of the quarter (see Figure 3.1).³ Simple effects analysis (Aiken & West, 1991) revealed the effect of automatically-activated attitudes at Session One to be marginally significant at one standard deviation above the mean on the emotional distress measure, $t_{(45)} = 1.92, p = .06$. At one standard deviation below the mean, the effect of Session One automatically-activated attitude was not significant, $t_{(45)} = 1.08, p > .25$. Thus, health concerns at the end of the quarter were accentuated by more negative racial attitudes for those who initially reported worse health. Or, stated another way, recovery from initial emotional distress was more pronounced among those with more positive attitudes.

As the loneliness measure was not included in the emotional distress factor, similar hierarchical regression analyses were conducted with loneliness as the outcome measure. Session Two loneliness was predicted from Session One automatically-activated racial attitude, Session One perceived stress, Session One loneliness, and their interaction terms. There was a main effect of Session One loneliness, $b = .72, t_{(49)} = 6.73, p < .001$. Participants who were lonelier at the beginning of the quarter indicated more loneliness at the end of the quarter. There was a main effect of perceived stress, $b = .04, t_{(49)} = 2.58, p < .02$. The students who were more stressed at Session One reported more loneliness at the second experimental session. There were also two significant two-way interactions.
First, Session One automatically-activated attitudes interacted with Session One perceived stress, $b = -.17, t (46) = 2.98, p < .01$. Among those who had relatively positive automatically-activated racial attitudes at Session One, loneliness at Session Two was relatively low. Moreover, this was true irrespective of initial stress levels; both those with relatively high and those with relatively low perceived stress displayed less loneliness, $t (45) = .60, p > .50$. However, among those who had initially negative racial attitudes, initial stress levels were strongly predictive of subsequent loneliness, $t (45) = 4.55, p < .001$. Those with negative attitudes and higher stress levels reported much more loneliness at the end of the quarter (see Figure 3.2). Thus, stress had its usual detrimental effects among those with negative attitudes, but positive attitudes appear to have served as a buffer, attenuating the relation between initial stress and subsequent loneliness.

Next, there was an interaction between Session One automatically-activated racial attitude and Session One loneliness, $b = .78, t (46) = 2.07, p < .05$. Among those who were relatively lonelier at Session One, loneliness at Session Two was also relatively high. Moreover, this was true irrespective of initial racial attitudes; both those with relatively positive and those with relatively negative attitudes displayed more loneliness, $t (45) = 1.37, p > .17$. However, among those who were less lonely at the beginning of the quarter, initial attitudes were strongly predictive of subsequent loneliness, $t (45) = 2.21, p < .05$. Those with negative attitudes reported more loneliness at the end of the quarter than those with positive attitudes (see Figure 3.3). Thus, recovery from initial loneliness was unrelated to attitudes, but attitudes did predict the development of loneliness among those who began the quarter not feeling lonely. For such individuals, loneliness increased over time if they held negative racial attitudes. These initially less lonely
participants may have begun the quarter feeling more socially connected and more open with their roommates. However, their negative automatically-activated racial attitudes eventually may have proven harmful to the relationship, instigating the experience of loneliness.\(^4\)

**Discussion**

First, the results of this research indicate that there were no differences in the stress and health of students randomly assigned to a same-race versus an interracial dormitory room. Despite indications that White freshmen are generally less satisfied and experience less social involvement with an African-American roommate than a White roommate, these differences did not translate into reports of more stress or decreased well-being. The lack of differences between the two room types is positive for two reasons.

First, with regard to the contact hypothesis, the fact that overall students’ physical and psychological experiences were the same whether they were living with another White student or an African-American student is most likely beneficial in producing the positive effects of intergroup contact. If students in interracial rooms experienced more stress or health concerns, this could work against intergroup contact and diminish the benefits of the exposure and interaction with an out-group member. Greater stress and physical or psychological distress could have multiple negative effects for intergroup contact. First, it could interfere with how well or smoothly the interaction progressed. Also, heightened stress and health problems could simply lead people to be more avoidant and less inclined to try to initiate a relationship and to work toward making the
relationship succeed. Finally, if the stress and worsened well-being were attributed to one’s roommate, the experience could actually lead to more negative associations and racial attitudes. Thus, the fact that no differences were found between the two room types was most likely good for the relationship and for achieving any benefits of intergroup contact.

The experimental findings of this study highlight the advantages of utilizing dormitory roommate relationships as a natural setting to examine the benefits of intergroup contact. As the situation does not evoke differential stress levels due to roommate race, the situation is not prone to the previously suggested problems. The data also suggest that despite the stress of transitioning to college and the potential health consequences associated with that stress, room type and roommate race did not negatively affect the general well-being of students in interracial rooms. Therefore, besides meeting many of the conditions needed to facilitate intergroup contact, the college dormitory living situations do not add other problematic factors that could detract from the benefits of the interracial experience.

At a more focused level, the current experiment speaks to the functional value of attitudes given an attitude relevant situation. Specifically, the functionality of possessing a positive racial attitude when living in an interracial dormitory room was examined. The results of this research indicated that automatically-activated racial attitudes did have consequences for students’ health and feelings of loneliness at the end of the quarter. There was not a simple relationship between the variables though. Rather, automatically-activated attitudes were most influential for individuals who experienced more stress or well-being concerns at the beginning of the quarter.
Based on the prospective regression analysis regarding general physical and psychological health, racial attitudes were most influential for individuals who initially reported more distress. For these individuals, having a negative attitude toward African-Americans accentuated their reports of physical and psychological distress at the end of the quarter. Similar to Fazio and Powell (1997), having positivity automatically activated seemed to buffer the effect of initial health problems on later health reports. The benefit of having an attitude that matches a specific situation may stem from a freeing of cognitive and emotional resources for efforts to recover from initial distress.

When an individual possesses an attitude that is appropriate for a given situation, they do not have to be as concerned or monitor their behavior and spend time deliberating about decisions. Their attitudes are adaptive to the situation. Thus, more resources are available to cope with other concerns. For individuals with attitudes that are maladaptive for a given situation, effort may be needed to monitor one’s behavior and prevent their attitudes from becoming problematic. Thus, with resources being used to monitor the mismatch between attitudes and the situation, these individuals may have fewer resources to cope with initial health concerns. Therefore, freshmen in interracial rooms with more negative racial attitudes reported more physical and emotional distress at the end of the quarter if they had experienced more distress initially. They were less able to cope with the initial health concerns, because the mismatch between their attitudes and their living situation utilized resources needed to improve their well-being.

The effect of participants’ initial state and attitudes was not only apparent with regard to their physical and psychological health; it was also found in reports of students’ sense of connectedness to their social environment. The prospective regression analysis
predicting loneliness at the end of the quarter demonstrated that initial stress and attitudes as well as initial loneliness and attitudes affected later reports. Similar to general health, attitudes were most influential when participants experienced more stress at the beginning of the quarter. Again, it was individuals with more positive racial attitudes who benefited. Those with negative attitudes and relatively high levels of stress were the loneliest at the end of the quarter. This finding supports the idea that a match between attitude and situation may allow one to better cope with other stressors resulting in not only better health but also better life satisfaction. It also suggests the possibility that as a means of coping with stress, participants with positive attitudes may be able or more likely to rely on their roommates as a source of support which led to less loneliness at the end of the quarter. Those with more positive racial attitudes may have been able to use their living situation to cope with stress. Participants with more negative racial attitudes may have been more hesitant or less inclined to turn to their African-American roommate to cope with stress. Consequently, at the end of the quarter, they felt the least connected and the loneliest.

The loneliness analysis also highlighted an interaction between attitudes and initial loneliness. In this case, racial attitudes did not affect participants who were relatively lonely at the beginning of the quarter. Rather, it was the less lonely students for whom racial attitudes affected later reports. Presumably, the lonelier participants were less connected with their roommates at the beginning of the quarter and this pattern did not change over time regardless of racial attitudes. However, among the less lonely participants, individuals with more negative attitudes reported more loneliness at the end of the quarter. This finding may have stemmed from their initial sense of social
connectedness. Such individuals may have felt more comfortable and open around their roommates. Yet, their spontaneous reactions to their African-American roommates involved negativity. These automatically-activated attitudes may have proven harmful to the roommate relationship. Indeed, the regression analysis predicting Session Two relationship assessment (see endnote 4) indicated that more negative racial attitudes were deleterious to the roommate relationship among those who were initially less lonely. This was particularly the case when the relationship was more problematic at the beginning of the quarter. Under such circumstances, possessing a more positive racial attitude would help in improving the relationship. For those with negative racial attitudes, the relationship would be less likely to improve. Thus, at the end of the quarter, those students with more negative attitudes felt less socially connected and understood than students with more positive racial attitudes. Again, having an attitude that matches the situation is generally more beneficial.

In sum, the present experiment demonstrated that in general interracial dormitory roommate relationships did not evoke more stress or have more deleterious health consequences than same-race dormitory roommate relationships. However, the data did highlight conditions under which racial attitudes can affect psychological and physical health. The results provide evidence for the functional value of attitudes and having an attitude that is appropriate for a specific situation. An attitude that is maladaptive for a specific situation can tax one’s resources and leave one less able to cope with other stressors, which can have negative consequences for health and well-being.
<table>
<thead>
<tr>
<th>Variable</th>
<th>White</th>
<th>Black</th>
<th>t(133)</th>
</tr>
</thead>
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<tr>
<td>PSS</td>
<td>36.97</td>
<td>36.95</td>
<td>0.02</td>
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<tr>
<td>BDI</td>
<td>7.76</td>
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<td>0.54</td>
</tr>
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<td>SCL-90</td>
<td>51.09</td>
<td>63.23</td>
<td>1.58</td>
</tr>
<tr>
<td>CHIPS</td>
<td>54.65</td>
<td>57.74</td>
<td>1.06</td>
</tr>
<tr>
<td>Loneliness</td>
<td>2.59</td>
<td>2.48</td>
<td>0.69</td>
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*Table 3.1*: Session 1 means for stress and health measures as a function of roommate race
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<tr>
<th>Variable</th>
<th>White</th>
<th>Black</th>
<th>t(126)</th>
</tr>
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<tr>
<td>PSS</td>
<td>38.22</td>
<td>37.89</td>
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<tr>
<td>BDI</td>
<td>7.69</td>
<td>7.96</td>
<td>0.23</td>
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<td>SCL-90</td>
<td>47.13</td>
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<td>0.92</td>
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<tr>
<td>CHIPS</td>
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<td>59.29</td>
<td>0.65</td>
</tr>
<tr>
<td>Loneliness</td>
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<td>2.43</td>
<td>0.67</td>
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*Table 3.2: Session 2 means for stress and health measures as a function of roommate race*
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<th>Black</th>
<th>t(126)</th>
</tr>
</thead>
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<td>PSS</td>
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<td>-.30</td>
<td>-.24</td>
<td>0.08</td>
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<tr>
<td>SCL-90</td>
<td>-4.39</td>
<td>-7.34^</td>
<td>0.58</td>
</tr>
<tr>
<td>CHIPS</td>
<td>2.38</td>
<td>1.27</td>
<td>0.48</td>
</tr>
<tr>
<td>Loneliness</td>
<td>-.03</td>
<td>-.04</td>
<td>0.07</td>
</tr>
</tbody>
</table>

^ change score differs significantly from zero

*Table 3.3:* Mean difference scores for stress and health measures as a function of roommate race
Table 3.4: Session 1 correlations between attitude and stress/health measures within interracial rooms

<table>
<thead>
<tr>
<th>Session 1 Attitude and Motivation Variables</th>
<th>PSS</th>
<th>BDI</th>
<th>SCL-90</th>
<th>CHIPS</th>
<th>Loneliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatically-Activated Attitude</td>
<td>-.03</td>
<td>.03</td>
<td>.01</td>
<td>.05</td>
<td>.02</td>
</tr>
<tr>
<td>Feeling Thermometer</td>
<td>-.15</td>
<td>.05</td>
<td>-.06</td>
<td>.07</td>
<td>-.12</td>
</tr>
<tr>
<td>Intergroup Anxiety</td>
<td>.32*</td>
<td>-.04</td>
<td>.10</td>
<td>-.07</td>
<td>.20</td>
</tr>
<tr>
<td>Concern</td>
<td>-.11</td>
<td>.12</td>
<td>.04</td>
<td>.10</td>
<td>-.06</td>
</tr>
<tr>
<td>Restraint</td>
<td>.23+</td>
<td>-.01</td>
<td>.13</td>
<td>.06</td>
<td>.06</td>
</tr>
</tbody>
</table>

+ p < .08,  * p < .05
Table 3.5: Session 2 correlations between attitude and stress/health measures within interracial rooms

<table>
<thead>
<tr>
<th>Session 2 Attitude and Motivation Variables</th>
<th>PSS</th>
<th>BDI</th>
<th>SCL-90</th>
<th>CHIPS</th>
<th>Loneliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatically-Activated Attitude</td>
<td>.03</td>
<td>.15</td>
<td>-.04</td>
<td>-.02</td>
<td>.01</td>
</tr>
<tr>
<td>Feeling Thermometer</td>
<td>-.11</td>
<td>-.15</td>
<td>.00</td>
<td>.02</td>
<td>-.24+</td>
</tr>
<tr>
<td>Intergroup Anxiety</td>
<td>.12</td>
<td>-.14</td>
<td>-.18</td>
<td>-.28*</td>
<td>.12</td>
</tr>
<tr>
<td>Concern</td>
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<td>-.05</td>
<td>-.10</td>
<td>-.05</td>
<td>-.11</td>
</tr>
<tr>
<td>Restraint</td>
<td>.08</td>
<td>-.09</td>
<td>.05</td>
<td>-.04</td>
<td>-.08</td>
</tr>
</tbody>
</table>

+ p < .08, * p < .05
Table 3.6: Correlations between change in attitude and stress/health measures within interracial rooms

<table>
<thead>
<tr>
<th>Attitude and Motivation Change Scores</th>
<th>PSS</th>
<th>BDI</th>
<th>SCL-90</th>
<th>CHIPS</th>
<th>Loneliness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatically-Activated Attitude</td>
<td>-.15</td>
<td>.09</td>
<td>-.01</td>
<td>.12</td>
<td>.09</td>
</tr>
<tr>
<td>Feeling Thermometer</td>
<td>-.17</td>
<td>.00</td>
<td>.01</td>
<td>-.08</td>
<td>-.14</td>
</tr>
<tr>
<td>Intergroup Anxiety</td>
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<td>.16</td>
<td>-.03</td>
<td>.13</td>
<td>-.04</td>
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<tr>
<td>Concern</td>
<td>.17</td>
<td>-.02</td>
<td>.25+</td>
<td>.09</td>
<td>.13</td>
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<tr>
<td>Restraint</td>
<td>.02</td>
<td>-.19</td>
<td>-.04</td>
<td>-.23</td>
<td>-.33*</td>
</tr>
</tbody>
</table>

+ p < .08, * p < .05
Partial correlations controlling for the relevant Session 1 stress and health measures are within the parentheses.

Table 3.7: Correlations between Session 1 attitude measures and Session 2 stress/health measures within interracial rooms.
Figure 3.1: Session Two emotional distress factor as a function of Session One automatically-activated racial attitude and Session One emotional distress factor at values one standard deviation above and below the means.
Figure 3.2: Session Two loneliness as a function of Session One automatically-activated racial attitude and Session One perceived stress at values one standard deviation above and below the means.
Figure 3.3: Session Two loneliness as a function of Session One automatically-activated racial attitude and Session One loneliness at values one standard deviation above and below the means.
Figure 3.4: Session Two relationship assessment factor as a function of Session One loneliness, Session One relationship assessment factor and Session One automatically-activated racial attitude at values one standard deviation above and below the means.
CHAPTER 4
GENERAL DISCUSSION

The goal of the present research was to further explore consequences of intergroup contact in order to better understand the potential benefits of such interaction and to determine what effects, if any, intergroup contact may have on an individual’s stress levels and general well-being. The purpose of the first study was to test the contact hypothesis while controlling for several shortcomings of previous research in the area. The foci of the second study were the potential effect of interracial contact on stress and health and, at a more basic level, the functional value of having an attitude that matches the demands of a given situation.

Validity of the contact hypothesis

Overall, the results of the first experiment were very positive. Interracial contact in a dormitory housing situation proved to be beneficial in reducing prejudice. White students who were randomly assigned to live with an African-American roommate demonstrated improvement in their automatically-activated attitudes toward African-Americans and experienced a decrease in intergroup anxiety. Such improvements were not observed with students randomly housed with a White roommate.
Notably, the benefits of interracial contact were found in terms of real-life rooming situations, and because the experiment focused on students who had been randomly paired to either an African-American or a White roommate, the research is characterized by all of the advantages of random assignment to condition. Therefore, unlike previous work, concerns with self-selection were eliminated. The dormitory setting also provided a situation in which the interracial contact occurred for an extended period of time rather than a short laboratory session. Thus, the interaction was both more natural and more extensive, allowing for a better assessment of the consequences of contact. The study also incorporated implicit measures of attitudes as well as self-report measures. Thus, concerns with invalid reporting on the explicit measures due to motivations to not be perceived as prejudiced were allayed.

In light of the various design features aimed at overcoming shortcomings inherent to previous research, the observed reduction in prejudice, especially in students’ automatically-activated racial attitudes, provides striking and noteworthy support for the contact hypothesis. Interestingly, this positive outcome was found despite interracial roommate relationships being evaluated much more negatively than same-race roommate relationships. Living with an African-American roommate for a single academic quarter (three months), even though not as satisfying on average as rooming with a fellow White student, led to an alteration in participants’ spontaneous reactions to African-Americans as a group. Presumably, having greater exposure and opportunity to interact with the African-American roommates (and possibly their friends) led to the attitude change. Participants in same-race rooms simply did not have the same opportunities and, thus, did not exhibit any change in their racial attitudes.
Unfortunately, the data analyses were not very successful in elucidating specific factors of the interracial roommate relationship responsible for the improvement in racial attitudes. Prospective analyses proved unsuccessful in predicting racial attitudes from roommate relationship factors and/or motivational factors. However, the inability to find a single underlying mechanism to the reduction in prejudice may not be surprising.

Over the years, several mechanisms have been proposed and supported to explain how intergroup contact leads to reduction in prejudice (Dovidio et al., 2003; Pettigrew, 1998). According to Allport’s (1954) original formulation, intergroup contact would serve to simply provide individuals with the opportunity to learn and gain knowledge about a different group. Through information gain, people are able to correct misconceptions, reduce uncertainty, and acquire a better understanding of a different group. A second mechanism that has been discussed focuses on behavior modification (Pettigrew, 1998). Intergroup interactions may serve to establish new norms and expectations for behavior. Such behavior change may prompt attitude change as a means of reducing dissonance, particularly if the intergroup interactions are positive experiences. Another potential mechanism for attitude change involves affective factors (Pettigrew & Tropp, 2000). A positive intergroup experience may lead to a reduction in uncertainty or anxiety about a given group and create new, positive associations with that group (Stephan & Stephan, 1985). Intergroup contact may also increase empathy for another group, which can translate into more positive evaluations of that group (Batson, Polycarpou, Harmon-Jones, Imhoff, Mitchener, Bednar, et al., 1997). Pettigrew and Tropp (2006) have recently suggested that the benefits of intergroup contact also may accrue simply as a function of mere exposure. Increased experiences with outgroup
members enhances familiarity, which leads to liking (see Zajonc, 2001, for a recent review) and eventually may result in reduction of prejudice.

Additional mechanisms by which intergroup contact has been argued to reduce prejudice have been based on social identity theory, which suggests that intergroup contact is effective when it leads individuals to alter how they categorize outgroup members. One way this may occur is through decategorization (Brewer & Miller, 1984). That is, group distinctions are deemphasized and individuals are evaluated on personal factors rather than group membership. Another potential change in group categorization is recategorization (Gaertner & Dovidio, 2000). Instead of perceiving another as belonging to a distinct, different group, intergroup contact can lead to a more inclusive, single group. As such, ingroup favoritism processes encourage positivity for the other person and, in turn, prejudice reduction.

With so many proposed mechanisms for prejudice reduction through intergroup contact, it is not necessarily surprising then that automatically-activated attitudes at the time of the second session were not predicted from the earlier roommate relationship and motivational factors. It is probably naïve to think that a single mechanism would prove responsible for prejudice reduction. Any of the previously stated mechanisms, or a combination of them, could account for the attitude change experienced by participants in the interracial rooms. More than likely, it depends on the situation and the individual as to how interracial contact affected racial attitudes. In the dorm setting, there were several factors that could have contributed to the attitude change. For example, simply being exposed to an African-American individual may have been sufficient to change some students’ attitudes. For others, involvement and interaction with their roommate and/or
their roommates’ social networks may have been necessary to form more positive associations. Perceiving their African-American roommate as more typical and identified with OSU and their dorm or experiencing less anxiety when interacting with an African-American may also have been important for some individuals. Any or all of these mechanisms could have brought about the reduction in prejudice observed in the first study. Regardless of specific mechanisms, assignment to an interracial room was beneficial and resulted in prejudice reduction at an automatic level, thus providing clear support for the contact hypothesis.

In addition to the attitude change, students in the interracial rooms demonstrated a reduction in intergroup anxiety toward African-Americans. On average, they reported less anxiety at the end of the quarter than did participants sharing a room with a fellow White. However, not all students demonstrated such improvement over time. The prospective regression analysis revealed an identifiable subgroup for whom intergroup anxiety remained high. Intergroup anxiety toward African-Americans at the end of the quarter was predicted from initial racial attitudes and assessment of the roommate relationship, such that students with more negative attitudes and who assessed their roommate relationship more negatively experienced more intergroup anxiety at the end of the quarter. The finding suggests that exposure to outgroup members alone was not enough to reduce uncertainty about interacting with an African-American. Instead, an individual’s attitudes and expectations going into a situation and whether one chooses to take advantage of the opportunity to interact with an outgroup member determine whether benefits will result. The quality and extent of interaction are most likely crucial to determining the effect of contact. If an individual chose to avoid their African-
American roommate or had negative experiences interacting with their roommate, then they most likely would not benefit from such interactions. Thus, being open to intergroup interactions is a key component to improving intergroup anxiety and expectations.

The ability to predict the change in intergroup anxiety from the roommate relationship variables but not the change in automatically-activated attitudes may be due to the focus of each variable. Automatically-activated attitudes are general evaluations about a given target, and can develop through both direct and indirect experiences (Fazio & Zanna, 1981). As previously discussed, there are several different means by which racial attitudes may have improved. This is not to say that quality and extent of interracial interaction is irrelevant to racial attitudes. Presumably, if an individual had a positive experience with their roommate, new, positive associations toward African-Americans would form. However, the development of a close friendship with the roommate was not necessarily the only way for such positive associations to accrue and for automatically-activated attitudes to change. Intergroup anxiety on the other hand is specific to an individual’s comfort with interacting with an African-American.

Overcoming this uncertainty seems much more connected to gaining successful direct experience. It is such success that allows the individual to feel confident and able to engage in interracial interactions.

**Attitude Functionality**

The second study demonstrated that, despite interracial living situations being evaluated more negatively than same-race living situations, students did not experience more stress or health problems in the interracial rooms. Although White freshmen were
less satisfied and felt less supported with an African-American roommate, this did not translate into a difference in overall well-being. Apparently, individuals can, for the most part, cope with problematic living situations sufficiently well that their emotional and physical health is not affected. If the living situation is unsatisfactory and difficult, students could simply chose to avoid interaction with their roommate and instead interact more extensively with other dormitory residents or campus friends. By doing so, they avoid much of the stress evoked by the living situation and do not suffer, on average.

However, this was not universally true. The analyses within the interracial rooms suggest that some coped better than others. The second study allowed for the examination of the functionality of having an attitude that matches a given situation. As one of the proposed functions of attitudes is to help individuals navigate their social world (Allport, 1935; Fazio, 2000), having an attitude that is more appropriate and coheres with the social environment in which an individual finds him/herself would seem more adaptive and useful than an attitude that is not in accord with the setting. For those students in interracial rooms, having a positive racial attitude going into the situation was more beneficial than an initially negative racial attitude, particularly if students were currently experiencing stress or health concerns. For students with more stress or health concerns at the beginning of the quarter, more positive automatically-activated attitudes buffered them from stress and health problems at the end of the quarter. On the other hand, negative racial attitudes accentuated initial stress and health concerns.

Previous research has demonstrated that accessible attitudes save resources allowing individuals to make decisions faster and cope with stress (Blascovich et al., 1993; Fazio et al., 1992; Fazio & Powell, 1997). Having an attitude that is appropriate
and adaptive for a given situation served the same purpose in the interracial dormitory rooms. A positive racial attitude would be more beneficial to forming a satisfactory living situation with an African-American roommate. Individuals with a more positive attitude would not be as concerned about interacting with their roommate and offending their roommate. Consequently, they would be able to conserve mental resources and use them to cope with their stress and health concerns. They may also be able to use their roommate relationship as a source of support when overcoming their stressors.

Individuals with more negative racial attitudes in an interracial room may need resources to monitor their behavior and interactions with their roommates. In an attempt to keep their automatically-activated attitudes from influencing their behavior and potentially offending their roommate or causing friction in their living situation, these individuals may use resources needed to reduce stress and improve their health. Recent work by Richeson and Shelton (2003) has demonstrated that interracial interactions can lead to deficits in cognitive functioning particularly for individuals who are highly prejudiced. Thus, at the end of the quarter, these students may have been less able to address their well-being concerns and consequently report more physical and psychological distress.

The moderating effect of attitudes on students’ health and well-being in the second study clearly demonstrates the significant role of attitudes and the function they serve. Not having an attitude that fits or is appropriate to one’s social world can have serious consequences for one’s health. This work provides evidence for the functionality of attitudes and extends our understanding. Previous work demonstrated the importance of accessible attitudes. The current work uniquely demonstrated that the valence of attitudes and their functional match to the social environment are also important. Having
an accessible attitude may help with decision making and save time and resources, but having an accessible attitude that is inappropriate for a given situation may be more harmful and hinder a person’s progress.

Future Directions

In the future, research that takes advantage of dormitory housing situations should be extended to explore the effects of the interracial roommate relationship on African-American or minority students. The present research examined the situation only from the perspective of the White student. Recent work has suggested that intergroup contact is less effective for minority than for majority group members (Tropp & Pettigrew, 2005) and that minority group member’s experiences during an intergroup interaction are quite different than a majority group member’s experience (Shelton, Richeson, & Salvatore, 2005). In the context of the dormitory roommate situation, it would be interesting to compare the African-American student’s perception of the relationship to that of the White student’s perception and to determine whether the experience benefits the African-American students. Such future work would also provide a more detailed understanding of the roommate relationship and the quality of the interracial interactions.

Another direction for the roommate relationship work is to further extend the time period. Prejudice reduction was found after the first academic quarter. It would be interesting to determine whether automatically-activated attitudes continued to improve throughout the academic year or to determine at what point improvement would asymptote. It would also be informative to examine how the roommate relationship progressed after the first quarter. Although racial attitudes improved after a quarter, the roommate relationships were not assessed more positively. However, there were some
small indications in the reports of the interracial roommate relationships that there was improvement over time. With more time, it may be possible to observe larger changes in the assessment of the relationships. Following students after their first year and after they are no longer living with their roommate would also be highly informative as to the persistence of any prejudice reduction and the extent of any long-term effects of the interracial living situation. Van Laar and colleagues (2005) found benefits of interracial dormitory housing in self-report measures after students had left the housing situation, which suggests the long term value of intergroup contact. It would be helpful to determine whether the same is true of automatically-activated racial attitudes, or whether these individuals are just better rehearsed at providing socially acceptable responses due to their intergroup experience.

In sum, the present findings extend knowledge regarding two distinct research domains: intergroup contact and attitude functionality. In a natural field experiment which corrected for several shortcomings of previous research, strong support for the contact hypothesis was found. Interracial dormitory relationships were found to improve automatically-activated racial attitudes and decrease intergroup anxiety. Evidence also was found regarding the functional value of attitudes such that having an attitude which matches a situation is more beneficial than a mismatch. An attitude that is appropriate for a given situation can help an individual adjust to the setting and, hence, has consequences for an individual’s well-being.
BIBLIOGRAPHY


Hierarchical regression analyses were conducted predicting each of the Session Two roommate relationship variables that comprised the composite factor score. The interaction between Session One automatically-activated racial attitudes and Session One intergroup anxiety reached statistical significance in nearly every case.

As an objective measure of participants’ stress and health, salivary cortisol levels also were assessed in this experiment. Cortisol is the primary human hormone that is produced in response to a stressful situation. Cortisol inhibits the reproductive system, growth hormone secretion, and, most relevant to second experiment, the immune system (Chrousos, 1995; Chrousos et al., 1993). During the stress response, energy used by these systems is shunted toward responding to the stressor. In the short term, the stress response is beneficial in providing the person with energy to confront or flee from the stressor. However, if the stressor continues for an extended period of time, the down-regulation of the other systems can be harmful, especially the reduced immune function. Dealing with a chronic stressor leaves individuals more vulnerable to infection and slower to heal from wounds (Cohen et al., 1998; Kiecolt-Glaser et al., 1995). A common, noninvasive measure of immune response and health is salivary cortisol (Baum & Grunberg, 1995), which has been shown to increase in response to physical and psychological stressors (e.g., Bassett et al., 1987; Stahl & Dorner, 1982). Saliva samples
were collected from the participants at the beginning, middle, and end of the quarter. Unfortunately, the cortisol assays did not reveal consistent and interpretable findings and, hence, receive no further consideration in this report.

Hierarchical regression analyses were conducted predicting each of the Session Two physical and psychological health variables that comprised the composite factor score. The interaction between Session One automatically-activated racial attitudes and the relevant Session One health measure reached statistical significance in every case.

Consistent with this possibility, a correlation was evident between loneliness and relationship assessment at the end of the quarter, $r = -.25, p < .06$. Individuals who evaluated their roommate relationship more negatively also reported relatively more loneliness. In addition, a prospective regression analysis revealed that relationship assessment at the end of the quarter was itself a function of initial loneliness and racial attitudes, just as was true for the final reports of loneliness. Session Two relationship assessment factor scores were predicted from the Session One relationship assessment factor, Session One loneliness, Session One automatically-activated racial attitudes, and their interaction terms. Naturally, there was a main effect of Session One relationship assessment, $b = .89, t (49) = 12.74, p < .001$. The more positively participants evaluated the roommate relationship at the beginning of the quarter, the more positive participants were of the relationship at the end of the quarter. However, there was also an interaction between Session One loneliness and Session One roommate assessment, $b = .19, t (46) = 2.20, p < .05$, which was qualified further by the three-way interaction involving initial attitudes, $b = .85, t (45) = 1.99, p = .05$. For individuals who reported more loneliness at the beginning of the quarter, automatically-activated attitudes did not predict relationship
assessment at the end of the quarter, $ts < 1$. Instead, initial relationship assessments determined later relationship evaluations with more positive evaluations at the beginning of the quarter leading to more positive reports at the end of the quarter (see Figure 3.4, top panel). In other words, the status of the relationships remained relatively constant across time. For individuals who reported less loneliness at the beginning of the quarter, racial attitudes again were not predictive of Session Two roommate assessment if participants were initially positive about the relationship, $t (45) = 1.35, p > .18$. However, if participants evaluated their roommate relationship more negatively at the beginning of the quarter, automatically-activated racial attitudes did affect later relationship assessment, $t (45) = 2.03, p < .05$ (see Figure 3.4, bottom panel).

Participants with more negative racial attitudes assessed their roommate relationship more negatively than participants with more positive racial attitudes. Thus, just as with the Session Two loneliness analysis, initial racial attitudes were the most influential for participants who were initially less lonely. With regard to relationship assessment, this was particularly the case when the roommate relationship was less satisfactory and more problematic to start. For individuals who felt socially connected but did not “hit it off” with their roommate at the beginning of the quarter, it was more beneficial to the roommate relationship to possess a positive racial attitude than a negative attitude. Initially rocky relationships improved if the participant was not experiencing loneliness and held positive racial attitudes.
APPENDIX A

QUESTIONNAIRE PACKET
For the next two questions, respond by choosing one of the options below.

<table>
<thead>
<tr>
<th>Option</th>
<th>hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0 to 3 hours</td>
</tr>
<tr>
<td>B</td>
<td>3.01 to 6 hours</td>
</tr>
<tr>
<td>C</td>
<td>6.01 to 12 hours</td>
</tr>
<tr>
<td>D</td>
<td>12.01 to 15 hours</td>
</tr>
<tr>
<td>E</td>
<td>15.01 to 18 hours</td>
</tr>
<tr>
<td>F</td>
<td>18.01 to 21 hours</td>
</tr>
<tr>
<td>G</td>
<td>21.01 to 24 hours</td>
</tr>
<tr>
<td>H</td>
<td>24.01 to 27 hours</td>
</tr>
<tr>
<td>I</td>
<td>27.01 to 30 hours</td>
</tr>
<tr>
<td>J</td>
<td>more than 30 hours</td>
</tr>
</tbody>
</table>

1. Approximately how many hours per week do you spend in class or labs (for course credit)? _____

2. Approximately how many hours per week do you spend doing homework for classes (e.g., reading, writing papers, doing problem sets, etc.)? _____

3. As of this moment, what do you expect your first quarter GPA will be (approximately)? (circle your answer)

<table>
<thead>
<tr>
<th>Option</th>
<th>GPA range</th>
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<tbody>
<tr>
<td>A</td>
<td>3.70 to 4.0</td>
</tr>
<tr>
<td>B</td>
<td>3.40 to 3.69</td>
</tr>
<tr>
<td>C</td>
<td>3.10 to 3.39</td>
</tr>
<tr>
<td>D</td>
<td>2.80 to 3.19</td>
</tr>
<tr>
<td>E</td>
<td>2.50 to 2.79</td>
</tr>
<tr>
<td>F</td>
<td>2.20 to 2.49</td>
</tr>
<tr>
<td>G</td>
<td>1.90 to 2.19</td>
</tr>
<tr>
<td>H</td>
<td>1.60 to 1.89</td>
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<tr>
<td>I</td>
<td>1.30 to 1.59</td>
</tr>
<tr>
<td>J</td>
<td>Below 1.30</td>
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</table>

4. Are you currently part of a Living Learning Program? (circle your answer)

<table>
<thead>
<tr>
<th>Option</th>
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</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
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</tbody>
</table>

Use the following scale to answer the next four questions.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very</th>
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<td></td>
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</table>

5. How prepared do you feel for college? _____

6. How difficult has it been so far to balance time spent on academic and social or extracurricular activities? _____

7. Overall, how satisfied have you been with your classes this quarter? _____

8. Overall, how happy are you about your college experiences so far at OSU? _____
Living Arrangements

9. **At the beginning of the quarter**, were you living in a **dorm room** with at least one other person? (If your answer is “no” to **ANY** part of this question, respond “no.”) (circle your answer)
   - A- yes
   - B- no

10. If so, are you still living with this same person/people now? (circle your answer)
    - A- yes
    - B- no

11. If you are not still living with the same person/people as at the beginning of the quarter, who initiated the move? (circle your answer)
    - A- I did
    - B- My roommate did
    - C- Doesn’t apply -- we are still living together

12. If your living situation has changed, what is the reason(s) for the change? __________
    __________________________________________________________________________
    __________________________________________________________________________
    __________________________________________________________________________

13. If you are still living with the same person/people as at the beginning of the quarter, do you plan to continue being roommates next quarter? (circle your answer)
    - A- yes
    - B- no
    - C- doesn’t apply – we are not still living together

***IF YOUR ANSWER TO #10 IS “NO,” please refer to your **FIRST ROOMMATE** when you respond to all future questions about your roommate or your living situation***

14. How did you decide to become roommates? (with your first roommate, if your living situation has changed) (circle your answer)
    - A- assigned by the housing office
    - B- mutually requested
    - C- other
    - D- no roommate

15. When you applied for housing, did you request to live in a particular dorm? (circle your answer)
    - A- yes
    - B- no
    - C- doesn’t apply (didn’t want to live in a dorm at all)
16. If you did request to live in a particular dorm, was this request granted? (circle your answer)
   A- yes
   B- no
   C- doesn’t apply (didn’t request to live in any dorm)

17. Did you know your (first) roommate before you moved to OSU (Columbus)?
   [meeting during summer orientation doesn’t count] (circle your answer)
   A - yes
   B - no

The following questions are about your roommate. If you have more than one roommate, please focus on the roommate with whom you have the **LEAST** in common to answer the questions. Use the following scale to answer the next questions or state the extent to which you agree with each statement.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
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18. I am extremely happy with my (first) roommate. ______

19. I have a very strong relationship with my (first) roommate. ______

20. My relationship with my (first) roommate is very rewarding. ______

21. How compatible are you and your (first) roommate? ______

22. How similar are your and your (first) roommate’s values? ______

23. How similar are your and your (first) roommate’s interests? (e.g., academic, political, and recreational) ______

24. How similar are you and your (first) roommate’s habits? (e.g., time spent watching T.V., listening to music, studying, sleeping) ______

25. How many friends do you and your (first) roommate have in common? (circle your answer)
   A- 0          F- 5
   B- 1          G- 6
   C- 2          H- 7
   D- 3          I- 8
   E- 4          J- more than 8
26. How much time (on average) do/did you spend with your (first) roommate in your room each day (not including time spent sleeping)? (circle your answer)
   A- less than 1 hour       F- between 5 and 6 hours
   B- between 1 and 2 hours  G- between 6 and 7 hours
   C- between 2 and 3 hours  H- between 7 and 8 hours
   D- between 3 and 4 hours  I- between 8 and 9 hours
   E- between 4 and 5 hours  J- 9 hours or more

27. How much time (on average) do/did you spend with your (first) roommate outside of your room each day? (circle your answer)
   A- less than ½ hour       F- between 2 ½ and 3 hours
   B- between ½ and 1 hour    G- between 3 and 3 ½ hours
   C- between 1 and 1 ½ hours H- between 3 ½ and 4 hours
   D- between 1 ½ and 2 hours I- between 4 and 4 ½ hours
   E- between 2 and 2 ½ hours J- 4 ½ hours and more

Again, if you have more than one roommate, please answer these questions focusing on the roommate you have the LEAST in common with. Use the following scale to answer the next two questions.

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<th>Not at all</th>
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28. How comfortable does/did your (first) roommate feel about your guests in general? ______

29. How comfortable do/did you feel about your (first) roommates’ guests in general? ______

30. When you and your (first) roommate do things together (either inside or outside your room), who generally initiates the activity? (circle your answer)
   Almost always me
   Usually me
   More likely than not to be me
   More likely than not to be my roommate
   Usually my roommate
   Almost always my roommate
31. Is either you or your (first) roommate a varsity athlete? (choose the answer that best applies) (circle your answer)
   A - I am a varsity athlete
   B - My roommate is a varsity athlete
   C - We are both varsity athletes on the same team.
   D - We are both varsity athletes but are not on the same team
   E - Neither of us is a varsity athlete

Use the following scale to answer the next seven questions.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A great deal</th>
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<td>0 1 2 3 4 5 6 7</td>
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On average, how often does/did your (first) roommate (if you have more than one roommate, the roommate you have the least in common with) …

32. give you useful information or advise? _____
33. listen to you when you talk? _____
34. show that they care? _____
35. help you with specific problems? _____
36. give you things that you need? _____
37. act in an unpleasant manner? _____
38. criticize you? _____
39. make your life difficult? _____
Activities

Please use the following scale to answer the next several questions. If you have a different roommate than at the beginning of the quarter, please indicate how often you and your first roommate did each activity when you were still living together.

A- Never
B- Once or twice this semester
C- Once or twice per month
D- Three times per month
E- Once per week
F- Two or three times each week
G- Four or five times per week
H- Six or seven times per week
I- More than once per day

On average, how often do/did you and your (first) roommate (if you have more than one roommate, the roommate you have the least in common with) …

40. “hang out” together in the room? _____

41. run errands together (e.g., buying books or groceries)? _____

42. eat out together (e.g., at a cafeteria or restaurant)? _____

43. study or do homework together in your room? _____

44. study or do homework together outside your room (e.g., at the library or the Union)? _____

45. watch television or videotapes together? _____

46. go out to movies, coffee shops, bars, or parties together? _____

47. work out or do intramural sports together? _____

48. participate in campus organizations, events (e.g., lectures, concerts)? _____

49. share books, computer resources, or school supplies? _____

50. share food, “munchies,” and the like? _____
51. Think about the people with whom you’ve spent the most time since you arrived at OSU (Columbus). How many of these people did you know prior to moving to OSU? (circle your answer)
   A- none  F- 5
   B- 1      G- 6
   C- 2      H- 7
   D- 3      I- 8
   E- 4      J- more than 8

Use the following scale to answer the next two questions.

Not at all       Somewhat       Very

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<td>8</td>
</tr>
</tbody>
</table>

52. How extraverted would you describe yourself? _____

53. How important to your social life is attending parties? _____

54. How many parties have been at fraternities or sororities? (circle your answer)
   A- none     F- five
   B- one      G- six
   C- two      H- seven
   D- three    I- eight
   E- four     J- more than eight

55. Do you have an intention to join (or have you joined) a fraternity or sorority? (circle your answer)
   A-Yes
   B- No

Friends

Think of the 2 people at OSU (other than your roommate) that you spend the most time with. Let’s call them Person U and Person V.

Place the initials of Person U on the line (No Names Please). _______________

Place the initials of Person V on the line (No Names Please). _______________
56. How often do you interact with person U? (circle your answer)
   A-Never  
   B-Rarely  
   C-Once a month  
   D-A couple of times a month  
   E-Weekly  
   F-A couple of times a week  
   G-Daily

57. How often do you interact with person V? (circle your answer)
   A-Never  
   B-Rarely  
   C-Once a month  
   D-A couple of times a month  
   E-Weekly  
   F-A couple of times a week  
   G-Daily

Use the following scale to answer the next 2 questions.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>3</td>
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<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

58. Do you consider person U to be a close friend? _____

59. Do you consider person V to be a close friend? _____

Think of the 2 people at OSU (other than you) that your (first) roommate (least similar) spends/spent the most time with. Let’s call them Person W and Person X.

Place the initials of Person W on the line (No Names Please).  ____________

Place the initials of Person X on the line (No Names Please).  ____________

60. How often do/did you yourself interact with person W? (circle your answer)
   A-Never  
   B-Rarely  
   C-Once a month  
   D-A couple of times a month  
   E-Weekly  
   F-A couple of times a week  
   G-Daily
61. How often do/did you yourself interact with person X? (circle your answer)
   A-Never
   B-Rarely
   C-Once a month
   D-A couple of times a month
   E-Weekly
   F-A couple of times a week
   G-Daily

Use the following scale to answer the next 2 questions.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3</td>
<td>4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>

62. Do you consider person W to be a close friend of yours? ____

63. Do you consider person X to be a close friend of yours? ____

You already have represented 4 people as persons U, V, W, and X above. To help you answer the next set of questions, please refer to these letters and initials on the previous pages. Consider yourself to be person Y and your roommate to be person Z. If U or V happens to be the same person as W or X, choose option “F” (this could happen if you and your roommate both interact very frequently with the same person).

Think of these six people as you answer the questions that follow. Using the scale below, please indicate how well each of these people knows one another.

A- Don’t know each other.
B- Have met, but interact rarely or never.
C- Know each other, but interact only occasionally.
D- Know each other, and interact frequently
E- Know each other and interact daily.
F- They are the same person.

64. UV _____
65. UW _____
66. UX _____
67. UY _____
68. UZ _____
69. VW _____
70. VX  _____  
71. VY  _____  
72. VZ  _____  
73. WX  _____  
74. WY  _____  
75. WZ  _____  
76. XY  _____  
77. XZ  _____  
78. YZ  _____  

**Self Description**  
To what extent does each of the following traits describe you?

<table>
<thead>
<tr>
<th>Not at all Characteristic of me</th>
<th>Somewhat Characteristic of me</th>
<th>Completely Characteristic of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

79. Kind?  _____  
80. Open and disclosing?  _____  
81. Understanding?  _____  
82. Responsive to others’ needs?  _____  
83. Tolerant and accepting?  _____  
84. Critical and judgmental?  _____  
85. Lazy?  _____  
86. Controlling and dominant?  _____  
87. Emotional?  _____  
88. Moody?  _____  
89. Distant?  _____  
90. Complaining?  _____  
91. Childish?  _____  
92. Self-assured?  _____  
93. Sociable or extraverted?  _____  

123
94. Intelligent? _____  
95. Witty? _____  
96. Responsible? _____  
97. Neat? _____  
98. Honest? _____

Description of Roommate
If you have more than one roommate, focus on the roommate you are least similar to. To what extent does each of the following describe your (first) roommate?

<table>
<thead>
<tr>
<th>Not at all Characteristic of My roommate</th>
<th>Somewhat Characteristic of My roommate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

99. Kind? ______

100. Open and disclosing? _____  
101. Understanding? ______

102. Responsive to others’ needs? _____  
103. Tolerant and accepting? _____  
104. Critical and judgmental? _____  
105. Lazy? ______

106. Controlling and dominant? _____  
107. Emotional? ______

108. Moody? _____

109. Distant? _____

110. Complaining? ______

111. Childish? _____

112. Self-assured? _____

113. Sociable or extraverted? ______

114. Intelligent? ______

115. Witty? ______

116. Responsible? ______
Description of Ideal Roommate
If you could create the ideal roommate, to what extent would s/he possess each of the following characteristics? In describing your ideal roommate, please base your ratings on your own personal preferences.

Not at all Characteristic of Somewhat Characteristic of My ideal roommate My ideal roommate

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
</table>

117. Neat? ______
118. Honest? ______

119. Kind? ______
120. Open and disclosing? ______
121. Understanding? ______
122. Responsive to others’ needs? ______
123. Tolerant and accepting? ______
124. Critical and judgmental? ______
125. Lazy? ______
126. Controlling and dominant? ______
127. Emotional? ______
128. Moody? ______
129. Distant? ______
130. Complaining? ______
131. Childish? ______
132. Self-assured? ______
133. Sociable or extraverted? ______
134. Intelligent? ______
135. Witty? ______
136. Responsible? ______
137. Neat? ______
138. Honest? ______
Personal Beliefs and Political Attitudes Survey

The freshman year in college is often the first time people encounter others whose attitudes, cultures, and ethnic identities differ significantly from their own. Depending on one’s own attitudes, it is possible that this heterogeneity may contribute to making the college experience either more or less enjoyable. Therefore, the remainder of the questions assess your personal beliefs and political attitudes.

Please read each of the following statements carefully. Indicate the extent to which you agree or disagree with each statement.
A- strongly disagree
B- disagree
C- disagree somewhat
D- no opinion
E- agree somewhat
F- agree
G- strongly agree

139. In today’s society it is important that one not be perceived as prejudiced in any manner. ______

140. I always express my thoughts and feelings, regardless of how controversial they might be. ______

141. I get angry with myself when I have a thought or feeling that might be considered prejudiced. ______

142. If I were participating in a class discussion and a Black student expressed an opinion with which I disagreed, I would be hesitant to express my own viewpoint. ______

143. Going through life worrying about whether you might offend someone is just more trouble than it’s worth. ______

144. It’s important to me that other people not think I’m prejudiced. ______

145. I feel it’s important to behave according to society’s standards. ______

146. I’m careful not to offend my friends, but I don’t worry about offending people I don’t know or don’t like. ______

126
147. I think that it is important to speak one’s mind rather than to worry about offending someone.

148. It’s never acceptable to express one’s prejudices.

149. I feel guilty when I have a negative thought or feeling about a Black person.

150. When speaking to a Black person, it’s important to me that he/she not think I’m prejudiced.

151. It bothers me a great deal when I think I’ve offended someone, so I’m always careful to consider other people’s feelings.

152. If I have a prejudiced thought or feeling, I keep it to myself.

153. I would never tell jokes that might offend others.

154. I’m not afraid to tell others what I think, even when I know they disagree with me.

155. If someone who made me uncomfortable sat next to me on a bus, I would not hesitate to move to another seat.

156. The government should spend less on defense and focus more on domestic needs.

157. If drugs were decriminalized, society would degenerate.

158. Some crimes are so despicable, they should be punished by death.

159. Gay people are entitled to the same constitutional rights as heterosexuals.

160. It is a women’s constitutional right to choose whether or not to have an abortion.

161. Environmentalists should worry less about the welfare of animals and more about people’s jobs.
162. Censorship of music and art violates people’s constitutional rights.

163. Sex education in schools is vital, especially with the increasing concern of AIDS.

164. Student-led prayer should be allowed in public schools.

165. Quotas should be set so that more women are hired for traditionally male-dominated jobs.

166. For this question, choose from the options below.
   How would you describe yourself in terms of your political leanings? (circle your answer)
   A-Very conservative
   B-Conservative
   C-Middle of the Road
   D-Liberal
   E-Very liberal

Assessment of Societal Groups

We are interested in people’s attitudes toward, and overall evaluations of, members of various social groups. Below you will see something that looks like a thermometer. You will use this to indicate your attitude toward different groups. Here is how it works. If you have a positive attitude toward typical members of the group, you would give them a score somewhere between 50º and 100º, depending on how favorable your evaluation of the group is. On the other hand, if you have a negative attitude toward typical members of the group, you would give them a score somewhere between 0º and 50º, depending on how unfavorable your evaluation of that group is. The degree labels will help you locate each group on the thermometer. You are not restricted to the numbers indicated—feel free to use any number between 0º and 100º. Please be honest.

167. Habitat for Humanity ______

168. Lawyer ______
169. Republican party ______
170. Hispanics ______
171. Daytime talk show hosts ______
172. Muslims ______
173. College professors ______
174. Nurses ______
175. Greenpeace ______
176. Congress ______
177. Elementary school teachers ______
178. Blacks ______
179. American Red Cross ______
180. National Rifle Association ______
181. Mormons ______
182. Democratic party ______

**Group memberships**

Use the following scale to respond to the next 12 questions. Answer questions about your roommate focusing on the roommate you are least similar to if you have more than one roommate.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>4</td>
<td>5</td>
<td>6</td>
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<td>7</td>
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<td>9</td>
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</tbody>
</table>

183. How strongly do you identify with OSU? _____
184. How strongly do you identify with your dorm? _____
185. How strongly do you identify with your racial or ethnic group? _____
186. How strongly do you think your (first) roommate identifies with OSU? _____

187. How strongly do you think your (first) roommate identifies with your dorm? _____

188. How strongly do you think your (first) roommate identifies with his/her racial or ethnic group? _____

189. To what extent do you think you are a typical OSU freshman? _____

190. To what extent do you think you are a typical resident of your dorm? _____

191. To what extent do you think you are a typical member of your racial or ethnic group? _____

192. To what extent do you think your (first) roommate is a typical OSU freshman? _____

193. To what extent do you think your (first) roommate is a typical resident of your dorm? _____

194. To what extent do you think your (first) roommate is a typical member of his/her racial or ethnic group? _____

**Racial Diversity Experience**

Use the following scale to respond to the next 11 questions.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
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<tr>
<td></td>
<td>2</td>
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<tr>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

195. I would feel nervous if I had to sit alone in a room with a black person and start a conversation. _____

196. I just do not know what to expect from black people. _____

197. Although I do not consider myself a racist, I do not know how to present myself around blacks. _____

198. My lack of knowledge about the black culture prevents me from feeling completely comfortable around blacks. _____

199. I can interact with blacks without experiencing much anxiety. _____
200. If I were at a party, I would have no problem with starting a conversation with a black person. _____

201. It makes me uncomfortable to bring up the topic of racism around black people. _____

202. I experience little anxiety when I talk to blacks. _____

203. The cultural differences between blacks and whites make interactions between blacks and whites awkward. _____

204. I would experience some anxiety if I were the only white in a room full of blacks. _____

205. I worry about coming across as a racist when I talk with blacks. _____

For each of the following questions below, choose one of the following response options:

A- White / European American (not of Hispanic origin)
B- Black / African American (not of Hispanic origin)
C- Hispanic (e.g., Mexican American, Puerto Rican)
D- Asian American or Pacific Islander
E- American Indian or Alaskan Native
F- Other (describe on your short answer sheet)

206. How would you characterize your race? _____

Refer to the roommate you have focused on when answering previous questions.

207. How would you characterize your roommate’s race? _____

Refer to the individuals you designated as persons U, V, W, and X on your short answer sheet. In each case, what is the individual’s race?

208. Person U _____

209. Person V _____

210. Person W _____

211. Person X _____
APPENDIX B

STRESS AND HEALTH MEASURES
# Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often* you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don’t try to count up the number of times you felt a particular way, rather indicate the alternative that seems like a reasonable estimate. For each question, choose from the following alternatives:

<p>| | |</p>
<table>
<thead>
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<th></th>
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</thead>
<tbody>
<tr>
<td>0.</td>
<td>never</td>
</tr>
<tr>
<td>1.</td>
<td>almost never</td>
</tr>
<tr>
<td>2.</td>
<td>sometimes</td>
</tr>
<tr>
<td>3.</td>
<td>fairly often</td>
</tr>
<tr>
<td>4.</td>
<td>very often</td>
</tr>
</tbody>
</table>

1. In the last month, how often have you been upset because of something that happened unexpectedly?
2. In the last month, how often have you felt that you were unable to control the important things in your life?
3. In the last month, how often have you felt nervous and “stressed”?
4. In the last month, how often have you dealt successfully with irritating life hassles?
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
6. In the last month, how often have you felt confident about your ability to handle your personal problems?
7. In the last month, how often have you felt that things were going your way?
8. In the last month, how often have you found that you could not cope with all the things that you had to do?
9. In the last month, how often have you been able to control irritations in your life?
10. In the last month, how often have you felt that you were on top of things?
11. In the last month, how often have you been angered because of things that happened that were outside of your control?
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?
13. In the last month, how often have you been able to control the way you spend your time?
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
SCL-90

Please indicate to what degree you have experienced each of the following feelings or symptoms in the past week, including today. Use the following scale to respond to each statement.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td>Extremely</td>
</tr>
</tbody>
</table>

1. Headaches
2. Nervousness or shaking inside
3. Unwanted thoughts, words, or ideas that won’t leave your mind
4. Faintness or dizziness
5. Loss of sexual interest or pleasure
6. Feeling critical of others
7. The idea that someone else can control your thoughts
8. Feeling others are to blame for most of your troubles
9. Trouble remembering things
10. Worried about sloppiness or carelessness
11. Feeling easily annoyed or irritated
12. Pains in heart or chest
13. Feeling afraid in open spaces or on the street
14. Feeling low in energy or slowed down
15. Thoughts of ending your life
16. Hearing voices that other people do not hear
17. Trembling
18. Feeling that most people cannot be trusted
19. Poor appetite
20. Crying easily
21. Feeling shy or uneasy with the opposite sex
22. Feelings of being trapped or caught
23. Suddenly scared for no reason
24. Temper outbursts that you could not control
25. Feeling afraid to get out of your house alone
26. Blaming yourself for things
27. Pains in lower back
28. Feeling blocked in getting things done
29. Feeling lonely
30. Feeling blue
31. Worrying too much about things
32. Feeling no interest in things
33. Feeling fearful
34. Your feelings being easily hurt
35. Other people being aware of your private thoughts
36. Feeling others do not understand you or are unsympathetic
37. Feeling that people are unfriendly or dislike you
38. Having to do things very slowly to ensure correctness
39. Heart pounding or racing
40. Nausea or upset stomach
41. Feeling inferior to others
42. Soreness of muscles
43. Feeling you are watched or talked about by others
44. Trouble falling asleep
45. Having to check and double-check what you do
46. Difficulty in making decisions
47. Feeling afraid to travel on buses, subways or trains
48. Trouble getting your breath
49. Hot or cold spells
50. Having to avoid certain things, places or activities because they frighten you
51. Your mind going blank
52. Numbness or tingling in part of the body
53. Lump in your throat
54. Feeling hopeless about the future
55. Trouble concentrating
56. Feeling weak in parts of your body
57. Feeling tense or keyed up
58. Heavy feeling in your arms or legs
59. Thoughts of death or dying
60. Overeating
61. Feeling uneasy when people are watching or talking about you
62. Having thoughts that are not your own
63. Having urges to beat, injure, or harm someone
64. Awakening in the early morning
65. Having to repeat the same actions, such as touching, counting, washing
66. Sleep that is restless or disturbed
67. Having urges to break or smash things
68. Having ideas or beliefs that others do not share
69. Feeling very self-conscious with others
70. Feeling uneasy in crowds, such as shopping or at a movie
71. Feeling everything is an effort
72. Spells of terror or panic
73. Feeling uncomfortable about eating or drinking in public
74. Getting into frequent arguments
75. Feeling nervous when you are left alone
76. Others not giving you proper credit for your achievements
77. Feeling lonely when you are with people
78. Feeling so restless you couldn't sit still
79. Feelings of worthlessness
80. Feeling that familiar things are strange or unreal
81. Shouting or throwing things
82. Feeling afraid you will faint in public
83. Feeling that people will take advantage of you if you let them
84. Having thoughts about sex that bother you a lot
85. The idea that you should be punished for your sins
86. Feeling pushed to get things done
87. The idea that something serious is wrong with your body
88. Never feeling close to another person
89. Feelings of guilt
90. The idea that something is wrong with your mind
Cohen-Hoberman Inventory of Physical Symptoms

Mark the number of each statement that best describes HOW MUCH THAT PROBLEM HAS BOTHERED OR DISTRESSED YOU DURING THE PAST TWO WEEKS INCLUDING TODAY. Mark only one number for each item. At one extreme, 0 means that you have not been bothered by the problem. At the other extreme, 4 means that the problem has been an extreme bother.

**HOW MUCH WERE YOU BOTHERED BY:**

<table>
<thead>
<tr>
<th>Statement</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sleep problems (can’t fall asleep, wake up in the middle of the night or early in the morning)</td>
<td></td>
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</tr>
<tr>
<td>2. Weight change (gain or loss of 5 lbs. or more)</td>
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<td></td>
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<td></td>
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<tr>
<td>3. Back pain</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Constipation</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>5. Dizziness</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>6. Diarrhea</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>7. Faintness</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Constant fatigue</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Headache</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Migraine headache</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Nausea and/or vomiting</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Acid stomach or indigestion</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Stomach pain (e.g., cramps)</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Hot or cold spells</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Hands trembling</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. Heart pounding or racing</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Poor appetite</td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Shortness of breath when not exercising or working hard</td>
<td></td>
<td></td>
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<tr>
<td>19. Numbness or tingling in parts of your body</td>
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<tr>
<td>20. Felt weak all over</td>
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<tr>
<td>21. Pains in heart or chest</td>
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<tr>
<td>22. Feeling low in energy</td>
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<tr>
<td>23. Stuffy head or nose</td>
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<tr>
<td>24. Blurred vision</td>
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<tr>
<td>25. Muscle tension or soreness</td>
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<tr>
<td>26. Muscle cramps</td>
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<tr>
<td>27. Severe aches and pains</td>
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<tr>
<td>28. Acne</td>
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<tr>
<td>29. Bruises</td>
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<tr>
<td>30. Nosebleed</td>
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<tr>
<td>31. Pulled (strained) muscles</td>
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<tr>
<td>32. Pulled (strained) ligaments</td>
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<tr>
<td>33. Cold or cough</td>
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</tbody>
</table>
R-UCLA Loneliness Scale

Please indicate how well the items below describe you. Please use the following scale:

1- definitely does not describe me
2- does not describe me
3- somewhat does not describe me
4- neutral/not sure
5- somewhat describes me
6- describes me
7- definitely describes me

1. I feel in tune with the people around me. ______
2. I lack companionship. ______
3. There is no one I can turn to. ______
4. I feel alone. ______
5. I feel part of a group of friends. ______
6. I have a lot in common with the people around me. ______
7. I am no longer close to anyone. ______
8. My interests and ideas are not shared by those around me. ______
9. I am an outgoing person. ______
10. There are people I feel close to. ______
11. I feel left out. ______
12. My social relationships are superficial. ______
13. No one really knows me well. ______
14. I feel isolated from others. ______
15. I can find companionship when I want it. ______
16. There are people who really understand me. ______
17. I am unhappy being so withdrawn. ______
18. People are around me but not with me. ______
19. There are people I can talk to. ______
20. There are people I can turn to. ______