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**SOCIAL NORMS AND STUDENT ATTITUDES ABOUT CASUAL
SEX**

A Thesis Presented

by

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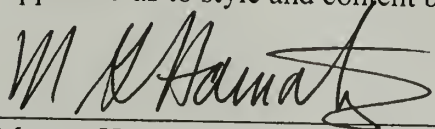
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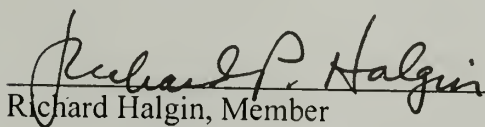
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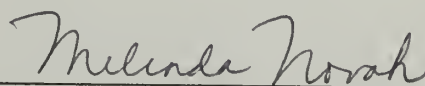
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CHAPTER I

INTRODUCTION

Faced with the danger of AIDS and sexually transmitted diseases (STDs), one of the most crucial tasks confronting educators today is the need to inform and empower individuals to make appropriate decisions about their sexual behavior. Importantly, this communication must be directed at adolescents and college students as these populations are increasingly at risk. One in every 500 blood samples from college health centers tests positive for the human immunodeficiency virus (HIV; Gayle *et al.*, 1990). Additionally, almost one in every five college students reports having had an STD in his/her lifetime (Caron *et al.*, 1993; McDonald *et al.*, 1990). During the past two decades, we have seen a dramatic rise in STDs among adolescents and young adults (Center for Disease Control [CDC], 1990a). As far as AIDS is concerned, it is heterosexual transmission that is currently increasing at the fastest rate (CDC, 1994; CDC, 1995).

Considering the amount of attention given to AIDS, we might expect that college students would be rather amenable to safe sex and condom use. Indeed, Cole and Slocumb (1995) found that most college students held positive attitudes about condom use. Kegeles, Adler, and Irwin (1988) reported that the majority of students believed that condoms prevented STDs and that this form of prevention was important. But the relationship between positive attitudes and safe sex behavior is not clearly understood. While Forrest and Fordyce (1988) reported that close to 60% of college women were favorable towards condoms, they found that little more than 16% were using them at the time. Herold and Mewhinney (1993) reported a discrepancy between positive attitudes about condoms and inconsistent use. Similarly, Caron *et al.* (1993) found that the

majority of their sample (and particularly females) were positive in their attitudes towards condoms. But surprisingly enough, only 25% of the sample thought their partner wanted to use a condom or would chose to provide a condom, numbers that seem to be extremely low from what we know about the normative data (Caron *et al.*, 1993).

Despite the generally positive attitudes about safe sex and condom use, college students seem to disregard public health recommendations and frequently engage in unsafe sexual practices (McDonald *et al.*, 1990; Sawyer & Beck, 1991). College students typically have more than one sexual partner, a factor that heightens their risk (Baldwin & Baldwin, 1988; Caron *et al.*, 1993; Cole & Slocumb, 1995; McDermott *et al.*, 1987). One study found that 19% of students had sex with a stranger or a casual acquaintance in the last three months (Baldwin & Baldwin, 1988). Additionally, college students tend to use condoms inconsistently at best (Caron *et al.*, 1993; Desiderato & Crawford, 1995; McDonald *et al.*, 1990). Desiderato and Crawford (1995) found that just under half of their sample did not use a condom the last time they had sex and that 45% had not used condoms consistently since the beginning of the school term. More than half of the students misinformed their partners about their sexual history and condom use, and over 40% of the students who reported having an STD did not use a condom during their last sexual intercourse (Desiderato & Crawford, 1995). Caron *et al.* (1993) similarly found that almost half of their sample did not use condoms during their last sexual encounter and that only 20% used condoms every time they had sex. Simkins (1994) found that more than half of his participants had never used condoms and only 17% used them consistently. Finally, Seal and Palmer-Seal (1996) found that 35% of their students did not use a condom the first time they had sex with their current partner.

The discrepancy between positive attitudes about safe sex and the frequency of high risk sexual behavior is striking. Clearly, understanding what factors may influence students' use of condoms is an important area of research. Quite simply, examining student attitudes in isolation provides limited information. This work will attempt to add another layer of understanding to the area of college student condom use and attitudes. This research proposes a model to explain the apparent incongruence between positive attitudes about condoms and the inconsistent safe sex practices on the part of college students. Because so many college students have multiple partners, casual sex and limited knowledge of their partners' sexual history will continue to be a realistic scenario. But unlike other risky health behaviors in which people are capable of acting independently of others, condom use requires the cooperation of two people (Seal & Palmer-Seal, 1996). Therefore, the study of the normative attributions college students make in these encounters is essential. Beginning with a brief review of the literature on condom use in sexual relationships, as well as norm misperception, or pluralistic ignorance, this research will present a model that captures miscommunication within casual sexual relationships. Focusing on the different attributions college students may make during a casual sexual encounter, this study will examine how the misperceptions of social norms can occur in casual sexual encounters, and perhaps perpetuate unsafe sexual practices.

A. Condom Use and AIDS Risk

Research on AIDS risk in close romantic relationships has sought to identify factors that serve to perpetuate unsafe sexual practices. Ironically, despite the potential

benefits, being in a close relationship tends to exacerbate AIDS risk (Misovich, Fisher, & Fisher, 1997). Quite simply, when individuals enter into close relationships, they are less inclined to engage in safe sex (Misovich *et al.*, 1997). Not surprisingly, people in close relationships tend to use condoms less frequently than people in casual sexual relationships (Hammer, Fisher, Fitzgerald, & Fisher, 1996; see Misovich *et al.*, 1997 for a review). But while college students may believe that close relationships defend them from AIDS, most practice serial monogamy, a factor that places them at risk and highlights the need to study casual or first time sexual encounters (Hammer *et al.*, 1996; Misovich *et al.*, 1997).

Seal and Palmer-Seal (1996) asked undergraduate couples to rate the reasons they failed to use condoms in both the first sexual experience with their current partner and subsequent sexual encounters with that partner. But while the most often cited reason for failing to use condoms was a lack of perceived AIDS risk, these beliefs were based loosely on interpersonal variables such as trust, expectations of monogamy, and the belief that both partners were disease free. These implicit personality theories rely on the notion that it is possible to judge a partner's AIDS risk using the same characteristics in which that partner is presumably chosen in the first place (Hammer *et al.*, 1996; Misovich *et al.*, 1997; Seal & Palmer-Seal, 1996). Unfortunately, relationship development is often incompatible with appropriate efforts to promote AIDS prevention because safe sex is generally associated with uncommitted or casual relationships (Misovich, *et al.*, 1997). Quite simply, the topic of safe sex threatens to cause disruption and may prevent couples from discussing or choosing safe sex practices. Because, introducing condom use into an

intimate relationship is particularly difficult, promoting safe sexual behavior must come before unsafe patterns develop (Misovich *et al.*, 1997).

Couples may fail to use condoms for reasons such as negative attitudes about condoms, lack of planning, and lack of perceived self-efficacy (Seal & Palmer-Seal, 1996). Important in close relationships, these same reasons may play a role in casual sexual encounters. Therefore, engaging and empowering students to communicate about condoms from the beginning is an important goal. The fear of relationship disruption that is present in committed relationships (Misovich *et al.*, 1997; Seal & Palmer-Seal, 1996) might also be a motivating factor for communication in casual sexual encounters.

B. The Nature of Casual Sexual Encounters

In the study of safe sex behavior, the discrepancy between attitudes and behaviors is prominent. AIDS education programs appear to raise awareness, but have not had a large effect on sexual behavior (Finkelstein & Brannick, 1997; McCormack, Anderton, & Barbieri, 1993). To a certain extent, the apparent inconsistency between attitudes and behaviors makes sense. Young adults often experience peer pressure to engage in sex (McDonald *et al.*, 1990; Sikkema, Winett, & Lombard, 1995), may not be ready to have sex, and hence, are relatively unprepared to communicate their needs effectively (Loos & Bowd, 1989). Unfortunately, because we know that many students withhold important information from their partners in sexual encounters (i.e. sexual history and STDs), it is obvious that many students may not be operating with completely accurate information (Cochran & Mays, 1990; Desiderato & Crawford, 1995). College students rarely discuss safe sex or share sexual histories before they have sex (Loos & Bowd, 1989). When they

do, their discussions are generally surface-level and ineffective (Cline, Johnson, & Freeman, 1992). While actively misleading one's partner certainly occurs, it is also quite likely that many people inadvertently mislead their partners as well.

Perhaps it is misinformation that accounts for the striking difference between attitudes and behaviors. The demand characteristics of casual sexual encounters are such that individuals may inadvertently mislead each other. Thus, ineffective or limited communication may account for the perpetuation of unsafe behaviors. Some interesting research lends support to this notion. For example, we know that the AIDS risk is increasing, (particularly among heterosexual college-age students), but students estimate their risk of infection as lower than the risk for hypothetical, similar others (Mickler, 1993). Interestingly, some research has suggested that students are motivated to change more by others' attitudes than their own. Kelly *et al.* (1987) found that women were less likely to use condoms if they believed that their parents, sister, boyfriend, or another important person would disapprove. Caron *et al.* (1993) showed that believing their partners wanted to use condoms was more predictive of condom use than the participants' own attitudes. Sanderson and Maibach (1996) found that partner reaction expectancies were more predictive of condom use than self-approval expectancies. In their sample, individuals were more concerned with their partners' attitudes than their own. Each of these examples are particularly disturbing considering the fact that most college students believe their partners would not want them to use condoms (Fisher, Fisher, & Rye, 1995).

Decisions about sexuality are not simple, and frequently, they are not rational. The fact that many students engage in casual sex leaves them particularly at risk for STDs and AIDS. The casual sexual encounter is by nature an anxiety-provoking one. The topic

of sexuality leaves many people paralyzed and unable to communicate effectively (Cline *et al.*, 1992), implying that 1) people may be less comfortable communicating with each other, 2) people will tend to know less about each others' sexual histories, and 3) people might be led to behave in ways they might not have in a more deliberate, thought-out situation. These are dangerous combinations, leaving many individuals vulnerable to the dangers associated with unsafe sexual practices.

The literature that has measured the public's response to the AIDS crises has been confusing at best. To many researchers, educators, and health care professionals, the situation is clear cut. Unsafe sexual practices can increase the chance that an individual will contract the HIV virus and AIDS as a result. Despite this, as a sexually active person's most effective defensive strategy against AIDS, the condom is not consistently used (Caron *et al.*, 1993; Desiderato & Crawford, 1995; McDonald *et al.*, 1990). But Seal and Palmer-Seal (1996) remind us that safe sex does not occur in a rational, deliberate situation. Casual sex occurs within a "highly aroused dyadic interaction" (p. 30). Assuming that individual attitudes about condom use can be understood in the absence of social information is likely to be misleading. It is exactly this aroused dyadic interaction that makes studying condom use in the social context so important.

C. The Process of Norm Misperception and Pluralistic Ignorance

Pluralistic ignorance refers to the process of misperceiving the beliefs of others and, in particular, incorrectly assuming that they are different than your own. O'Gorman (1986) has defined it as "erroneous cognitive beliefs shared by two or more individuals about the ideas, feelings, and actions of others" (p. 333). Specifically, he states that it

refers to "knowledge of others that is mistakenly considered to be correct" or "shared cognitive patterns, that is, socially accepted but false propositions about the social world" (p. 333). Miller and McFarland (1991) have also described it as "a state characterized by the belief that one's private thoughts, feelings, and behaviors are different from those of others, even though one's public behavior is identical" (p. 287). To provide a context for these statements, it is useful understand how norms develop and can be misperceived. As Festinger posited, "people evaluate their opinions and abilities by comparison respectively with the opinions and abilities of others" (Festinger, 1954, p. 118). As members of groups, all individuals play active roles in creating, perpetuating, and interpreting the social norms for behavior within the group. As individuals attempt to judge those who surround them, they too are being judged. The evaluation process leads to the development of social norms.

1. The Bystander Effect

Latané and Darley (1968) provided a classic example of one way that groups can inappropriately influence the behavior of individuals. Interested in studying why people become apathetic in emergency situations,¹ they examined how experimental participants would respond to smoke as it entered the laboratory while they were filling out surveys. In what has now become a classic demonstration of the diffusion of responsibility in groups, Latané and Darley (1968) found that experimental participants reacted more slowly to the smoke when others were present. Alone, they reacted responsibly and

¹ The study was developed in response to the Kitty Genovese incident in which many people failed to respond to her cries for help during an attack.

quickly, but their response latency was significantly longer in groups. Though anxiety-provoking and potentially quite dangerous, this situation was also relatively ambiguous. In the process of searching the group for information, people attempted to appear composed, thus conveying a sense of unconcern. While they perceived the inaction on the part of the others as a sign of indifference, participants failed to recognize that their own behavior was identical. Individuals incorrectly assumed that there was no emergency because they misinterpreted the outwardly calm behavior of others.

Norm misperception, or pluralistic ignorance, refers to the distorted interpretation of social norms that occurs when environmental factors influence individuals to behave in ways that do not necessarily match their private beliefs. In the previous example, the lack of bystander intervention represents an instance of a socially accepted, but false conception of the world. In this situation, all individuals behaved similarly, failing to respond to a potential emergency. Pluralistic ignorance arises when individuals apply divergent explanations for similar behaviors, recognizing the extent to which their actions are motivated by situational factors, yet ignoring this context in their attributions for other people. They simply do not recognize that other group members experience the same anxiety and uncertainty that they do. This example represents a powerful situation, particularly because it demonstrates the ability of groups to influence individuals to engage in obviously unsafe behaviors.

2. Other Instances of Pluralistic Ignorance

In a more precise example, Miller and McFarland (1991) present a classic instance of pluralistic ignorance when students fail to question a confusing lecturer because they

falsely believe they are the only ones who do not understand. In an effort to appear knowledgeable while scanning the room for the reactions of others, students unknowingly produce a silence that other students and the teacher interpret as understanding. The classroom context confronts the actor with a situation that is vague and anxiety-provoking. The very effort to gauge the social reality of the situation leads individual group members to send erroneous information. Individuals are indeed confused, but their public behavior does not match their private feelings.

Miller and McFarland (1991) also suggest that people who take a public position on a particular issue often misrepresent their private opinions. Pluralistic ignorance arises because individuals believe that the public expressions of others accurately reflect their private attitudes. Although individuals may hold private beliefs that differ from group norms and their own public behavior, they may not realize that this can be true for others as well. Thus, individuals may wrongly perceive themselves as deviant. This tendency has been demonstrated by Wheeler (1961) who found that prison guards and inmates underestimated the similarity of their attitudes to those which were held by their peers, each assuming that they, individually, were more sympathetic to the out-group than the average in-group member. Additionally, Fields and Schuman (1976) demonstrated that community members misperceived the racial attitudes held by those who lived near them, with everyone assuming that they were much more liberal than their neighbors. As in many cases of pluralistic ignorance, individuals failed to realize that their private attitudes were actually quite similar to those held by others.

The process of social comparison is very useful in group interactions. It can help us to evaluate our opinions and abilities as well as provide information about the nature

of our environment. But pluralistic ignorance often distorts this function. First, it can lead to the false belief that others hold group values more strongly than oneself (Miller & McFarland, 1991). Second, although individuals can correctly identify the norm which a group professes to hold, they may fail to realize that others are only pretending to adhere to this norm (Miller & McFarland, 1991). Bystanders are only pretending to be unconcerned, students only pretend to understand their teachers, and individuals may not hold privately the values they express publicly.

3. Pluralistic Ignorance in the College Environment

In an interesting demonstration, Prentice and Miller (1993) examined the ways that group forces can be translated into the perpetuation of unpopular norms and behaviors. Their study examined the extent to which college students would believe that they held different attitudes about the consumption of alcohol than their peers. In addition, they hypothesized that individuals might act to reduce the perceived discrepancy between their private attitudes and the social norms. To reduce this disparity, they could move their private attitudes closer to the norm, bring the norm closer to their own attitudes, or reject the group completely.

Prentice and Miller (1993) measured the personal comfort levels for alcohol consumption as well as the perceived comfort level for "average" students and the perceived comfort level for a participant's "friends." They confirmed that the students' comfort level for alcohol consumption matched a pattern of pluralistic ignorance. The students believed that others were more comfortable with alcohol than they were. Although students may have made efforts to conceal their discomfort with the norms for

alcohol consumption, they assumed that similar behavior in others was indicative of a higher level of comfort with the same norms.

Prentice and Miller (1993) then explored some of the consequences of this pluralistic ignorance. They expected students to adopt the normative position over time, leading to greater consistency between private attitudes, perceived group norms, and actual behavior. Their study found that men, presumably to reduce the anxiety produced by the perceived inconsistency between their beliefs and group norms, had moved their attitudes and behaviors in the direction of the group norms. Although women did not exhibit this trend, they expressed a sense of alienation that could represent their response to the perceived dissimilarity between their public behavior and private attitudes. Groups may well possess the ability to influence individuals and promote norm-congruent behavior change.

4. Pluralistic Ignorance in Relationship Formation Between Individuals

So far, the discussion of pluralistic ignorance has centered around the ways that norms can be distorted in groups. But to use this paradigm to examine attitudes and behavior in casual sexual encounters, we must determine the mechanisms by which two individuals can be misled by pluralistic ignorance. The way that pluralistic ignorance might distort interactions between individuals has been given relatively little attention. Vorauer and Ratner (1996) focused on the influence of pluralistic ignorance during relationship formation. In their research, individuals "reach conclusions about others' feelings towards them and interest in entering into relationships with them, rather than about group norms or qualities of a situation" (p. 485). The consequences are relational

and inferences guide their behavior towards each other and affect whether a relationship is established.

Vorauer and Ratner (1996) examined the process of mutual hesitation, a situation in which two individuals (potential romantic partners) fail to make their interest overt to the other person. Pluralistic ignorance arises as these individuals apply divergent explanations for their inaction. In the process of relationship formation, fears of rejection often motivate individuals to hesitate. But while individuals tend to characterize their own inaction as the result of a fear of rejection, they believe that their potential partners hesitate because of a lack of romantic interest. Especially salient in this example is the fact that the outward behavior of inaction was mutual and that this norm misperception occurs despite the consequences it could have on relationship formation. Vorauer and Ratner (1996) found that most people who had been inhibited from initiating a romantic relationship by a fear of rejection, began with "inaccurate theories about their own versus the other person's vulnerability to fears of rejection," and applied divergent explanations for their own versus their potential partners' mutual inaction (p. 500).

Condom use requires the cooperation of two people. As a result, the determination of each other's attitudes in a sexual encounter becomes extremely important. But because attitudes about sex are highly personal, tendencies in the social interaction sequence may lead to the disruption of communication, leaving individuals with misperceptions about their partners' attitudes. For two people in a casual sexual encounter, anxiety about communication may lead each partner to hesitate, which in turn sends messages that may not accurately reflect each other's attitudes. Mutual hesitation in a sexual encounter may signal that each person is satisfied with the status quo, or sex

without condoms. In other words, each person misperceives the other person's attitudes even though their behavior is identical. This pluralistic ignorance can occur when individuals apply divergent explanations for identical behavior (Miller & McFarland, 1991). In this case, individuals may recognize that they are remaining silent because they are afraid to bring up the topic of condom use. At the same time, pluralistic ignorance occurs when people assume their partners have remained silent because they do not like to use condoms, believe that condom use implies a lack of trust, or believe the chances of getting AIDS are small.

D. The Current Study

The same factors that contribute to difficulties in the initiation of romantic relationships can also characterize the lack of communication and failure to use condoms in casual sexual encounters. Consider how these hypothetical events could contribute to a couple's failure to use condoms, despite attitudes that value the importance of safe sex. Because the sexual attitudes held by their partners are not usually known in casual encounters, individuals might choose the "safe" strategy of waiting for their partners to bring up the issue of condom use. We might expect individuals to apply divergent explanations for their own versus their partners' lack of communication (inaction). So in the same way that individuals fail to initiate a romantic relationship because of a "fear of rejection," they might avoid the topic of condom use for fear that their partners might hold negative attitudes about condoms, even though their own attitudes are positive. Because of the desire to conform to the perceived norm in this dyadic and anxiety-provoking situation, individuals may behave towards their partners in ways that contradict

their own private attitudes, thus reinforcing the "perceived" norm. While each individual may have been motivated to silence by anxiety surrounding the potentially disruptive discussion of condom use, he/she may assume that his/her partner's inaction was motivated by negative attitudes about condom use, an expectation of trust, or a belief that it is not necessary to use condoms. Both individuals believe that their partner holds different attitudes than their own. Divergent attributions then reinforce the silence, leading two people to practice unsafe sex. Given the potential for misperception, understanding the ways that this type of miscommunication can influence sexual attitudes and behaviors is an important area of research.

The study of casual sexual relationships is an important addition to the study of human sexual behavior. Casual sex can be a difficult and anxiety-provoking interaction and serves as an excellent example of a situation in which individuals may be prone to misreading each other. College students may be inhibited from making their attitudes about safe sex known because they hold inaccurate assumptions about their partners' attitudes.

The present study will examine individual attitudes about condom use in the casual sexual encounter. Of particular interest is the possibility that participants will believe that their attitudes are different from typical other students. This study examines participants' history of being inhibited from using condoms, as well as their attitudes about a hypothetical casual sexual scenario. In both of these areas, participants' attitudes will also be compared to their estimations of the attitudes of typical UMass students. Finally, this study will examine the relationship between pluralistic ignorance and condom use. Of interest will be whether or not pluralistic ignorance will be predictive of

condom use above and beyond the influence of age, gender, self-esteem, fear of negative evaluation, and social desirability.

Self-esteem has been long recognized as the "prerequisite for the adoption of healthy behaviors" (Cole & Slocumb, 1995). Self-esteem has been positively related to the intent to perform AIDS-prevention behaviors, the preference of condoms over less effective methods, as well as general health behaviors (Petersen-Martin & Cottrell, 1987; Tashakkori & Thompson, 1992; Winter, 1988). It seems reasonable to expect that individuals with high self-esteem might be more likely to communicate effectively in casual sexual encounters, thus influencing condom use.

The concept of Fear of Negative Evaluation is frequently used and has been shown to be correlated with anxiety, depression, and general distress (Turner, McCanna, & Beidel, 1987). The tendency to seek social approval is an important factor in the process of social comparison and might also be related to condom use.

It seems possible that a response bias in favor of more socially accepted behaviors could be found in this type of research. In this case, students who are especially prone to social desirability might not report their attitudes accurately. This study will attempt to distinguish student attitudes from the influence of social desirability. In general, the role of pluralistic ignorance will be examined in relation to these potentially influential variables. Their inclusion in the analyses can help to strengthen the findings.

E. Hypotheses

Participants will demonstrate inconsistency in their past history of condom use. Because sexual activity is more dangerous in the era of AIDS, an argument can be made

to characterize as inconsistent every participant who does not use a condom every time he/she has sex. It is obvious that defining "inconsistent" condom use will require subjective judgement. The study will examine condom use by looking at the percentage of both participants who use a condom every time they have sex, as well as the percentage of participants who use a condom less than half of the time.

Participants will express generally positive attitudes about safe sex and condom use. For example, participants will generally report themselves to be uninhibited in their past history of condom use. They will also express the belief that it would be important to use condoms if they found themselves in the casual sex scenario. Finally, participants will generally rate themselves as not fearful of bringing up the topic of condom use in the casual sexual scenario.

Across all questions, participants will rate their attitudes as different from typical UMass students, thus demonstrating pluralistic ignorance. It is expected that this pluralistic ignorance will reflect positively on the participants, characterizing typical UMass students more likely to engage in casual sex, less likely to use condoms in the scenario, more fearful of bringing up the issue of condom use, and more likely to be inhibited from using condoms in the past.

Men have been shown to be more permissive with regards to casual sex (Clark & Hatfield, 1989; Herold & Mewhinney, 1993) while women have tended to report a greater concern about STDs and AIDS (Herold & Mewhinney, 1993). A similar response is expected in this study with men demonstrating more permissiveness to the casual sexual scenario. Additionally, though women tend to have more positive attitudes about condoms in casual sex than men, their actual reported condom use does not differ (Herold

& Mewhinney, 1993). In the present study, it is expected that women will experience pluralistic ignorance to a greater extent than men.

Pluralistic ignorance is expected to be negatively associated with condom use during the last three months. In other words, as pluralistic ignorance increases, condom use will decrease. In particular, pluralistic ignorance with regards to participants' history of being inhibited from using condoms is expected to be particularly important.

CHAPTER II

METHODS

A. Participants

The participants were 172 undergraduates drawn from the subject pool at the University of Massachusetts. The subject pool consists of students who receive extra credit in psychology courses for experimental participation. This sample consisted of 141 women (82%) and 31 men (18%), and reflected the fact that the majority of students in psychology classes are women. The average age of students in the sample was 19.9 and there were 37 (21.5%) first-year students, 60 (34.9%) sophomores, 41 (23.8%) juniors, 28 (16.3%) seniors, and 6 (3.5%) 5th year or higher students. Of the 172 participants, 37 (21.5%) students reported that they had never engaged in vaginal/anal intercourse. 16 (9.3%) students reported that they had been diagnosed with or treated for a sexually transmitted disease in their lifetime.

B. Procedure

Participants were asked to attend one of several testing sessions to complete a survey titled, "Social Norms and Student Attitudes About Casual Sex." Upon completion of the survey, participants were given a debriefing form which explained the purpose of the survey (see Appendix for a copy of the entire survey).

C. Measures

A packet of measures with instructions to complete it in the order assembled was distributed to the participants. The packet contained demographic and sexual history items similar to those used by Caron *et al.* (1993).

1. Demographic and Sexual History Items

Eight questions were used to determine the demographics of the sample. The questions included were age, gender, year in school, major, religion, religiosity, sexual orientation, and race/ethnic group. In addition to these items, 23 questions pertaining to their sexual history were included in the packet. The questions addressed sexual experience, history of condom use and STDs, sexual behavior and condom use in the last three months, the last three years, sexual behavior and condom use with the most recent partner, whether or not they are currently in a dating relationship, and sexual behavior and condom use within that relationship. Participants were also asked what forms of protection against STDs they have used in the last three months as well as the estimated likelihood that they will contract HIV.

2. Condom Use Inhibition Scale

This scale consisted of 9 items and was designed to elicit student reasons for failure to use condoms in past sexual encounters. Students were asked to rate, on a seven point Likert scale (7=agree strongly; 1=disagree strongly), the extent to which specific reasons may have inhibited them from using condoms in the past. For example, each item dealt with a reason why students may have been inhibited from using condoms in the

past. The potential reasons were related to interpersonal awkwardness, opinions about the utility and/or desirability of condoms, and the ease of condom acquisition. Of particular interest was whether or not participants would report differences between themselves and typical UMass students. Thus, participants were also asked to answer each question in the way they expected typical UMass students to respond.

A principal components factor analysis with a varimax rotation was used to identify common factors for the first scale (history of condom inhibition). The factor analysis identified three factors that accounted for a total of 64.74% of the variance (see Table 1). The first factor, Awkward (Eigenvalue=4.09), demonstrates moderate reliability ($\alpha=.73$) and is heavily weighted on reasons that are related to interpersonal awkwardness. The second factor, Condom Opinion (Eigenvalue=1.31), demonstrates moderate reliability ($\alpha=.72$) and is heavily weighted on reasons that invoke participants' opinions about the utility and desirability condoms. The third factor, Acquire (Eigenvalue=1.08), demonstrates fair reliability ($\alpha=.57$) and is heavily weighted on reasons that deal with difficulties in condom acquisition.

3. The Casual Sexual Scenario

This scale consisted of 7 items and required participants to read a scenario that presented a casual sexual encounter rated as realistic by independent judges, college students not aware of the nature of the study and similar to the scenario used by Vorauer and Ratner (1996). The scenario was designed to elicit student norms and attitudes about casual sexual relationships.

Imagine the following situation: You are at a party; currently you are not seriously romantically involved with anyone. Early in the evening, you are introduced to a single person whom you find attractive. You learn from a brief conversation that you have a lot in common. In your opinion, this is someone you would be interested in having a sexual relationship with. Toward the end of the evening, you find yourself alone with this person. You talk with the person for awhile. Later, you return to the party together. As things begin to wind down, you and this person decide to walk home together. When you arrive at this person's room, you are invited inside. You both sit down on the bed and continue to talk. Soon, the two of you begin to kiss. As things progress, you feel very sexually attracted to this person. So far, this person has not brought up the issue of condom use.

Participants rated their attitudes about the casual sexual scenario on a seven point Likert scale (7=agree strongly; 1=disagree strongly). The scale consisted of questions designed to measure attitudes about the casual sexual scenario. The questions addressed participants' likelihood of having sex in the scenario, their beliefs about the importance of using condoms in the scenario, and the ease with which they would be able to bring up the issue of condom use. To measure attitudinal deviance, participants were asked to rate their own attitudes as well as their perceptions of the attitudes of typical UMass students.

A principal components factor analysis with a varimax rotation was used to identify common factors in the casual sexual scenario. The factor analysis identified two factors that accounted for a total of 62.50% of the variance (see Table 1). The first factor, Importance (Eigenvalue=3.04), demonstrates moderate reliability ($\alpha=.79$) and is heavily weighted on questions that capture student attitudes about the importance of using condoms in the casual sexual scenario. The second factor, Initiate (Eigenvalue=1.33), demonstrates low reliability ($\alpha=.41$) and is heavily weighted on questions that refer to the ease with which students could bring up the issue of condom use.

Table 1: Factors for Participants' History of Condom Inhibition and the Casual Sexual Scenario

Scale 1, Factor 1: Awkward	Loading	Scale 2, Factor 1: Importance	Loading
Item 8: Talking about condoms would be awkward.	.756	Item 2: It would be important for me to use a condom.	.867
Item 9: Using a condom would interrupt the mood.	.720	Item 3: I believe that sex without a condom would be risky.	.685
Item 11: My partner would prefer not to use a condom.	.572	Item 6: I would actually use a condom.	.852
Item 13: I worried that my partner would feel that I did not trust him/her.	.742		
Scale 1, Factor 2: Condom Opinion	Loading	Scale 2, Factor 2: Initiate	Loading
Item 10: Using a condom would not feel good.	.674	Item 4: I would feel comfortable bringing up the topic of condom use.	.755
Item 12: I got caught up in the heat of the moment.	.547	Item 5: Fear would prevent me from bringing up the topic of condom use.	-.837
Item 14: I believed that my partner did not have a sexually transmitted disease.	.745		
Item 15: I believed that my partner was already using birth control.	.726		
Scale 1, Factor 3: Acquire	Loading		
Item 16: I felt that buying condoms would be embarrassing.	.815		
Item 17: There were no condoms available.	.775		

4. Rosenberg Self-Esteem Scale (SES)

This measure of self-esteem was developed by Rosenberg (1965) and has been extensively used (Fleming & Courtney, 1984; Lorr & Wunderlich, 1986). High scores on this scale indicate that individuals respect themselves, consider themselves to be worthy, recognize their imperfections, and expect continued growth (Rosenberg, 1965). Low scores on this scale imply "self-rejection, self-dissatisfaction, self-contempt" (Rosenberg, 1965, p. 31). The scale consists of 10 Likert items ("I feel that I have a number of good qualities" and "I am able to do most things as well as other people") with options ranging from 1, "Strongly Agree" to 4, "Strongly Disagree." Scores range from 10 to 40, with higher scores indicating higher self-worth and sense of self-esteem. In this study, the SES demonstrated sufficient reliability, $\alpha=.89$.

5. Fear of Negative Evaluation

The Fear of Negative Evaluation (FNE) was developed by Watson and Friend (1969) to measure the extent to which an individual had "apprehension about others' evaluations, distress over their negative evaluations, avoidance of evaluative situations, and the expectation that others would evaluate oneself negatively" (Watson & Friend, 1969, p. 449). This scale has demonstrated sufficient product-moment, test/retest reliability, $r=.78$ (Watson & Friend, 1969). Participants who score high on the FNE tend to become "nervous in evaluative situations, and seemed to seek social approval" (Watson & Friend, 1969, p. 456). The FNE scale consists of 11 Likert items ("I am frequently afraid of people noticing my shortcomings" and "I am unconcerned even if I know people are forming an unfavorable opinion of me") with options ranging from 1, "Not at all characteristic of me" to 4, "Extremely characteristic of me." Scores range from 11 to 55, with higher scores indicating more fears about negative evaluation and avoidance of evaluative situations. In this study, the FNE demonstrated sufficient reliability, $\alpha=.91$.

6. Marlowe-Crowne Social Desirability Scale

The Marlow-Crowne Social Desirability Scale (MCSD) measures the extent to which an individual avoids disapproval in ordinary personal and interpersonal behaviors (Crowne & Marlowe, 1960). Individuals who score highly on the MCSD respond more to social reinforcement, influence, and their task performance is affected by the evaluations of others (Crowne & Marlow, 1964). The MCSD scale demonstrates sufficient test/retest reliability, $r=.88$ (Crowne & Marlowe, 1964). The MCSD scale

consists of 33 true/false items that describe desirable but uncommon behaviors (e.g. thoroughly investigating the qualification of candidates in an election) or undesirable but common behaviors (e.g. saying things that hurt others' feelings). Scores range from 0 to 33, with higher scores indicating more need for approval. In this study, the MCSD demonstrated sufficient reliability, $\alpha = .76$.

CHAPTER III

RESULTS

The data was analyzed in three steps. First, participants' condom use behavior was summarized. The preliminary analysis also described participants' attitudes to both the condom use inhibition scale, and the casual sexual scenario. The second step involved identifying the presence of pluralistic ignorance. In this step, paired sample T-tests were used to determine whether the differences between participants' responses and their estimations of the responses of typical UMass students were significant. Finally, multiple regression analyses were used to examine the relationship between pluralistic ignorance and condom use when other relevant variables were held constant.

A. Preliminary Analyses

1. Reported History of Condom Use

Of the sample, only 18.6% reported that they used condoms every time they had sex over their lifetime. Approximately one third of the sample reported that they used condoms less than 50% of the time. Over the past 3 months, 15.1% of the participants reported that they used condoms every time they had sex. In the last 3 months, 54.5% of the sample reported that they had used condoms less than half of the time. Twenty-five percent (43 individuals who reported having sex an average of 19.7 times) stated that they never used a condom in the last 3 months. Participants' reported history of condom use

was also examined across gender.² Sixteen percent of men and 19.1% of women reported that they had used condoms every time they had sex over their lifetime. Forty-two percent of men and 29.6% of women used condoms less than half of the time over their lifetime. Over the last 3 months, 16.1% of men and 14.9% of women used condoms every time they had sex. Over the last 3 months, 57.9% of men and 53.8% of women used condoms less than half of the time.

Interestingly, of those students who reported that they had been treated for or diagnosed with an STD, 6.3% reported that they used a condom every time they had sex (compared to 23.0% of people who did not have an STD history). Forty percent of students with an STD history reported that they used condoms less than half of the time (compared to 31.1% of students without an STD history). Over the last 3 months, 18.8% of students with an STD history reported that they had used condoms every time they had sex (compared to 17.0% for participants without an STD history). Over the last 3 months, 71.4% of students with an STD history (compared to 52.1% of students without an STD history) used condoms less than half of the time. Again, these differences were not statistically significant.

2. Condom Use Inhibition Scale

The condom use inhibition scale asked students to rate the extent to which particular reasons had inhibited them from using condoms in the past. The middle of the scale (a rating of 4) was taken as the neutral response and answers were compared

² Because the standard deviations were so large, the differences across gender were not significant. The relevant percentages are reported because the differences are qualitatively meaningful, if not statistically significant.

relative to this midpoint using one sample T-tests. Generally, participants tended to disagree with most of the statements regarding reasons that they may have been inhibited from using condoms in the past (see Table 2). Participants were unlikely to have been inhibited from using condoms because talking about them would be awkward, because condoms would interrupt the mood, because using a condom would not feel good, or because they felt that their partner would prefer not to use a condom. Students were unlikely to have been inhibited from using condoms because they worried that their partner would feel that they did not trust him/her, because they felt that buying condoms would be embarrassing, or because there were no condoms available. Students were stronger in their ratings, but generally ambivalent about whether or not they had been inhibited from using condoms because they were caught up in the heat of the moment, believed that their partner did not have a sexually transmitted disease, or believed that their partner was already using birth control.

A series of ANOVAs failed to uncover significant effects for gender or age on the condom use inhibition scale. The only exception was that men reported being inhibited from using condoms more frequently than women because they believed that their partners were on another form of birth control ($M=3.41$, $M=1.91$, $F(1,103)=14.11$, $p<.01$). Considering the limited methods of birth control available to men, as well as the relative obscurity with which women can use birth control, this finding is not surprising.

Table 2: Participants' Past History of Being Inhibited From Using Condoms

Item (1=Disagree Strongly; 7=Agree Strongly)	Average Response	T Value
Scale 1: History of Condom Inhibition		
Talking about condoms would be awkward.	2.43	-11.13**
Using a condom would interrupt the mood.	2.67	-9.27**
Using a condom would not feel good.	2.63	-9.43**
My partner would prefer not to use a condom.	2.84	-7.51**
I got caught up in the heat of the moment.	3.45	-3.22**
I worried that my partner would feel that I did not trust him/her.	1.94	-17.93**
I believed that my partner did not have an STD.	3.34	-3.69**
I believed that my partner was already using birth control.	2.33	-8.76**
I felt that buying condoms would be embarrassing.	2.34	-11.81**
There were no condoms available.	2.94	-5.82**

Note: ** denotes significant difference from neutral response at the $p < .01$ level.

3. Reactions to the Casual Sexual Scenario

In this section of the study, students were asked to rate their attitudes about the casual sexual scenario. The middle of the scale was taken as the neutral response and answers were compared relative to this midpoint using one sample T-tests (see Table 3). In general, participants were ambivalent or slightly negative about whether or not they would want to have sex in the casual sex scenario. Participants were generally strong in their beliefs that it would be important to use condoms in the scenario, that a failure to use condoms would be risky, and that they would be likely to use condoms in the casual sex scenario. Participants generally reported that they would feel comfortable bringing up the issue of condom use, that fear would not prevent them from bringing up the topic of condom use, and that they would not use a condom only if their partner brought it up first. In general, participants' responses demonstrate conservative and safe sex attitudes in the casual sexual scenario.

For the casual sexual scenario, a series of ANOVAs uncovered several gender differences (see Table 3). Men rated themselves as significantly more willing to have sex in the scenario than women. Women were significantly stronger than men in their beliefs

that condoms would be important in the scenario, that a failure to use condoms would be risky, and that they would be likely to use condoms in the scenario. Finally, men were more likely than women to use condoms only if their partner brought it up first.

Table 3: Student Attitudes About the Casual Sexual Scenario

Item (1=Disagree Strongly; 7=Agree Strongly)	Average Response	T Value	Men	Women	F Value
Scale 2: The Casual Sexual Scenario					
I would want to have sex.	3.60	-2.61**	5.29	3.23	31.33**
It would be important for me to use a condom.	6.72	40.33**	6.06	6.86	23.78**
I believe that sex without a condom would be risky.	6.89	83.88**	6.68	6.94	8.71**
I would feel comfortable bringing up the issue of condom use.	6.60	32.84**	5.81	6.04	1.025
Fear would prevent me from bringing up the topic of condom use.	5.99	22.71**	1.81	1.88	.067
I would actually use a condom.	1.86	-20.32**	6.03	6.73	12.75**
I would use a condom only if my partner brought it up first.	1.37	-34.62**	1.84	1.27	8.86**

Note: ** denotes significance at the $p < .01$ level.

B. Pluralistic Ignorance

In addition to responding in accordance with their own attitudes, all participants were asked to respond to each question in the way they expected typical UMass students to respond. The self/other differences³ on each item were compared using paired-sample T-tests (see Table 4). On each item, participants believed that their attitudes, behaviors, and experiences differed significantly from those of typical UMass students. First, participants generally reported that they were significantly less inhibited than typical UMass students from using condoms for the reasons listed. Second, participants believed themselves to be significantly less likely to have sex in the casual sex scenario than typical UMass students. Third, in the casual sexual scenario, participants believed that they held significantly stronger attitudes than typical UMass students about the importance of condoms and the risk associated with the failure to use condoms. Finally,

³ i.e. the quantitative difference between the participants' responses and their estimations of the responses of typical UMass students.

in the casual sexual scenario, participants felt they would be significantly less fearful of bringing up the issue of condom use than typical UMass students (see Table 4).

Table 4: Comparison of Responses Between Participants and Their Expectations of Others in The Casual Sexual Scenario

Item (1=Disagree Strongly; 7=Agree Strongly)	Self Response	Typical UMass	T (Sig)
Scale 1: History of Condom Inhibition			
Talking about condoms would be awkward.	2.43	4.84	-16.15**
Using a condom would interrupt the mood.	2.67	5.36	-18.55**
Using a condom would not feel good.	2.64	5.00	-16.54**
My partner would prefer not to use a condom.	2.84	4.80	-11.22**
I got caught up in the heat of the moment.	3.46	5.76	-13.74**
I worried that my partner would feel that I did not trust him/her.	1.94	4.04	-15.62**
I believed that my partner did not have an STD disease.	3.34	4.93	-8.66**
I believed that my partner was already using birth control.	2.33	4.63	-11.48**
I felt that buying condoms would be embarrassing.	2.34	3.60	-7.65**
There were no condoms available.	2.94	4.69	-8.68**
Scale 2: The Casual Sexual Encounter			
I would want to have sex	3.60	5.51	-13.09**
It would be important for me to use a condom.	6.72	4.76	20.14**
I believe that sex without a condom would be risky.	6.89	5.40	16.38**
I would feel comfortable bringing up the topic of condom use.	5.99	4.16	15.16**
Fear would prevent me from bringing up the topic of condom use.	1.86	4.12	-15.11**
I would actually use a condom.	6.60	4.55	19.97**
I would use a condom only if my partner brought it up first.	1.37	4.47	-25.76**

Note: ** denotes significance at the $p < .01$ level.

On most questions, men and women experienced pluralistic ignorance to the same degree. However, a series of ANOVAs revealed some gender differences on the casual sexual scenario. Men experienced pluralistic ignorance to a lesser extent on items that measured their willingness to have sex in the scenario, their beliefs about the importance of condoms, the likelihood that they would actually use a condom, and the likelihood that they would use a condom only if their partner brought it up first (see Table 5 for summary).

Table 5: Perception of Self/Other Difference Across Gender (Difference Scores)

Item (1=Disagree Strongly; 7=Agree Strongly)	Men	Women	F (Sig.)
Scale 2: The Casual Sexual Encounter			
I would want to have sex	-.97	-2.12	9.63**
It would be important for me to use a condom.	1.42	2.08	7.05**
I believe that sex without a condom would be risky.	1.42	1.50	.126
I would feel comfortable bringing up the topic of condom use.	1.52	1.90	1.53
Fear would prevent me from bringing up the topic of condom use.	-1.87	-2.34	1.47
I would actually use a condom.	1.52	2.18	6.55*
I would use a condom only if my partner brought it up first.	-2.52	-3.23	5.44**

Note: * denotes significance at the $p < .05$ level. ** denotes significance at the $p < .01$ level. Gender comparisons are based on average difference score for men and women.

A factor analysis was used to group the condom use inhibition scale and the casual sexual scenario into a smaller number of variables. Pluralistic ignorance was also examined using the elements identified during the factor analysis. All five factors, Awkward, Condom Opinion, Acquire, Importance, and Initiate were compared using paired-sample T-tests. Each factor revealed significant self/other differences with participants rating themselves as different from typical UMass students (see Table 6). Participants generally rated typical UMass students as more likely to be inhibited from using condoms because of interpersonal awkwardness, negative attitudes about the utility of necessity of condoms, and because of difficulties acquiring condoms.⁴ On the casual sexual scenario, participants rated typical UMass students as believing less strongly that condoms would be important in the scenario.⁵ Additionally, participants rated typical UMass students as more likely to be fearful of bringing up the topic of condom use.⁶ Finally, men experienced significantly less pluralistic ignorance than women on the factors Importance and Condom Opinion.

Table 6: Perception of Self/Other Difference Across Factor Scores

Factor	Participant's Response	Typical UMass Student	Men: Self/Other Difference	Women: Self/Other Difference
Scale 1				
Awkward	9.96*	18.98**	-8.38	-9.16
Condom Opinion	11.09*	20.22**	-7.07 ^a	-9.94 ^b
Acquire	5.22*	8.33**	-2.66	-3.21
Scale 2				
Importance	20.21*	14.70**	4.35 ^a	5.78 ^b
Initiate	12.14*	8.06**	3.39	4.24

Note: Differences between * and ** are at the $p < .01$ level. Differences between ^a and ^b are at the $p < .05$ level. Gender comparisons are based on average difference score for men and women.

⁴ Factors Awkward, Condom Opinion, and Acquire.

⁵ Factor Importance.

⁶ Factor Initiate.

C. The Relationship Between Pluralistic Ignorance and Condom Use

It was predicted that the experience of pluralistic ignorance in the casual sexual scenario would be related to participants' reported history of condom use. Participants reported the number of times they had sexual intercourse over the last 3 months, and of those times, the number of times they actually used a condom. These variables were translated into a condom percentage variable for the last 3 months and used in the analysis. A multiple regression analysis was used to examine the relationship between condom use in the last 3 months (PER.3MON) and pluralistic ignorance across all five factors, Awkward (AWKD), Condom Opinion (CON.OPD), Acquire (ACQUIRED), Importance (IMPORTD), and Initiate (INITIATED). Each regression controlled for the effects of age (AGE), gender (SEX), self-esteem (SE), fear of negative evaluation (FNE), and social desirability (SD).

Age, gender, self-esteem, fear of negative evaluation, and social desirability were included as covariates for several reasons. First, it is reasonable to suspect that sexual experience and condom use may be related to age and gender. Several studies have shown that men's and women's attitudes differ on the subject of condom use and casual sex (Clark & Hatfield, 1989; Herold & Mewhinney, 1993) and preliminary results of this study demonstrate that age may be an important variable in understanding sexual experience and condom use. Second, self-esteem and fear of negative evaluation were included as covariates because of their potential relevance to an individual's willingness or ability to bring up the issue of condom use. For example, participants with a low self-esteem or a high fear of negative evaluation might be less likely to risk bringing up the topic of condom use. Including these variables as covariates helps to differentiate the

influence of pluralistic ignorance from that of other variables. Third, because this study deals with controversial and personal material, some participants may be inclined to respond in socially desirable ways. As such, it is important to control for the effects of social desirability in the analysis.

1. Regression #1

A multiple regression analysis was used to examine the relationship between condom use and pluralistic ignorance for factor Awkward⁷ (reported history of being inhibited from using condoms because of interpersonal awkwardness) when controlling for age, gender, self-esteem, fear of negative evaluation, and social desirability. The data from the analysis are presented in Table 7.

Table 7: Relationship Between Condom Use and Pluralistic Ignorance for Factor Awkward

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig.
		B	Std. Error	Beta			
1	Constant	184.391	49.644			3.714	.000
	AGE	-3.264	1.224	-.264		-2.666	.009
	SEX	-3.825	10.844	-.035		-.353	.725
	SE	-9.006	7.154	-.140		-1.259	.211
	FNE	-6.428	6.058	-.121		-1.061	.291
	SD	-44.793	30.761	-.155		-1.456	.149
	2	Constant	178.962	51.042			3.506
	AGE	-3.202	1.236	-.259		-2.591	.011
	SEX	-4.117	10.902	-.038		-.378	.707
	SE	-9.178	7.190	-.142		-1.277	.205
	FNE	-5.869	6.187	-.111		-.949	.345
	SD	-44.829	30.879	-.155		-1.452	.150
	AWKD	-.367	.746	-.049		-.492	.624

a Dependent Variable: PER.3MON

The first equation, which included age, gender, self-esteem, fear of negative evaluation, and social desirability accounted for an insignificant amount of the variance,

⁷ Factor Awkward: Talking about condoms would be awkward, using a condom would interrupt the mood, my partner would prefer not to use a condom, I worried that my partner would feel that I did not trust him/her.

$R^2=.05$. The inclusion of pluralistic ignorance for factor Awkward in the second equation did not change the amount of variance accounted for by the model, $R^2=.05$. The overall model was not significant nor was the relationship between pluralistic ignorance for factor Awkward and condom use, $b=-.05$, $p=.62$ (see Table 7).

2. Regression #2

A multiple regression analysis was used to examine the relationship between condom use and pluralistic ignorance for factor Condom Opinion⁸ (reported history of being inhibited from using condoms because of negative attitudes about the utility and necessity of condoms) when controlling for age, gender, self-esteem, fear of negative evaluation, and social desirability. The data from the analysis are presented in Table 8.

Table 8: Relationship Between Condom Use and Pluralistic Ignorance for Factor Condom Opinion

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig.
		B	Std. Error	Beta			
1	Constant	157.727	52.743			2.990	.004
	AGE	-2.948	1.252	-.286		-2.355	.022
	SEX	3.744	11.637	.039		.322	.749
	SE	-3.495	7.872	-.059		-.444	.659
	FNE	-1.706	7.028	-.034		-.243	.809
	SD	-67.632	38.670	-.228		-1.749	.085
	2	Constant	123.149	53.189			2.315
	AGE	-2.907	1.212	-.282		-2.399	.019
	SEX	1.066	11.321	.011		.094	.925
	SE	-1.357	7.674	-.023		-.177	.860
	FNE	-.945	6.809	-.019		-.139	.890
	SD	-50.701	38.133	-.171		-1.330	.188
	CON.OPD	-1.966	.851	-.271		-2.311	.024

a Dependent Variable: PER.3MON

The first model, which included age, gender, self-esteem, fear of negative evaluation, and social desirability, accounted for a relatively small amount of the

⁸ Factor Condom Opinion: Using a condom would not feel good, I got caught up in the heat of the moment, I believed that my partner did not have a sexually transmitted disease, I believed that my partner was already using birth control.

variance, $R^2=.06$. When pluralistic ignorance for factor Condom Opinion was included in the regression, the new equation accounted for twice the variance of the first model, $R^2=.12$. The results of the regression analysis showed a significant, negative relationship between pluralistic ignorance for factor Condom Opinion and condom use over the last 3 months, $b=-.27$, $p<.05$ (see Table 8). This relationship emerged as significant above and beyond the influence of age, gender, self-esteem, fear of negative evaluation, and social desirability, indicating that students who felt that typical UMass students' attitudes about condoms were more negative than their own attitudes used condoms less frequently. In other words, as pluralistic ignorance for Condom Opinion increased, condom use decreased. The analysis also shows a significant main effect for age, $b=-.28$, $p<.05$ (see Table 8). Older students reportedly used condoms less frequently than younger students.

3. Regression #3

A multiple regression analysis was used to examine the relationship between condom use and pluralistic ignorance for factor Acquire⁹ (reported history of being inhibited from using condoms because they were difficult to acquire) when controlling for age, gender, self-esteem, fear of negative evaluation, and social desirability. The data from this analysis is presented in Table 9.

⁹ Factor Acquire: I felt that buying condoms would be embarrassing, there were no condoms available.

Table 9: Relationship Between Condom Use and Pluralistic Ignorance for Factor Acquire

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig.
		B	Std. Error	Beta			
1	Constant	189.846	49.414			3.842	.000
	AGE	-3.173	1.214	-.257		-2.613	.010
	SEX	-3.388	10.741	-.031		-.315	.753
	SE	-9.668	7.109	-.151		-1.360	.177
	FNE	-8.376	6.080	-.158		-1.378	.171
	SD	-43.912	30.411	-.152		-1.444	.152
	2	Constant	171.259	47.590			3.599
	AGE	-2.982	1.162	-.242		-2.565	.012
	SEX	-5.178	10.284	-.047		-.503	.616
	SE	-10.401	6.800	-.163		-1.530	.129
	FNE	-5.887	5.863	-.111		-1.004	.318
	SD	-46.504	29.084	-.160		-1.599	.113
	ACQUIRED	-3.597	1.115	-.297		-3.227	.002

a Dependent Variable: PER.3MON

The first model, which included age, gender, self-esteem, fear of negative evaluation, and social desirability accounted for a relatively small amount of the variance, $R^2=.06$. When pluralistic ignorance for factor Acquire was included in the regression, the new equation accounted for more than twice the variance of the first model, $R^2=.14$. The results of the regression show a significant, negative relationship between pluralistic ignorance for factor Acquire and condom use over the last 3 months, $b=-.30$, $p<.01$ (see Table 9). This relationship emerged as significant above and beyond the influence of age, gender, self-esteem, fear of negative evaluation, and social desirability, indicating that students who felt that typical UMass students were more likely to be inhibited from using condoms because of a difficulty acquiring them used condoms less frequently. In other words, as pluralistic ignorance for Acquire increased, condom use decreased. The analysis also revealed a significant main effect for age, indicating that older students used condoms less frequently than younger students, $b=-.24$, $p<.05$ (see Table 9).

4. Regression #4

A multiple regression analysis was used to examine the relationship between condom use and pluralistic ignorance for factor Importance¹⁰ (beliefs about the importance of using condoms in the casual sexual scenario) when controlling for age, gender, self-esteem, fear of negative evaluation, and social desirability. The data from the analysis are presented in Table 10.

Table 10: Relationship Between Condom Use and Pluralistic Ignorance for Factor Importance

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	T	
1	Constant	176.338	50.188		3.514	.001
	AGE	-3.249	1.238	-.261	-2.624	.010
	SEX	-2.647	10.942	-.024	-.242	.809
	SE	-7.723	7.158	-.119	-1.079	.283
	FNE	-5.636	6.076	-.105	-.928	.356
	SD	-42.737	31.410	-.141	-1.361	.177
	2	Constant	174.636	50.074		3.488
	AGE	-3.289	1.236	-.264	-2.662	.009
	SEX	-5.916	11.229	-.053	-.527	.599
	SE	-8.872	7.199	-.136	-1.232	.221
	FNE	-5.481	6.061	-.102	-.904	.368
	SD	-45.709	31.419	-.150	-1.455	.149
	IMPORTD	1.796	1.452	.122	1.237	.219

a Dependent Variable: PER.3MON

The first equation, which included age, gender, self-esteem, fear of negative evaluation, and social desirability accounted for an insignificant amount of the variance, $R^2=.04$. The inclusion of pluralistic ignorance for factor Importance in the second equation slightly changed the amount of variance accounted for by the model, $R^2=.05$. The overall model was not significant nor was the relationship between pluralistic ignorance for factor Importance and condom use, $b=.12$, $p=.22$ (see Table 10).

¹⁰ Factor Importance: It would be important for me to use a condom, I believe that sex without a condom would be risky, I would actually use a condom.

5. Regression #5

A multiple regression analysis was used to examine the relationship between condom use and pluralistic ignorance for factor Initiate¹¹ (ability to bring up the issue of condom use in the casual sexual scenario) when controlling for age, gender, self-esteem, fear of negative evaluation, and social desirability. The data from the analysis are presented in Table 11.

Table 11: Relationship Between Condom Use and Pluralistic Ignorance for Factor Initiate

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig.
		B	Std. Error	Beta			
1	Constant	177.523	50.093			3.544	.001
	AGE	-3.335	1.240	-.264		-2.689	.008
	SEX	-1.970	10.960	-.018		-.180	.858
	SE	-8.218	7.143	-.126		-1.151	.253
	FNE	-5.359	6.041	-.100		-.887	.377
	SD	-39.952	31.251	-.132		-1.278	.204
	2	Constant	180.499	50.082			3.604
	AGE	-3.561	1.254	-.282		-2.840	.005
	SEX	-4.263	11.124	-.038		-.383	.702
	SE	-9.032	7.167	-.138		-1.260	.210
	FNE	-5.073	6.037	-.095		-.840	.403
	SD	-41.899	31.249	-.138		-1.341	.183
	INITIATED	1.493	1.301	.111		1.147	.254

a Dependent Variable: PER.3MON

The first equation, which included age, gender, self-esteem, fear of negative evaluation, and social desirability accounted for an insignificant amount of the variance, $R^2=.04$. The inclusion of pluralistic ignorance for factor Initiate in the second equation slightly changed the amount of variance accounted for by the model, $R^2=.05$. The overall model was not significant nor was the relationship between pluralistic ignorance for factor Initiate and condom use, $b=.11$, $p=.25$ (see Table 11).

¹¹ Factor Initiate: I would feel comfortable bringing up the topic of condom use, Fear would prevent me from bringing up the topic of condom use.

D. Additional Analyses

The non-significant findings in the relationship between pluralistic ignorance for factors Importance and Initiate, and condom use suggested the inclusion of two additional regressions. These additional analyses were used to clarify the role of pluralistic ignorance in condom use behavior. Additionally, these analyses might lead to important suggestions for future research.

1. Regression #6

A multiple regression analysis was used to examine the relationship between pluralistic ignorance for the factor Importance and the likelihood that an individual would use condoms in the scenario¹² when age, gender, self-esteem, fear of negative evaluation, and social desirability were held constant. The data from the analysis are presented in Table 12.

¹² Based on response to item 6, "I would actually use a condom."

Table 12: Relationship Between Condom Use in the Casual Sexual Scenario and Pluralistic Ignorance for Factor Importance

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	T	
1	Constant	6.309	1.023			
	AGE	-2.593E-02	.028	-.073	6.166	.000
	SEX	.704	.203	.271	-9.39	.349
	SE	.143	.146	.086	3.471	.001
	FNE	-.119	.113	-.092	.979	.329
	SD	.264	.520	-.040	-1.057	.292
					.508	.612
2	Constant	6.242	.969			
	AGE	-2.821E-02	.026	-.079	6.441	.000
	SEX	.535	.196	.206	-1.078	.283
	SE	7.653E-02	.140	.046	2.730	.007
	FNE	-.147	.107	-.113	.549	.584
	SD	.131	.494	.020	-1.373	.172
	IMPORTD	.113	.026	.322	2.65	.000

a Dependent Variable: S1.6

The first equation, which included age, gender, self-esteem, fear of negative evaluation, and social desirability accounted for a relatively small amount of the variance, $R^2=.07$. The inclusion of pluralistic ignorance for factor Importance in the second equation more than doubled the amount of variance accounted for by the model, $R^2=.17$. The results of the regression show a significant positive relationship between pluralistic ignorance for Importance and the likelihood that participants would use a condom, $b=.32$, $p<.01$. In other words, as pluralistic ignorance for Importance increased, participants' estimations that they would be likely to use condoms in the casual sexual scenario increased as well.

2. Regression #7

A multiple regression analysis was conducted to examine the relationship between pluralistic ignorance for factor Initiate and the likelihood that an individual would use

condoms in the scenario, when age, gender, self-esteem, fear of negative evaluation, and social desirability were held constant. The data from this analysis are presented in Table 13.

Table 13: Relationship Between Condom Use in the Casual Sexual Scenario and Pluralistic Ignorance for Factor Initiate

Model		Unstandardized Coefficients		Standardized Coefficients		T	Sig.
		B	Std. Error	Beta			
1	Constant	6.328	1.022			6.192	.000
	AGE	-2.639E-02	.028	-.074		-.957	.340
	SEX	.710	.202	.273		3.507	.001
	SE	.138	.146	.083		.945	.346
	FNE	-.122	.113	-.095		-1.088	.278
	SD	.299	.521	.046		.575	.566
	2	Constant	6.368	1.011			6.297
	AGE	-3.386E-02	.028	-.095		-1.230	.220
	SEX	.649	.202	.250		3.207	.002
	SE	.112	.145	.068		.774	.440
	FNE	-.112	.111	-.087		-1.007	.316
	SD	.290	.515	.044		.563	.574
	INITIATED	5.328E-02	.025	.160		2.096	.038

a Dependent Variable: S1.6

The first equation, which included age, gender, self-esteem, fear of negative evaluation, and social desirability accounted for a relatively small amount of the variance, $R^2=.07$. The inclusion of pluralistic ignorance for factor Initiate in the second equation changed the amount of variance accounted for by the model, $R^2=.09$. The results of the regression show a significant positive relationship between pluralistic ignorance for Initiate and likelihood that participants would use a condom in the scenario, $b=.16$, $p<.05$. In other words, as pluralistic ignorance for Initiate increased, participants' estimations that they would be likely to use condoms in the casual sexual scenario increased as well.

CHAPTER IV

DISCUSSION

In the era of AIDS, the study of casual sex and condom use among college students is an extremely important area of inquiry. In terms of sexual behavior, AIDS prevention requires abstinence or the use of a condom to be effective. But as abstinence is not likely to be endorsed as a method of AIDS prevention by most college students, identifying the factors that influence positive attitudes about condoms and condom use is an extremely important area of research. In general, researchers have found that college students' attitudes about the importance of using condoms are generally positive, yet condom use is inconsistent at best (Cole & Slocumb, 1995; Forrest & Fordyce, 1988; Kegeles, Adler, & Irwin, 1988; Seal & Palmer-Seal, 1996). However, past research that has examined attitudes about condoms has generally not considered the social context.

In the study of condom use, understanding student attitudes requires an examination of the interpersonal context in which these attitudes exist. Many researchers have sought to study how students' attitudes relate to their behavior. But this research is unique in its approach to the study of condom use in that it recognizes the importance of the social context. How students view themselves in relation to others may be more important than understanding their attitudes. For example, it is extremely important to determine whether college students view themselves as adhering to the normative view, or whether they perceive themselves to be deviant. This research has clearly shown that students believe their attitudes are different from those held by typical other students. These findings suggest that pluralistic ignorance may be associated with inconsistent condom use among college students.

A. Student Attitudes and Pluralistic Ignorance

Attitudes about condoms were examined somewhat indirectly through the casual sexual scenario and condom inhibition scale. As expected, participants generally reported that they had not been inhibited from using condoms in the past for the reasons listed.¹³ Similarly, students' responses to the casual sexual scenario were also positive. Students generally believed that they would be somewhat unlikely to have sex in the casual scenario, that using condoms would be important (and a failure to do so would be risky), and that they would not be fearful of bringing up the issue of condom use.

But despite relatively uniform safe sex attitudes, students showed considerable inconsistency in their reported history of condom use. In the era of AIDS, a highly infectious and deadly disease, failing to use a condom even once can be dangerous. But, in this study, the majority of the participants used condoms less than half of the time. In the last 3 months, many students never used a condom, a disturbing finding. On the surface, participants' condom use behavior is difficult to reconcile with the attitudes they reported in the survey.

Understanding student attitudes is facilitated by examining them in the context of their perceptions of others. On the condom use inhibition scale, participants rated typical UMass students as more likely to be inhibited from using condoms because of negative attitudes, interpersonal awkwardness, or because acquiring condoms would be difficult. Pluralistic ignorance was also identified in participants' reactions to the casual sexual scenario. Participants felt that typical UMass students would be more likely to have sex

¹³ Grouped by the factor analysis into three areas, interpersonal awkwardness, condom opinions, and ease of condom acquisition

in the casual sexual scenario, that they would be less likely to use a condom (and would believe condom use to be less important), and that they would be more fearful of bringing up the topic of condom use.

It is clear that examining student attitudes in isolation provides incomplete information. Comparatively speaking, it is important to view student attitudes in a social context, namely one in which students perceive their attitudes as deviating from social norms. A superficial examination leads to the conclusion that attitudes about condoms are generally positive, but condom use is inconsistent. However, a closer analysis reveals a more sophisticated model, namely that students have positive attitudes about condoms, use condoms inconsistently, but also perceive themselves as deviating from their normative group. The potential importance of this deviance should not be overlooked. Sexual situations can be anxiety-provoking enough.¹⁴ Perceived deviance adds another layer of interpersonal difficulty.

1. The Source of Pluralistic Ignorance

It is important to understand how pluralistic ignorance might arise in the area of condom use. Individuals have complete access to their own attitudes about condoms. But these same participants do not have access to the attitudes held by typical others. To estimate the attitudes of typical others, participants must rely on subjective judgements. Because they lack objective information about typical students' attitudes, their estimations are based primarily on the imagined inaction of the typical student.

¹⁴ Or in the words of one participant, "sex is confusing enough!"

It is not difficult to identify the source of pluralistic ignorance in this situation. Pluralistic ignorance is the process by which individuals misperceive social norms because they fail to recognize that other people's public behavior does not necessarily match their private attitudes. Individuals frequently misperceive attitudes in ambiguous situations such as emergencies (Latané & Darley, 1968), the classroom (Miller & McFarland, 1991), with attitudes about alcohol (Prentice & Miller, 1993), and with attributions in relationship formation (Vorauer & Ratner, 1996). Momentary hesitation in emergency situations, for example, perpetuates the belief that there is no emergency. Mutual hesitation in the process of relationship formation can signal a lack of interest. In general, pluralistic ignorance occurs when individuals behave in ways that do not match their private beliefs, but misread others, failing to realize that they may also behave in ways that do not necessarily match their privately held beliefs.

Communication in sexual situations is difficult, and frequently, anxiety-provoking. In a sexual encounter, outward behaviors may not reflect internal attitudes, creating a ripe opportunity for pluralistic ignorance. For example, assume that most students worry that bringing up the topic of condom use will imply that they do not trust their partner. In order to avoid sending this message, potentially disrupting the sexual encounter and/or the preexisting relationship, individuals may decide to wait for their partner to bring up the issue of condom use. However, in doing so, each individual inadvertently sends the message that he/she is not concerned about condom use. Each person in a casual sexual encounter hesitates while waiting for definitive social cues from the other. Simultaneously, each person assumes that his/her potential partner is hesitating for some attitudinal reason (i.e. he/she does not want to use a condom). Both individuals

incorrectly assume that the other would bring up the issue of condom use if he/she judged condom use to be important. Thus, hesitation, or silence, is misread as ambivalence. Unfortunately, individuals fail to recognize that their partners are operating under identical demands, wrongfully assuming that their partners have not brought up the issue of condom use because they hold negative attitudes about condoms.

Participants in this study viewed themselves as having positive attitudes about condom use. Additionally, they reported that they had not been inhibited from using condoms for any of the reasons listed. Participants presented themselves as rational and motivated primarily by positive attitudes about condoms. But these same individuals failed to give typical other students the benefit of the doubt. Other students were expected to hold more negative attitudes about condoms, and to forego using condoms because of their attitudes. Even though all students deal with the reality of AIDS, each individual assumed that other students were less concerned with the dangers of unprotected sex. This fact alone creates a powerful social dynamic. If individuals truly do view their opinions about condoms as deviant, they might be inhibited from using them consistently. The concept of pluralistic ignorance certainly contributes to the understanding of condom use among college students.

2. The Relationship Between Pluralistic Ignorance and Condom Use

The regression analyses were used 1) to determine if there was a relationship between pluralistic ignorance and past history of condom use and 2) to control for other potential sources of variance by using important variables presumed to influence condom use as covariates. The analysis revealed that pluralistic ignorance in the casual sexual

scenario (factors Importance and Initiate) did not significantly relate to condom use. Additionally, pluralistic ignorance for the factor Awkward did not exhibit a significant relationship to condom use. However, there was a significant relationship between pluralistic ignorance and condom use for two factors, Condom Opinion and Acquire.

The results demonstrated a significant, negative relationship between condom use and pluralistic ignorance for factor Condom Opinion. The factor Condom Opinion measures the extent to which attitudes about the utility and necessity of condoms inhibited students from using them in the past. This relationship emerged as significant above and beyond the effects of age, gender, self-esteem, fear of negative evaluation, and social desirability. As students experienced pluralistic ignorance to a greater extent, they reported using condoms less frequently. In this case, pluralistic ignorance meant that participants felt that typical students were more likely to be inhibited from using condoms because they held negative attitudes about the utility and necessity of condoms. This information is important because even though students have positive attitudes about condoms, they may enter into casual sexual encounters believing that their partners hold negative attitudes. If participants believe that typical UMass students are likely to be inhibited from using condoms, they may be discouraged from bringing up the issue of condom use in a sexual encounter. As a result, it is easy to see how mutual hesitation may quickly lead to a situation in which two people fail to use a condom even though their attitudes about condoms are positive.

The results also revealed a significant, negative relationship between condom use and pluralistic ignorance for factor Acquire. The relationship emerged as significant above and beyond the effects of age, gender, self-esteem, fear of negative evaluation, and

social desirability. Acquire is the factor score that measures the extent to which students were inhibited from using condoms because they were difficult to obtain. In this case, pluralistic ignorance meant that participants believed that typical students would be more likely to be discouraged from using condoms because of difficulty acquiring them. When individuals have strong opinions about the importance of condoms, they will make efforts to acquire them even if this process is difficult. But when acquiring condoms is not supported by one's partner, it is harder to justify the potentially disruptive efforts to obtain condoms. Again, in this situation, mutual hesitation can lead to the development of pluralistic ignorance. Thus, as attitudinal divergence between participants and their estimations of typical others increased, condom use decreased.

These results suggest that students may be influenced by the attitudes of others. The fact that participants believed that typical students held more negative attitudes about condoms may have impacted their willingness to make their own attitudes known. It is difficult to determine exactly how pluralistic ignorance is related to condom use. The experience of pluralistic ignorance may lead couples to fail to use condoms because they misperceive the attitudes of their partners. On the other hand, mutual hesitation and/or a failure to use condoms in the past may have contributed to the development of pluralistic ignorance. But while future research will hopefully provide additional information, the utility of the concept of pluralistic ignorance in this research remains clear.

It is important to understand why the relationship between pluralistic ignorance and condom use was different across the factors used in the study. For example, difference factor scores for Awkward, Importance, and Initiate were not significantly related to condom use. However, for Importance and Initiate, it is not surprising that the

relationship between pluralistic ignorance and condom use was not significant. First, participants' past behaviors (i.e. condom use) may not have been relevant in the casual sexual scenario. The condom use inhibition scale referenced past behaviors while the casual sexual scenario asked participants to predict their future behavior. It seems likely that when asked to predict their behavior in a hypothetical situation, participants would not expect to be influenced by pluralistic ignorance, and would base their predictions on their own attitudes. In other words, when imagining a hypothetical situation, students' predictions of their future behavior would not be influenced by pluralistic ignorance, but rather, students would expect to behave in line with their attitudes even if they have not done so in the past.

The additional analyses included in the results revealed that when participants were asked to explicitly predict their future behavior, the relationship between pluralistic ignorance and condom use was the opposite of that found between pluralistic ignorance and past behavior. In other words, as participants experienced more pluralistic ignorance in the casual sexual scenario, they reported that they would be even more likely to use condoms in the scenario. Thus, students relied on the rational notion that their positive attitudes about condoms would be the most accurate predictors of their future behavior even though the experience of pluralistic ignorance was negatively associated with their past history of condom use.

There may be a prominent difference in the relationship between pluralistic ignorance and predictions of future behavior, and the relationship between pluralistic ignorance and past behavior. It is possible that students underestimate the extent to which pluralistic ignorance can influence their behavior. This possibility helps to explain

why pluralistic ignorance for Importance and Initiate was not related to past condom use in this sample.

Pluralistic ignorance for factor Awkward was also not found to be related to condom use. Importantly, this factor characterizes interpersonal awkwardness rather than one of the attitudinal dimensions. Because students are aware of the importance of condom use, it makes sense that pluralistic ignorance for Awkward might not be related to condom use. In this study, participants were particularly cognizant of deviance as it relates to attitudes about condoms. Quite simply, believing that typical others would find talking about condoms to be more awkward may not have been enough to motivate participants to behave in ways incongruent with their attitudes. However, when pluralistic ignorance existed in the attitudinal dimension, there may have been stronger pressures to conform to the perceived attitudes of their partner.

This research has contributed to the understanding of student attitudes about safe sex and condom use. Using the concept of pluralistic ignorance to explain the divergence between students' attitudes and their behaviors is a unique and useful approach to the study of social norms and student attitudes about casual sex. Future research will continue to benefit from including the social context in the study of college students' attitudes about condom use.

B. Limitations and Suggestions for Further Research

Perhaps the most obvious limitation of this research is the fact that the sample consists primarily of women. This limits the potential conclusions that can be drawn about the role of gender in attitudes about condoms and condom use. Perhaps the

strongest gender difference was that men and women differed in their attitudes about the importance of condom use and about their willingness to have sex in the casual sexual scenario. Men rated themselves as more likely to have sex in the casual sexual scenario, a result that is consistent with other studies of sexual attitudes. But the most interesting finding in the context of this research was that men and women differ in the extent to which they experience pluralistic ignorance. This is a finding that should certainly be explored in greater depth and with a more balanced sample. Because the issues involved with using a condom are different for men and women, accurately studying the effects of gender is an important aspect of this research. Although several analyses were conducted across gender, the small number of men in the sample make generalizations difficult. It is likely that conducting similar studies with a gender balanced sample will reveal additional information about the process of pluralistic ignorance.

Second, the dependent variable in this study was condom use percentage over the last 3 months. In fact, the primary way of measuring condom use behavior in this study was through self reported condom use percentages. Unfortunately, this measure of past condom use had extremely large standard deviations. In many ways, the sample was bimodal, with many students reporting that they used condoms all of the time, and many reporting that they almost never used condoms. In the future, it will be important to include other methods of measuring condom use. For example, perhaps designing a study in which students are given the opportunity to purchase condoms would provide a more accurate dependent measure of condom use. Regardless, identifying more effective ways of measuring behavior will facilitate the comparison of attitudes and behaviors in future studies of pluralistic ignorance.

Third, it is clear that attitudes about condoms and condom use might be different depending on whether or not an individual is in a dating relationship. This study focused on casual sexual encounters so relationship status was not relevant in the casual sexual scenario. Future studies should examine the differences between individuals who are and who are not in dating relationships. It is likely individuals in dating relationships will have different reasons for using or not using condoms. Additionally, attitudes and the experience of pluralistic ignorance may be different across a relationship status variable. Particularly interesting would be an examination of pluralistic ignorance between dating partners. It seems likely that dating couples might experience relational pluralistic ignorance throughout the course of the dating relationship. The impact on condom use that pluralistic ignorance might have in dating relationships should be examined.

Fourth, participants generally reported that they had not been inhibited from using condoms in the past. But data on their history of condom use made it clear that students had been inhibited to a certain extent, if not for the reasons listed. Future research should attempt to elicit the reasons that students give for not using condoms. Perhaps an open ended questionnaire would generate the reasons that this study missed. Including participant generated reasons might provide more powerful measures of pluralistic ignorance. For example, some studies have used a forced choice questionnaire to make the self/other divergence more explicit (Vorauer & Ratner, 1996). A forced choice procedure would more effectively isolate the exact type of attitudinal divergence present in condom use. Additionally, perhaps asking students to remember specific, recent incidents in which they did not use a condom and then asking them to provide the reasons

for their decision could also be more effective. In these cases, students might be more able to accurately report reasons that inhibited them from using condoms.

Fifth, the correlational design of this research does not permit specific causal interpretations of the data. Although a relationship between pluralistic ignorance and condom use was found, it is difficult to understand the direction of causality. Future studies should find ways to use pluralistic ignorance to predict actual behavior. This can be accomplished by measuring attitudinal divergence before students are presented with a particular situation. In this study, measuring student behavior in an actual sexual encounter would have been impossible. But because pluralistic ignorance is a robust phenomenon, there are likely to be many situations amenable to examining the direct influence of pluralistic ignorance on behavior. For example, to examine causality, researchers could use a more effectively measured dependent variable in a controlled experiment. Future studies should make efforts to deal with the problems of causality presented by this research.

Finally, pluralistic ignorance is likely to be a concept that contributes to the success of interventions designed to raise awareness about the importance of safe sex and condom use. Schroeder and Prentice (1998) found that alcohol education programs that included peer discussion about pluralistic ignorance were more effective in promoting attitude change than those that did not. Future research should continue to examine programs that explicitly use the concept of pluralistic ignorance in high school or college level interventions. While pluralistic ignorance seems to be a concept that many students would be able to understand, specific research is necessary to test the utility of this concept in programs designed to address condom use. The additional analyses revealed

that students expect to behave in accordance with their attitudes despite pluralistic ignorance. Perhaps making the experience of pluralistic ignorance more explicit will strengthen the rational connection between attitudes about condoms and condom use. Discovering that pluralistic ignorance characterizes attitudes about condom use is extremely important. Making this concept relevant and useful to students requires that research on the applications of pluralistic ignorance be conducted.

C. Conclusions

This study found attitudinal deviance between participants' opinions, and their estimations of the opinions of typical UMass students. As with most studies of pluralistic ignorance, norm misperception was prominent with most individuals viewing themselves as different from typical others. But this study was able to take the concept of pluralistic ignorance one step further. This research demonstrated that condom use was significantly related to pluralistic ignorance for the factors Condom Opinion and Acquire. This relationship was found above and beyond the effects of several important variables (age, sex, self-esteem, fear of negative evaluation, and social desirability), suggesting that pluralistic ignorance may play a prominent role in college students' sexual practices.

The existence of pluralistic ignorance demonstrates the importance of examining student attitudes in a social context. In the case of condom use and AIDS prevention, it is not enough to simply understand the opinions that individual students hold. As with any anxiety-provoking or ambiguous situation, the role of the other people involved can be

extremely important, and thus, pluralistic ignorance must be recognized and understood. Attitudinal divergence is additional information that helps to explain the discrepancy, found by many researchers, between positive attitudes about condoms and inconsistent condom use.

APPENDIX

MEASURES

For all questions: This survey is designed to measure students' attitudes about casual sex. While many questions simply ask you to give estimations of your attitudes in hypothetical situations, there are several questions that will ask you to draw from your own experience. It is clear that all people make different choices with regards to sex. Because of this, you may find that certain questions do not pertain to you. If you find that a question is not applicable to you, please mark that question with the letters "NA." For the entire survey, please answer as honestly as you can. There are no right or wrong answers. **All responses are confidential and anonymous and your name will never be associated with your subject number.** Thank you for your participation and please feel free to ask if you have any questions!

Imagine the following situation: You are at a party; currently you are not seriously romantically involved with anyone. Early in the evening, you are introduced to a single person whom you find attractive. You learn from a brief conversation that you have a lot in common. In your opinion, this is someone you would be interested in having a sexual relationship with. Toward the end of the evening, you find yourself alone with this person. You talk with the person for awhile. Later, you return to the party together. As things begin to wind down, you and this person decide to walk home together. When you arrive at this person's room, you are invited inside. You both sit down on the bed and continue to talk. Soon, the two of you begin to kiss. As things progress, you feel very sexually attracted to this person. So far, this person has not brought up the issue of condom use.

- Please answer questions 1-7 using the following scale.

Disagree
Strongly

Neutral/
Mixed

Agree
Strongly

1.....2.....3.....4.....5.....6.....7

In this situation:

1. I would want to have sex. _____
2. It would be important to me to use a condom. _____
3. I believe that sex without a condom would be risky. _____
4. I would feel comfortable bringing up the issue of condom use. _____
5. Fear would prevent me from bringing up the topic of condom use. _____
6. I would actually use a condom. _____
7. I would use a condom only if my partner brought it up first. _____

- Please use the following scale to answer question 8-17.

**Disagree
Strongly**

**Neutral/
Mixed**

**Agree
Strongly**

1.....2.....3.....4.....5.....6.....7

In the past, I have felt inhibited from using condoms because...

- 8. Talking about condoms would be awkward. _____
- 9. Using a condom would interrupt the mood. _____
- 10. Using a condom would not feel good. _____
- 11. My partner would prefer not to use a condom. _____
- 12. I got caught up in the heat of the moment. _____
- 13. I worried that my partner would feel I did not trust him/her. _____
- 14. I believed that my partner did not have a sexually transmitted disease. _____
- 15. I believed that my partner was already using birth control. _____
- 16. I felt that buying condoms would be embarrassing. _____
- 17. There were no condoms available. _____

Demographic Information

1. Age _____
2. Gender? **M** **F**
3. What year in school are you?
 - A. Freshman
 - B. Sophomore
 - C. Junior
 - D. Senior
 - E. Other _____
4. What is your major area of study _____ ?
5. What is your religion, if any _____ ?
6. How religious are you?
 - A. Extremely religious
 - B. Moderately religious
 - C. Somewhat religious
 - D. Not religious at all
7. What is your sexual orientation?
 - A. Heterosexual
 - B. Homosexual
 - C. Bisexual
 - D. Other _____
8. Please circle your race/ethnic group.
 - A. Alaskan Native (Eskimo or Aleut) _____.
 - B. Asian/Asian-American/Pacific Islander/South Asian (Please Specify _____).
 - C. Black (Non-Hispanic)/African-American/African-Caribbean.
 - D. Cuban-American.
 - E. Mexican-American/Chicano.
 - F. Native American (Tribal Affiliation: _____).
 - G. Puerto Rican.
 - H. Other Hispanic/Latino (Please Specify: _____).
 - I. White (Non-Hispanic).
 - J. Other (Please Specify _____).
9. Do you know how to use a condom? Yes No

10. Have you ever engaged in sexual intercourse (i.e. vaginal/anal penetration)*?
***If no, then proceed to question 29.** Yes No
11. Have you been treated for or diagnosed with a Sexually Transmitted Disease? Yes No
12. How many sexual partners have you had in your lifetime? _____
13. What percentage of the time do you use a condom? _____
14. For what reasons do you use condoms?
 A. Pregnancy prevention
 B. Disease prevention
 C. Both
 D. Do not use condoms
15. How many times did you engage in sexual intercourse during the last 3 months? _____
16. Of those times, how many times did you actually use a condom*?
***If answer to 15 was zero, write NA.** _____
17. Of those times, how many times did you use another form of disease/ pregnancy prevention*?
***If answer to 15 was zero, write NA.** _____
18. What other forms of disease/pregnancy prevention did you use?
***If answer to 15 was zero, write NA.** _____
19. How many different partners have you had during the last 3 years? _____
20. What percentage of the time did you use a condom in the last 3 years? _____
21. With your most recent partner, did you suggest the use of a condom? Yes No
22. With your most recent partner, did he/she suggest the use of a condom? Yes No
23. With your most recent partner, did you use a condom? Yes No
24. Are you currently in a dating relationship? Yes No
25. If so, how many months have you been in that relationship (if not, then put NA)? _____
26. If you are in a dating relationship and are sexually active, what percentage of the time do you use condoms (if you are not in a relationship or are not sexually active, then put NA)? _____

27. If you are in a dating relationship and are sexually active, did you use condoms the first time you had sexual intercourse with this person (if you are not in a dating relationship or are not sexually active then put NA)?

Yes No
NA

28. What kind of birth control have you used in the last three months (Circle any and all that apply)?

- A. Condom
- B. Birth Control Pill
- C. Vaginal Sponge
- D. Female Condom
- E. Diaphragm
- F. Spermicide
- G. Other (please specify) _____

29. How likely is it that you might contract HIV (AIDS)?

- A. Not at all likely
- B. Somewhat likely
- C. Quite likely
- D. Very likely

30. How likely is it that you might contract an STD (not AIDS)?

- A. Not at all likely
- B. Somewhat likely
- C. Quite likely
- D. Very likely

- Please review the scenario and answer questions 1-7 using the following scale.

Imagine the following situation: You are at a party; currently you are not seriously romantically involved with anyone. Early in the evening, you are introduced to a single person whom you find attractive. You learn from a brief conversation that you have a lot in common. In your opinion, this is someone you would be interested in having a sexual relationship with. Toward the end of the evening, you find yourself alone with this person. You talk with the person for awhile. Later, you return to the party together. As things begin to wind down, you and this person decide to walk home together. When you arrive at this person's room, you are invited inside. You both sit down on the bed and continue to talk. Soon, the two of you begin to kiss. As things progress, you feel very sexually attracted to this person. So far, this person has not brought up the issue of condom use.

**Disagree
Strongly**

**Neutral/
Mixed**

**Agree
Strongly**

1.....2.....3.....4.....5.....6.....7

In this situation:

1. Typical college students would want to have sex. _____
2. Typical college students would consider it to be important to use a condom. _____
3. Typical college students would believe that sex without a condom is risky. _____
4. Typical college students would feel comfortable bringing up the issue of condom use. _____
5. Fear would prevent typical college students from bringing up the topic of condom use. _____
6. Typical college students would actually use condoms. _____
7. Typical college students would use condoms only if their partners brought it up first. _____

- Please use the following scale to answer question 8-17.

**Disagree
Strongly**

**Neutral/
Mixed**

**Agree
Strongly**

1.....2.....3.....4.....5.....6.....7

In the past, typical college students might have felt inhibited from using condoms because...

- 8. Talking about condoms would be awkward. _____
- 9. Using a condom would interrupt the mood. _____
- 10. Using condoms would not feel good. _____
- 11. Their partner would prefer not to use condoms. _____
- 12. They would be caught up in the heat of the moment. _____
- 13. They worried that their partner would feel they do not trust him/her. _____
- 14. They believed that their partner did not have a sexually transmitted disease. _____
- 15. They believed that their partner was already using birth control. _____
- 16. They felt that buying condoms would be embarrassing. _____
- 17. There were no condoms available. _____

- Read each of the following statements carefully and indicate how characteristic it is of you according to the following scale.

Not at all characteristic of me	Slightly characteristic of me	Moderately characteristic of me	Very characteristic of me	Extremely characteristic of me	
1	2	3	4	5	
I worry about what other people will think of me even when I know it doesn't make any difference.	1	2	3	4	5
I am unconcerned even if I know people are forming an unfavorable opinion of me.	1	2	3	4	5
I am frequently afraid of other people noticing my shortcomings.	1	2	3	4	5
I rarely worry about what kind of an impression I am making on someone.	1	2	3	4	5
I am afraid that people will find fault with me.	1	2	3	4	5
Other people's opinions of me do not bother me.	1	2	3	4	5
When I am talking to someone, I worry about what he/she may be thinking about me.	1	2	3	4	5
I am usually worried about what kind of impression I make.	1	2	3	4	5
If I know someone is judging me, it has little effect on me.	1	2	3	4	5
Sometimes I am concerned with what other people think of me.	1	2	3	4	5
I often worry that I will say or do the wrong thing.	1	2	3	4	5

- Read each of the following statements carefully and circle the number that indicates how much you agree or disagree with the statements.

Strongly Agree	Agree	Disagree	Strongly Disagree
1	2	3	4
1. I feel that I am a person of worth, at least on an equal basis with others.			1 2 3 4
2. I feel that I have a number of good qualities.			1 2 3 4
3. All in all, I am inclined to feel that I am a failure.			1 2 3 4
4. I am able to do things as well as most other people.			1 2 3 4
5. I feel I do not have much to be proud of.			1 2 3 4
6. I take a positive attitude toward myself.			1 2 3 4
7. On the whole, I am satisfied with myself.			1 2 3 4
8. I wish I could have more respect for myself.			1 2 3 4
9. I certainly feel useless at times.			1 2 3 4
10. At times I think I am no good at all.			1 2 3 4

- Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you.

- | | | |
|--|---|---|
| 1. Before voting I thoroughly investigate the qualifications of all the candidates. | T | F |
| 2. I never hesitate to go out of my way to help someone in trouble. | T | F |
| 3. It is sometimes hard for me to go on with my work if I am not encouraged. | T | F |
| 4. I have never intensely disliked anyone. | T | F |
| 5. On occasion I have had doubts about my ability to succeed in life. | T | F |
| 6. I sometimes feel resentful when I don't get my way. | T | F |
| 7. I am always careful about my manner of dress. | T | F |
| 8. My table manners at home are as good as when I eat out in a restaurant. | T | F |
| 9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. | T | F |
| 10. On a few occasions, I have given up doing something because I thought too little of my ability. | T | F |
| 11. I like to gossip at times. | T | F |
| 12. There have been times when I felt like rebelling against people in authority even though I knew they were right. | T | F |
| 13. No matter who I'm talking to, I'm always a good listener. | T | F |
| 14. I can remember "playing sick" to get out of something. | T | F |
| 15. There have been occasions when I took advantage of someone. | T | F |
| 16. I'm always willing to admit it when I make a mistake. | T | F |
| 17. I always try to practice what I preach. | T | F |
| 18. I don't find it particularly difficult to get along with loudmouthed, obnoxious people. | T | F |
| 19. I sometimes try to get even, rather than forgive and forget. | T | F |
| 20. When I don't know something, I don't at all mind admitting it. | T | F |
| 21. I am always courteous, even to people who are disagreeable. | T | F |
| 22. At times I have really insisted on having things my own way. | T | F |
| 23. There have been occasions when I felt like smashing things. | T | F |
| 24. I would never think of letting someone else be punished for my wrongdoings. | T | F |
| 25. I never resent being asked to return a favor. | T | F |
| 26. I have never been irked when people expressed ideas very different from my own. | T | F |
| 27. I never make a long trip without checking the safety of my car. | T | F |
| 28. There have been times when I was quite jealous of the good fortune of others. | T | F |
| 29. I have almost never felt the urge to tell someone off. | T | F |
| 30. I am sometimes irritated by people who ask favors of me. | T | F |
| 31. I have never felt that I was punished without cause. | T | F |
| 32. I sometimes think when people have a misfortune they only got what they deserve. | T | F |
| 33. I have never deliberately said something that hurt someone's feelings. | T | F |

REFERENCES

- Andrisani, P. (1978). Internal-External Attitudes, Personal Initiative, and Labor Market Experience. In *Work Attitudes and Labor Market Experience: Evidence from the National Longitudinal Surveys*. Paul Andrisani, Eileen Applebaum, Ross Koppel, & Robert C. Miljus (Eds.). New York: Praeger Publishers.
- Baldwin, J.D. & Baldwin, J.I. (1988). Factors affecting AIDS-related sexual risk-taking behavior among college students. *Journal of Sex Research*, 25, 181-196.
- Caron, S.L., Davis, C.M., Halteman, W.A., & Stickle, M. (1993). Predictors of condom-related behaviors among first year college students. *Journal of Sex Research*, 30, 252-259.
- Centers for Disease Control. (1990a). Division of Sexually Transmitted Diseases: Annual Report 1989. *U.S. Department of Health and Human Services, Atlanta, GA*.
- Centers for Disease Control and Prevention. (1994). Heterosexually acquired AIDS: United States, 1993. *Morbidity and Mortality Weekly Report*, 43, 155-160.
- Centers for Disease Control. (1995, December). *HIV/AIDS surveillance report*. Atlanta, GAA: Center for Infectious Diseases, Centers for Disease Control and Prevention.
- Clark, R.D. & Hatfield, E. (1989). Gender differences in receptivity to sexual offers. *Journal of Psychology and Human Sexuality*, 2, 39-55.
- Cline, R.W., Johnson, S.J., & Freeman, K.E. (1992). Talk among sexual partners about AIDS: Interpersonal communication or risk enhancement? *Health Communication*, 4, 39-56.
- Cochran, S.D. & Mays, V.M. (1990). Sex, lies, and HIV. *New England Journal of Medicine*, 322, 774-775.
- Cole, F.L. & Slocumb, E.M. (1995). Factors influencing safer sexual behaviors in heterosexual late adolescent and young adult collegiate males. *Journal of Nursing Scholarship*, 27(3), 217-223.
- Crowne, D.P. & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 349-354.
- Crowne, D.P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 349-354.

- Desiderato, L.L. and Crawford, H.J. (1995). Risky Sexual Behavior in College Students: Relationships Between Number of Sexual Partners, Disclosure of Previous Risky Behaviors and Alcohol Use. *Journal of Youth and Adolescence*, 24(1): 55-68.
- Festinger, L. (1954). A Theory of Social Communication Processes. *Human Relations*, 7, 117-140.
- Fields, J.M. & Schuman, H. (1976). Public beliefs and the beliefs of the public. *Public Opinion Quarterly*, 40, 427-448.
- Finkelstein, M. A. and M. T. Brannick (1997). Making decisions about sexual intercourse: Capturing college students' policies. *Basic and Applied Social Psychology*, 19(1): 101-120.
- Fisher, W.A., Fisher, J.D., & Rye, B.J. (1995). Understanding and promoting AIDS preventative behavior: Insights from the theory of reasoned action. *Health Psychology*, 14, 255-264.
- Fleming, J.S. & Courtney, B.E. (1984). The dimensionality of self-esteem: II. Hierarchical facet model for revised measurement scales. *Journal of Personality and Social Psychology*, 46(2), 404-421.
- Forrest, J.D. & Fordyce, R.R. (1988). U.S. women's contraceptive attitudes and practice: How have they changed in the 1980's? *Family Planning Perspectives*, 20, 112-118.
- Gayle, H.D., Keeling, R.P., Garcia-Tunon, M. (1990). Prevalence of human immunodeficiency virus among university students. *New England Journal of Medicine*, 323, 1538-1541.
- Hammer, J.C., Fisher, J.D., Fitzgerald, P., & Fisher, W.A. (1996). When two heads aren't better than one: AIDS risk behavior in college-age couples. *Journal of Applied Social Psychology*, 26(5), 375-397.
- Herold, E.S. & Mewhinney, D.K. (1993). Gender differences in casual sex and AIDS prevention: A survey of dating bars. *The Journal of Sex Research*, 30(1), 36-42.
- Kegeles. S.M., Adler, N.E., & Irwin, C.E. (1988). Sexually active adolescents and condoms: Changes over one year in knowledge, attitudes and use. *American Journal of Public Health*, 78, 460-461.
- Kelly, K., Smeaton, G., Byrne, D., Przybyla, D.P.J., & Fisher, W.A. (1987). Sexual attitudes and contraception among females across five college samples. *Human Relations*, 40, 237-254.

- Latané, B., & Darley, J.M. (1968). Group Inhibition of Bystander Intervention in Emergencies. *Journal of Personality and Social Psychology*, 10(3), 215-221.
- Loos, C. & Bowd, A. (1989). AIDS-related behavior change, knowledge, and opinions among first year university students. *Canadian Journal of Counseling*, 23, 288-295.
- Lorr, M. & Wunderlich, R.A. (1986). Two objective measures of self-esteem. *Journal of Personality Assessment*, 50(1), 18-23.
- McCormack, A.S., Anderton, J., and Barbieri, T. (1993). Gender, HIV awareness and prevention among college students. *College Student Journal*, 27(4), 514-522.
- McDermott, R.J., Hawkins, M.J., Moore, J.R., & Cittadino, S.K. (1987). AIDS awareness and information sources among selected university students. *Journal of American College Health*, 35, 222-226.
- McDonald, N.E., Wells, G.A., Fisher, W.A., Warren, W.K., King, M.A., Doherty, J.A., & Bowie, W.R. (1990). High risk STD/HIV behavior among college students. *Journal of the American Medical Association*, 263, 3155-3159.
- Mickler, S.E. (1993). Perceptions of vulnerability: Impact on AIDS-preventative behavior among college adolescents. *AIDS Education and Prevention*, 5, 43-53.
- Miller, D.T., & McFarland, C. (1991). When Social Comparison Goes Awry: The Case of Pluralistic Ignorance. In J. Suls & T. Wills (Eds.), *Social Comparison: Contemporary Theory and Research* (pp. 287-313). Hillsdale, NJ: Erlbaum.
- Misovich, S.J., Fisher, J.D., & Fisher, W.A. (1997). Close relationships and elevated HIV risk behavior: Evidence and possible underlying psychological processes. *Review of General Psychology*, 1(1), 72-107.
- O'Gorman, Hubert J. (1986). The discovery of pluralistic ignorance: An ironic lesson. *Journal of the History of the Behavioral Sciences*, 22, 333-345.
- Petersen-Martin, J., & Cottrell, R.R. (1987). Self-concept, values, and health behavior. *Health Education*, 18(5), 6-9.
- Prentice, D.A., & Miller, D.T. (1993). Pluralistic Ignorance and Alcohol Use on Campus: Some consequences of Misperceiving the Social Norm. *Journal of Personality and Social Psychology*, 64, 243-256.
- Rosenberg, M. (1965). *Society and the Adolescent Self-Image*. Princeton, NJ: Princeton University Press.

- Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1-28.
- Sanderson, C.A. & Maibach, E.W. (1996). Predicting condom use in African American STD patients: The role of two types of outcome expectancies. *Journal of Applied Social Psychology*, 26, 17, 1495-1509.
- Sawyer, R.G. & Beck, K.H. (1991). Effects of videotapes on perceived susceptibility to HIV/AIDS among university freshmen. *Health Values*, 15, 31-40.
- Schroeder, C.M. & Prentice, D.A. (1998). Exposing pluralistic ignorance to reduce alcohol use among college students. *Journal of Applied Psychology*, 28(23), 2150-2180.
- Seal, D.W. & Palmer-Seal, D.A. (1996). Barriers to condom use and safer sex talk among college dating couples. *Journal of Community and Applied Social Psychology*, 6, 15-33.
- Sikkema, K.J., Winett, R.A., & Lombard, D.N. (1995). Development and evaluation of an HIV risk reduction program for female college students. *AIDS Education and Prevention*, 7, 145-159.
- Simkins, L.D. (1994). Update on AIDS and sexual behavior of college students: Seven years later. *Psychological Reports*, 74, 208-210.
- Tashakkori, A. & Thompson, V.D. (1992). Predictors of intention to take precautions against AIDS among Black college students. *Journal of Applied Social Psychology*, 22, 736-753.
- Turner, S.M., McCanna, M., & Beidel, D.C. (1987). Validity of the Social Avoidance and Distress and Fear of Negative Evaluation scales. *Behaviour Research and Therapy*, 25(2), 113-115.
- Vorauer, J.D. & Ratner, R.K. (1996). Who's going to make the first move? Pluralistic ignorance as an impediment to relationship formation. *Journal of Social and Personal Relationships*, 13(4): 483-506.
- Watson, D. & Friend, R. (1969). Measurement of social evaluative anxiety. *Journal of Counseling and Clinical Psychology*, 33(4), 448-457.
- Wheeler, S. (1961). Role conflict and correctional communities. In D.R. Cressy (Ed.) *The Prison: Studies in Institutional Organization and Change*. New York: Holt, Rinehart, and Winston, 274-298.

Winter, L. (1988). The role of sexual self-concept in the use of contraceptives. *Family Planning Perspectives*, 20, 123-127.

