

PREGNANCY HISTORY, SOCIAL IMAGES, AND (LACK OF) CONDOM USE AMONG
AFRICAN AMERICAN ADOLESCENTS AND YOUNG ADULTS

by

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(Under the Direction of Ronald L. Simons)

ABSTRACT

Using a sample of African American adolescents and young adults, the present study assesses the relationship between pregnancy history and risky sexual behavior, particularly lack of condom use during sex. Changes in the desire for pregnancy, use of the birth control pill, and prototypical perceptions of pregnant peers are assessed for their potentially mediating roles. Results suggest that perceptions of pregnant peers as well as perceptions of the self in relation to those peers change as a function of pregnancy history. Further, these changes in social images attenuate the effect of birth on females' willingness to engage in condomless sex. Both the direct effect of pregnancy history on condom use behavior and the role of social images in mediating this relationship differ by respondent gender.

INDEX WORDS: condom use, adolescence, teen pregnancy, pregnancy history, social comparison, prototype perceptions

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I. INTRODUCTION

Recent research in the health sciences has found a relatively consistent relationship between pregnancy history and condom-use behavior, such that previously pregnant teens and young adults tend to use condoms less consistently than their never-pregnant peers (Cartmill and Bromham 1996; Kalmuss 1986; Paukku, Quan, Darney, and Raine 2003). Despite the lack of nuance in our understanding of this relationship and the many methodological flaws in the studies documenting it, this finding has left public health officials concerned about the risk of repeat pregnancies as well as the spread and/or contraction of sexually transmitted infections (STIs) among this already at-risk group of young people. This concern, however, has not translated into an empirical investigation of the processes that may account for less vigilant condom use among previously pregnant adolescents and young adults, ultimately leaving such processes to speculation.

As part of this speculation, some researchers have proposed that previously pregnant adolescents are less likely than their never-pregnant peers to use condoms consistently due to their greater likelihood of using hormonal methods of birth control post-pregnancy (Cartmill and Bromham 1996; Lemay, Cashman, Elfenbein, and Felice 2007; Truong, Kellogg, McFarland, Kang, Darney, and Drey 2006). Others, however, have suggested that a pregnancy changes condom-use behavior by affecting the perceived costs associated with another pregnancy (Clemmens 2003; Groat, Giordano, Cernkovich, Pugh, and Swinford 1997; Seamark and Lings 2004). Also implied by many of the above studies is the possibility that the process whereby a pregnancy affects future condom-use behavior differs by pregnancy outcome. Although such hypotheses seem plausible, none have been properly tested.

The current study aims to increase our understanding of the relationship between pregnancy history and condom use by not only testing the potential processes proposed above but also by testing an alternative, yet not necessarily competing, process suggested by recent research on the predictive power of social images, or prototypes (e.g. Gerrard, Gibbons, Houlihan, Stock, and Pomery 2008; Gibbons and Gerrard 1997; Thornton, Gibbons, and Gerrard 2002). In an attempt to better understand how a pregnancy, and particularly its resolution, affects young people's lives, this paper addresses several key questions: First, how do perceptions of pregnant peers (i.e. pregnancy prototype) change as a function of pregnancy history? Second, how does pregnancy history affect a person's perceived similarity to this prototype? Third, independent of prior behavior and the general propensity for risk-taking, how does pregnancy history affect the likelihood of engaging in unprotected, or condomless, sex? Fourth, do previously proposed variables, specifically the desire for pregnancy and the likelihood of using hormonal birth control methods, mediate the relationship between pregnancy history and condomless sex? Fifth, do changes in prototype perceptions and perceived similarity to these prototypes mediate the relationship between pregnancy history and condomless sex? Lastly, how do these processes differ for young men and women?

Addressing such questions may help to spur discussion about and further research into the potential processes by which pregnancy history influences sexual behavior. It is well known that one of the primary risk factors associated with both adolescent pregnancy and the spread of STIs is condomless sex (Gallo, Steiner, Warner, Hylton-Kong, and Figueroa 2007; Holmes, Levine, and Weaver 2004). Previous research examining pregnancy history and its relation to risky sexual behavior, however, has largely left family planning providers and STI prevention coordinators in the dark, as it has produced incomplete and thus largely uninformative results.

On a theoretical level, then, understanding this relationship may help to explicate the processes that induce potentially risky behavioral changes throughout the life-course. On a practical level, understanding this relationship could help to inform family planning providers and prevention/intervention coordinators of potentially more effective ways of preventing the spread of STIs and rapid repeat pregnancies among young people. Further, because the prevalence and effects of both unprotected sex and adolescent pregnancy are racialized such that African American adolescents and young adults experience higher rates of pregnancy, birth, abortion, and STIs than any other racial group in the United States (Alan Guttmacher Institute 2006; Centers for Disease Control and Prevention 2008), the all African American sample utilized here may be of particular practical importance. Although a racially homogenous sample precludes comparison among racial groups, such a sample allows us to gain an in-depth understanding of a phenomenon that disproportionately affects African Americans.

II. LITERATURE REVIEW

Pregnancy History and Condom Use

Research assessing the link between pregnancy history and adolescent sexual behavior, particularly unprotected sex, has been scarce. The research that does exist, most of which is located within the medical or health sciences, has established a consistent and significant relationship between pregnancy history and young people's expected and/or actual engagement in unprotected sex. Nevertheless, current understanding of this relationship lacks nuance. For instance, Kalmuss (1986) found that ever-pregnant adolescents were less likely than never-pregnant adolescents to use any form of contraception, including condoms. Other studies, however, have paid particular attention to subgroups within the ever-pregnant category. A study by Schneider and Thompson (1976), for example, found that persons seeking repeat abortions were unlikely to use any form of contraception. In a study assessing the contraceptive intentions of young women who requested the termination of a pregnancy, however, Cartmill and Bromham (1996) found that although respondents in their sample intended to increase their contraceptive usage after their abortion, their intentions to use condoms decreased.

Two other studies, one by Paukku, Quan, Darney, and Raine (2003) and one by Truong et al. (2006) supported Cartmill and Bromham's conclusion by showing that adolescents with previous abortions were more likely than their never-pregnant peers to use hormonal contraception over condoms, especially if they used a condom at the time of conception. Paukku et al. (ibid.) further reported that those who gave birth were less likely than their never-pregnant peers to use condoms consistently, and this finding has been supported elsewhere in the literature

(Crittenden, Boris, Rice, Taylor, and Olds 2009; Kalmuss 1986; Schneider and Thompson 1976).

The effect of miscarriage on sexual behavior has largely been ignored not because it is of less substantive interest but because obtaining large groups of young people who have experienced a miscarriage has proved to be a difficult task (e.g. Hope, Wilder, and Watt 2003; Maker and Ogden 2003).

These few studies that have assessed the relationship between pregnancy history and condom use have implied two primary mechanisms for understanding this relationship. First, as mentioned above, researchers have suggested that a pregnancy or pregnancy scare may cause adolescents to switch from barrier methods to hormonal methods, which are often considered to be more effective in preventing pregnancy (Darney, Callegari, Swift, Atkinson, and Robert 1998; Pauku, Quan, Darney, and Raine 2003; Truong et al. 2006). Findings such as these suggest that these young people may place a higher premium on preventing another pregnancy than on preventing the contraction or spread of STIs/HIV.

The second mechanism through which pregnancy history has been proposed to influence sexual behavior is by affecting the perceived costs associated with pregnancy. As mentioned above, some research suggests that ever-pregnant teens are less likely than their never-pregnant peers to use any contraception (Kalmuss 1986; Schneider and Thompson 1976), including condoms. This may be because ever-pregnant adolescents perceive different costs than their never-pregnant peers of a pregnancy and therefore may be more or less likely to engage in condomless sex. For instance, because adolescents who experienced an abortion or miscarriage have largely escaped the social costs of teenage childbearing, they may be less likely to use traditional contraceptives and to rely upon abortion or miscarriage to evade the parenting role (Wang, Yan, and Feng 2004). Alternatively, because parenting can be a positive experience

(Clemmens 2003; Seamark and Lings 2004), the birth of a child may increase the desirability of another pregnancy, or at least reduce the costs involved. Because of racial disparities in economic and community resources, this may be especially true of African American adolescents when compared to their white counterparts (Burton 1990; Edin and Kefalas 2005). Despite the significance of such propositions for informing prevention and intervention efforts, neither of these mechanisms (i.e. switching from barrier methods to hormonal methods or altering the perceived costs of pregnancy) has been empirically examined for its ability to mediate the relationship between pregnancy history and sexual behavior.

Limitations of Past Research

Although suggestive, the above research suffers from several methodological flaws. For instance, past research has largely garnered samples from family planning clinics, and thus may have limited the variability in both its independent and dependent variables. It is plausible that adolescents who attend family planning clinics may be more careful about using contraception, may be more likely to use one form of contraception over another (e.g. hormonal methods over condoms), or may be more likely to have had a pregnancy scare or past pregnancy.

Related to this issue of sampling bias is the tendency to exclude young men in analyses of pregnancy and condom use despite research noting the pregnancy of a partner as generative of behavioral changes in the lives of young men (e.g. Moloney, MacKenzie, and Hunt 2009; Reich 2008; Reich and Brindis 2006). The absence of men from such studies is not surprising given the cultural association of reproduction and pregnancy with the female body and the familiar feminist assertion that the maintenance of hegemonic social norms requires the control of female sexuality (e.g. Chesney-Lind 1989; hooks 1984; Smart 1995). Although it is possible that past studies have excluded men because of the potential lack of certainty in men's pregnancy histories

compared to women's, pregnancy outcomes of which men are unaware should not be expected to influence their perspectives or behavior in any significant way. Hence, to reduce these problems of sampling bias, the present study includes male respondents and uses a probability sample from an ongoing longitudinal study.

A second flaw of past research on pregnancy history and its subsequent effects on sexual behavior has been researchers' tendencies to either lump all pregnancies together or to focus on only one pregnancy outcome, typically either abortion or birth. Kalmuss (1986) and Bond, Lavelle, and Lauby (2002), for example, compared the contraceptive behaviors of ever-pregnant and never-pregnant teenagers. Truong and colleagues (2006) and Cartmill et al. (1996) assessed the contraceptive intentions of adolescent females after they have ended their pregnancy via abortion, whereas Lemay et al. (2007) limited their sample to adolescent mothers. Restricted samples such as these make comparisons across groups of adolescents with differing pregnancy histories difficult. In an attempt to avoid these limitations, the current study explores condom use among four groups of sexually active adolescents: (1) those who have experienced a miscarriage, stillbirth, or early infant death, (2) those who have experienced an abortion, (3) those who have experienced a birth, and (4) those who have never experienced a pregnancy.

Third, much research on adolescent pregnancy history has focused on contraceptive intentions rather than actual behavior (e.g. Cartmill and Bromham 1996; Lemay, Cashman, Elfenbein, and Felice 2007; Truong et al. 2006). While it is important to understand adolescents' intentions, past research has shown that contraceptive intentions do not consistently predict contraceptive behavior, and further, that intentions may vary from day to day (Kiene, Tennen, and Armeli 2008). A better predictor of sexual behavior has been shown to be an individual's willingness rather than his or her intentions to engage in the behavior. For instance, Gerrard and

Warner (1990) found that women's willingness to take contraceptive risks better predicted their likelihood of pregnancy than did their intentions to get pregnant. Gerrard et al. (2008) make clear the distinction between willingness and intentions/expectations when they argue that "adolescent health risk behavior is usually volitional, but is often not planned or even intentional...rather...much of it is a reaction to common risk-conducive situations" (35-36). That is, although young people often lack the intentions to engage in a particular behavior, they may be willing to do so given the proper circumstances. Keeping in mind the distinction between intentions and willingness and the ability of willingness to better predict behavior, the present study assesses the relationships between pregnancy history and both condom-use behavior and situational willingness to engage in sex without a condom.

The fourth and perhaps most significant methodological flaw indicative of past research has been the failure of researchers to incorporate social variants into their analyses and to examine the potential processes by which pregnancy history impacts sexual behavior. For instance, in the abortion literature, researchers have shown that an adolescent's decision to end a pregnancy or to carry it to full-term is somewhat dependent upon her educational attainment, attachment, and aspirations (Coleman 2006; Farber 1991), religiosity (Adamczyk 2008; Murry 1995), drinking and drug use behavior (Hope, Wilder, and Watt 2003), and living arrangements (Adamczyk 2008), among other things. Because these variables have also been shown to impact adolescents' sexual behavior, specifically patterns of condom use (Kiene, Tennen, and Armeli 2008; Kogan, Brody, Gibbons, Murry, Cutrona, Simons, Wingood, and DiClemente 2008; Orr, Langefeld, Katz, Caine, Dias, Blythe, and Jones 1992; Parkes, Wight, Henderson, and Hart 2007), failing to include them in past models may have led us to misconstrue the effect of pregnancy history on sexual behavior. Moreover, past researchers have hypothesized several

variables that may account for the relationship between pregnancy history and contraceptive practices, yet as mentioned above, these variables have not been adequately incorporated into statistical models. The failure to control for important variables and to test the proposed mechanisms through which pregnancy history influences sexual behavior is indicative of the atheoretical nature of past research, most likely due to its relative isolation in the field of medical science.

The present study not only employs variables often found in sociological/psychological literature as controls but also includes previously proposed variables, specifically the likelihood of using hormonal birth control methods and the desire for pregnancy, as potential mediators of the relationship between pregnancy history and condom use. Furthermore, by integrating the traditional health science approach to understanding sexual behavior with a more sociological approach, this study tests a social psychological process by which pregnancy history may influence risky sexual behavior. Both the theoretical motive for implementing this study and the theoretical foundation upon which to interpret its results are expanded upon below.

III. THEORY AND HYPOTHESES

Prototype Perceptions and Social Comparison

As mentioned above, this paper incorporates prototype perceptions and a measure of social comparison into the study of pregnancy and sexual behavior in two ways. First, it assesses how pregnancy history predicts (1) favorable perceptions of pregnant peers and (2) perceptions of similarity to those peers. Then, it tests whether or not these changes social images mediate the relationship between pregnancy history and sexual behavior. A review of the literature found that no study has assessed either of these relationships empirically despite theoretical and empirical evidence that both prototypes and perceived similarity to these prototypes may change as a result of pregnancy outcome and may at least partially account for the relationship between pregnancy history and sexual behavior, particularly condom use.

In the health behavior literature, a prototype is typically understood as the cognitive image an individual possesses of a particular behavior and/or of the type of person who engages in that behavior (Gibbons and Gerrard 1995; Thornton, Gibbons, and Gerrard 2002). As Blanton et al. (2001) point out, the measurement and use of prototypes is premised on the assumptions that “people have clear images of the types of people who engage in different behaviors” and that “they understand that they themselves can become associated with these images through their actions” (275). Prototypes are thought to affect behavior not through a reasoned, intentional process but through an image-based, social reaction process, although, as Gerrard et al. (2008) point out, these processes often operate simultaneously. It is assumed that the more favorable an individual’s image (or prototype) of a person engaging in a particular behavior, the more willing

and more likely that individual will be to engage in the behavior. This assumption has been empirically supported in the study of several risk behaviors, including smoking, drinking, and reckless driving (Gibbons and Gerrard 1995; Gibbons and Gerrard 1997).

The current study focuses on prototype perceptions of pregnant peers since it is concerned with lack of condom use, a behavior closely associated with and predictive of pregnancy among adolescents (Kirkman, Rosenthal, and Smith 1998). Further, as shown in several qualitative studies (e.g. Aquilino and Bragadottir 2000; Herrman 2008), young people's discussions of the role of contraceptives in preventing teen pregnancy typically focus on the use of condoms. Several studies have examined the relationship between pregnancy prototype perceptions and the willingness to engage in condomless sex as well as actual sexual behavior. Using two different samples of adolescents, Gibbons, Gerrard, and Boney McCoy (1995) found that respondents' prototype perceptions of pregnant peers predicted their willingness to engage in condomless sex in the expected direction. Similarly, using a sample of young adults, Thornton, Gibbons, and Gerrard (2002) showed that prototype perceptions predicted not only respondents' willingness to engage in condomless sex but also their actual sexual behavior six months later. Thornton, Gibbons, and Gerrard (*ibid.*) also established a link between prototype perceptions and risky behavior independent of risk perceptions, a finding that illustrates the predictive power of social images.

Despite these important findings, studies documenting the link between prototypes and willingness/behavior often do not control for such things as respondents' propensity toward risk taking, level of self-control, and commitment to the "code of the street" (Anderson 1999), all of which are plausible antecedents to both favorable prototypes and risk-taking behavior. Such controls may be especially important when studying racialized phenomena such as pregnancy

and sexual behavior. For example, although not the focus of his ethnographic study of inner-city black adolescents living in Philadelphia, Anderson (1999) documented that young, unmarried men who fathered children were often rewarded according to the “code of the street.” Further, prototype perceptions have been associated with individual temperament and poor self-control such that those with low self-control tend to view risky behaviors more favorably (Gerrard et al. 2008; Wills, Sandy, and Yaeger 2000). The present study overcomes this limitation by including indices of risk-taking tendency, poor self-control, alcohol and marijuana use, and commitment to the street code in all models to help ensure that changes in social images, willingness, and actual behavior are the result of pregnancy outcome and not the result of changes in respondents’ general affinity for risk-taking.

An important discovery in risk behavior and prototype research has been that “changes in prototype perceptions are associated with changes in related behaviors” (Gibbons, Gerrard, and Boney McCoy 1995:86), or that prototypes and their effects on behavior are not static. For instance, some studies have found that prototypes are predictive of intentions/willingness to engage in a particular behavior (e.g. smoking), actually engaging in that behavior, and cessation from engaging in the behavior such that a change in prototype precedes a change in behavior (Gerrard, Gibbons, Stock, Vande Lune, and Cleveland 2005; Gibbons and Gerrard 1995). Likewise, as Gibbons and Gerrard (1995) have demonstrated, a change in behavior can also predict a change in prototype perceptions as social images become more aligned with the self-image, ultimately indicating a gradual, reciprocal relationship between changing social perceptions and changing behavior. What is less clear, however, is how social images may change as a result of a specific event rather than a gradual change in behavior. The present study addresses this issue and provides further insight into the fluidity of social images by examining

how certain pregnancy histories predict changes in social perceptions and, further, how these changing perceptions of others and of oneself in relation to others account for changes in sexual behavior. Hence, in conjunction with past research, prototypes are viewed as being both proactively and reactively related to behavior.

Although powerful, prototypes alone may be limited in their ability to predict risk behavior given individual differences in the influence of social images. In particular, as suggested by social comparison theory (Festinger 1954), it has been proposed and somewhat supported that the extent to which prototypes influence behavior is affected by differing levels of social comparison (Gibbons and Gerrard 1997). For instance, prototypes will better predict behavior among those youth who frequently compare themselves with their peers. Social comparison among adolescents, however, is common and hence often lacking in variability (Bixenstine, DeCorte, and Bixenstine 1976). Nevertheless, this does not preclude the importance of social comparison as individual differences in the direction of the comparison still remain. That is, comparison may be biased toward finding similarity or toward finding difference. It is expected, then, that the degree of similarity combined with the favorability of social images will predict risky behavior better than prototypes alone, such that “the combination of a relatively favorable or acceptable image with perceived similarity to the self is likely to translate into willingness to do the behavior and, eventually, into the behavior itself” (Gibbons and Gerrard 1997:84).

Pregnancy History and Changes in Prototype Perceptions

In describing the relationship between prototypes and a person’s self conception, Gibbons and Gerrard (1997) write that:

Although prototypes are frequently based in reality and experience, they are nevertheless cognitive constructions. As such, their formation is subject to idiosyncrasies and biases that often reflect an underlying motive. Frequently that motive involves protection of self-esteem (65).

In other words, in order to present the self in a positive light and preserve self-esteem, people tend to view a prototypical image more favorably if they view themselves as having similar characteristics. The notion of self-preservation is found throughout the social psychological literature, for instance in both affect control theory (Heise 2007) and identity control theory (Burke 2006). As mentioned above, prototypical images and behaviors appear to affect one another in a reciprocal manner, a manner that maximizes self-esteem and/or boosts the self-image by minimizing the discrepancy between the favorability of a prototype and the perception of the self. It is important to note, however, that the move toward maximizing self-esteem is often not deliberate, as the process of social comparison is typically an automatic, unconscious one (Festinger 1954; Tesser 2007).

Because adolescents and young adults often underestimate the risk of pregnancy associated with unprotected sex (Stevens-Simon, Kelly, Singer, and Cox 1996; Stevens-Simon and McAnarney 1996), the experience of becoming pregnant or of getting someone pregnant may expose an incongruity between young people's self-image and their prototypical perceptions of pregnant peers. Further, because pregnancies have several possible outcomes and each outcome is associated with differing levels of social consequences and/or social visibility, it is plausible that the particular outcome of a pregnancy and not simply becoming pregnant predicts unique changes in social images. For instance, those who experience an abortion or miscarriage may attempt to separate themselves from their pregnant peers by viewing them more negatively

than before. On the other hand, because an abortion or miscarriage may allow one to largely escape the social stigma of teenage childbearing, a change in prototype perceptions may not be necessary to maintain self-esteem. Carrying a pregnancy to term and giving birth, however, is highly socially visible and may expose a more obvious and less easily restored discrepancy between the self-image and the prototypical image of pregnant peers, ultimately causing a change in prototypes to better align them with the personal and social identity. Hence, keeping in mind the “self-serving bias” of prototype constructions (Gibbons and Gerrard 1997:69), pregnancy history is expected to predict changes in prototype perceptions in the following manner:

Hypothesis 1: Compared to their never-pregnant peers, those who give birth will increase the favorability with which they view pregnant peers.

Hypothesis 1b: Compared to their never-pregnant peers, those who have an abortion or experience a miscarriage will decrease the favorability with which they view pregnant peers.

Pregnancy History and Changes in Perceived Similarity to Prototypical Peers

Because of the aforementioned tendency toward self-preservation, hypotheses concerning changes in perceived similarity to prototypical peers mimic those for changes in prototype perceptions. It is assumed that the preservation of self-esteem is maximized when prototype perceptions and similarity perceptions complement one another, as when a favorable image of pregnant peers is combined with perceived similarity to those peers. Hence, the following hypotheses are derived:

Hypothesis 2: Compared to their never-pregnant peers, those who give birth will experience an increase in perceived similarity to pregnant peers.

Hypothesis 2b: Compared to their never-pregnant peers, those who experience an abortion or miscarriage will experience a decrease in perceived similarity to pregnant peers.

Pregnancy History and Condom Use: Potential Pathways

The present study assesses two potential pathways through which pregnancy history may affect risky sexual behavior and a person's willingness to engage in such behavior. First, it examines whether or not previously proposed variables, specifically the likelihood of using hormonal contraception and the desire for pregnancy, mediate the relationship between pregnancy history and both respondents' willingness to engage in condomless sex and their actual engagement in condomless sex. Second, based on the reciprocity between changes in prototypes and changes in behavior, it examines the mediating role of prototype perceptions and perceived similarity in explaining the relationship between pregnancy history and condom use.

One must keep in mind that these processes are not necessarily competing, as changes in prototypes may be associated with changes in both the desirability of pregnancy and the use of hormonal methods of birth control. For instance, it is plausible that an increase in the favorability of pregnancy prototypes, as is expected among those respondents whose pregnancy ended in birth, may increase the desirability of another pregnancy, or reduce the perceived costs involved. Similarly, the switch from barrier methods to seemingly more effective hormonal methods of birth control may very well be associated or even precipitated by a change in social images, such that a decrease in the favorability of a person's pregnancy prototype increases the likelihood of using hormonal birth control pills and hence decreases the likelihood of using condoms. This possibility may explain why past aborters may be less likely than their never-pregnant peers to use condoms despite the hypothesized decrease in prototype favorability and perceived

similarity. Based on the research and propositions discussed above, the following hypotheses are derived.

Hypothesis 3: Desire for pregnancy and the use of hormonal birth control methods will at least partially mediate the relationship between pregnancy history and condom use.

Hypothesis 4: After controlling for desire for pregnancy and the use of hormonal birth control methods, social images and perceived similarity to those images will at least partially mediate the relationship between pregnancy history and condom use.

Gender, Pregnancy History, and Social Images

Gender has not been a central point of analysis in the prototype literature. To the extent that it has been considered, it was usually treated only as a control variable. A few studies that examined gender in more detail, however, have found some evidence that gender moderates the effect of social images on behavior. For instance, Gibbons and Gerrard (1997) reported an unexpected finding that prototype perceptions and perceived similarity were better predictors of smoking and drinking behavior among their male subjects than among their female subjects. As Gibbons and Gerrard (ibid.) reported, an earlier study by Brown, Clasen, and Eicher (1986) also supported the notion that male participation in such behavior as drinking, smoking, and using drugs may be influenced by social images more so than female participation. Somewhat contrary to these findings, however, was Rankin, Lance, Gibbons, and Gerrard's (2004) finding that young women engage in greater levels of social comparison, place greater importance on others' perceptions of themselves, and score higher on self-consciousness than do their male counterparts.

The discrepancy between the above findings suggests that particular types of social images may impact young men and women differently. For instance, the aforementioned

behaviors of smoking and drinking are generally-deviant behaviors, and hence, prototypes of these behaviors may indeed predict male behavior more strongly than female behavior. Sexual activity and pregnancy, however, are clearly gendered in their cultural associations and consequences. For instance, feminists have long asserted that there is a double standard applied to male and female sexual behavior, have criticized the social role of women as primary caregivers, and have claimed that women cannot escape the cultural expectation that they are or will become mothers (Belknap 2007; Chesney-Lind 1989; Chesney-Lind and Pasko 2004; Smart 1995). Therefore, while prototype perceptions may play a larger role in predicting generally-deviant behavior among males than among females, prototype perceptions directly concerned with pregnancy may better predict female behavior than male behavior. Likewise, because women are those whose bodies actually become pregnant and experience the outcome of that pregnancy, pregnancy history may be a stronger predictor of prototype and similarity changes among females than among males. These hypotheses are reiterated below.

Hypothesis 5: The extent to which pregnancy history will predict changes in prototype perceptions and perceived similarity will differ by gender such that pregnancy history will exert a greater influence on young women than on young men.

Hypothesis 6: The extent to which pregnancy history will predict changes in willingness to engage in condomless sex along with actual engagement in condomless sex will differ by gender such that pregnancy history will exert a greater influence on young women than on young men.

Hypothesis 7: Prototype perceptions and perceived similarity will more fully mediate the effect of pregnancy history on both willingness and behavior for young women than for young men.

IV. DATA AND METHODS

Sample

The current study is part of a broader, ongoing longitudinal research project, the Family and Community Health Study (FACHS), which examines the social, psychological, and contextual risk and protective factors associated with African American families' health and wellbeing (see Gibbons, Gerrard, Cleveland, Wills, and Brody 2004; Simons, Lin, Gordon, Brody, Murry, and Conger 2002 for a detailed description of sampling procedures). In brief, a total of 867 African American families from Iowa and Georgia participated in the first wave of data collection in 1997. After the IA and GA samples were deemed comparable on demographic and family processes variables, the two samples were combined. Because the current study focuses on pregnancy and sexual behavior, it utilizes target data from the third and fourth waves of FACHS, when the target youth were in late-adolescence and early adulthood. Of the 867 target youth interviewed at wave 1, 714 remained in the study at wave 4 (82.35%).

Respondents who reported never having had sex by wave 4 of the study were removed from the current sample due to their inability to report on condom-use behavior. Further, in an effort to limit the variability in the timing of respondents' pregnancies, those respondents who reported having had multiple pregnancies of self or partner and those whose pregnancy occurred prior to wave 3 were also dropped from the sample. Other respondents were excluded if they failed to provide complete information on all variables of interest. The final sample consists of 456 sexually active respondents (241 females and 215 males) who, if they had experienced the pregnancy of themselves or their partner, experienced that pregnancy and its resolution between waves 3 and 4 of the FACHS study, typically during late adolescence. Although this reduction in

sample size may introduce some degree of selection bias and necessarily restricts the cell sizes of the pregnancy history groups, it is a necessary sacrifice in order to ensure the accuracy and comparability of pregnancy histories. Further, this sacrifice is partially offset by the quality and breadth of the data.

Dependent Variables

Pregnancy Prototype. Pregnancy prototype perceptions were assessed at wave 4 via a three-item index. Respondents were asked: “The type of unmarried girl/boy your age who gets pregnant, how cool are they?” “How popular are they?” and “How smart are they?” Same-sex referents were used. Responses ranged from (1) not at all to (4) very much and were averaged across items to form the index. Higher values indicate a more favorable prototype. Pregnancy prototype was also assessed via the same questions at wave 3 and was controlled for in models assessing change in prototype perceptions. Cronbach’s alphas at waves 3 and 4 were .78 and .84, respectively.

Similarity to Prototypical Pregnant Peer. Similarity to prototypical pregnant peers was assessed at wave 4 via the following question: “How similar do you think you are to the type of unmarried girl/boy your age who gets pregnant/gets a girl pregnant?” Same-sex referents were used. Responses ranged from (1) not at all to (4) very much. Because so few respondents reported that they were “very much” like the prototypical pregnant peer, the top two categories were collapsed, resulting in a 3-level ordinal variable. Similarity was also assessed via the same question at wave 3 and was controlled for in models assessing change in perceived similarity.

*Condom-Use Behavior*¹. In wave 4, respondents were asked, “When you have sex, how often do you use a condom?” Responses consisted of four ordered categories ranging from “Never” to “Always.” Because so few respondents reported never using a condom, the bottom two categories (“Never” and “Sometimes”) were collapsed, resulting in a 3-level ordinal variable with higher values indicating more consistent condom use. Condom-use behavior was assessed via the same question in wave 3 and was controlled for in regression analyses predicting condom use at wave 4.

Willingness to Engage in Condomless Sex. This dimension of sexual behavior was assessed with the following question at wave 4: “Suppose you were alone with your boy/girl friend. He/she wants to have sex, but neither of you has a condom. In this situation, how willing would you be to go ahead and have sex?” Respondents who indicated that they would be “not at all” willing to engage in sex without a condom were coded “0” to represent a complete lack of willingness. Those who reported being “kind of” or “very” willing to engage in sex without a condom were coded “1,” resulting in a dummy-coded variable with 1 indicating willingness to engage in unprotected sex. Willingness was also assessed via the same question at wave 3 and was controlled for in regression analyses predicting willingness at wave 4.

¹ An assessment of condom use (or lack thereof) clearly does not provide an accurate assessment of risky sexual behavior. Because condoms continue to be the most common birth control method among adolescents and young adults (AGI 2008), however, and are the only contraceptive method to guard against STIs and HIV, measuring condom use allows one to obtain a baseline level of risk which can be expanded upon through further research.

Independent Variables and Controls

Pregnancy History. Information about respondents' pregnancy histories was gathered via several survey questions. Only those respondents who reported ever having sexual intercourse by wave 4 were asked the questions about pregnancy and its outcome. The following categorizations are based on wave 4 responses after those who reported multiple pregnancies or a pregnancy prior to wave 3 were removed. Respondents were coded as never having been pregnant/gotten a girl pregnant if they responded "no" to ever having been or gotten someone pregnant. Respondents were coded as having had an abortion if they answered yes to the following question, "Have you/has a girl that you have gotten pregnant ever had an abortion?" Respondents were coded as having had a miscarriage if they responded yes to the following question, "Have you ever had a miscarriage, a stillbirth, or a child who died?" Respondents who reported that they currently had biological children were coded as having had a pregnancy that ended in a live birth. The reference category in all analyses is the majority group, those who have not experienced a pregnancy.

Desire for Pregnancy. Respondents were asked "If you got pregnant/got a girl pregnant now, how would you feel?" Responses ranged from (1) I would be very upset to (5) I would be very pleased. This variable is used as a proxy for the costs associated with a pregnancy or with a repeat pregnancy for those who have previously been pregnant. It is assumed that those who express being pleased with another pregnancy perceive fewer costs than those who express being very upset.

*Likelihood of Using Pill*². Respondents were asked “If you had sex in the next year, do you think that you and your partner would use the pill?” Responses ranged from (1) definitely not to (5) definitely yes, and thus, high values indicate a greater likelihood of using the birth control pill.

Control Variables. In all analyses, the following variables are controlled for: age, whether or not the respondent was enrolled in school, whether or not the respondent lives with his/her childhood family, household income (measured in 10K increments), religious involvement (Cronbach’s alpha = .84), friends’ reinforcement of deviance (Cronbach’s alpha = .85), alcohol and marijuana use (Cronbach’s alpha = .72), risk-taking tendencies (Cronbach’s alpha = .85), poor self-control (Cronbach’s alpha = .62), and commitment to the street code (Cronbach’s alpha = .76).

Plan of Analysis

To assess the relationships between pregnancy history, prototype perceptions, and condom use, three different types of analyses are employed³. First, ordinary least square (OLS) regression is used to assess changes in prototype perceptions of pregnant peers. Then, ordinal regression is employed to assess changes in perceived similarity to prototypical peers. Third, logistic regression is used to assess changes in situational willingness to engage in unprotected

² Although this measure does not take into account other hormonal forms of birth control, the pill is by far the most common hormonal contraceptive method used by adolescents and young adults (AGI 2008). Information on other hormonal methods of birth control was not available via wave 4 of FACHS, a limitation that must be addressed in future studies.

³ In all analyses, wave 3 assessments of the dependent variable are controlled. Essentially, this means that independent variables in each model are predicting the change in the dependent variable from wave 3 to wave 4. For a detailed explanation, see Cohen and Cohen (1983), and for an example of how this approach has been used elsewhere, see Allen et al. (2002).

sex. Finally, ordinal regression is utilized again to assess changes in actual condom-use behavior.⁴ For analyses predicting prototype and similarity changes, two regression equations are presented, first entering only control variables and then adding pregnancy history variables. For both the logistic regression model predicting situational willingness and the ordinal regression model predicting condom-use behavior, four regression equations are presented. First, a baseline model with only controls is presented. This is followed by a model which adds in the pregnancy history variables. Two final models, one testing the mediating role of previously proposed variables and another testing the mediating roles of prototype perceptions and perceived similarity, are presented. Significant gender differences were assessed by estimating fully interactive models in which all predictors were interacted with gender. In subsequent analyses, models in which gender differences were found to be even moderately significant ($p < .10$) are separated by respondent gender, with significant differences noted in each table. For simplicity,

⁴ Although it is possible to compare regression coefficients across groups in OLS regression, problems arise when trying to compare logit or ordinal coefficients across groups. As Allison (1999) points out, perceived differences in coefficients may actually be due to differences in residual variances. To ensure that this was not the case, Williams' (2009) suggestions were followed in that the logistic and ordinal analyses were redone for the full sample utilizing heterogeneous choice models. In these models, respondent gender was entered into the error variance equation to examine whether or not error variance differed significantly for males and females. Gender, however, was not significant in either the logit or the ordinal error variance equation, indicating that differences in coefficients are not due to differences in error variances. Thus, gender differences in both the logit and ordinal coefficients can be interpreted as indicating real differences just as they are in OLS models.

those models in which no gender differences in the effect of any variable were found are presented for the full sample⁵

⁵ Before discussing the results, a few caveats are in order. First, potential multicollinearity between independent variables was assessed with variance inflation factors in OLS regression prior to conducting all analyses. All variance inflation factors were well below Fisher and Mason's (1981) recommended cutoff of 4.0. Furthermore, no unexpected or suspicious changes in coefficient standard errors were found across equations, providing another indicator that multicollinearity was not affecting regression results. Second, the regression assumption of uncorrelated error terms was assessed by plotting residual and predicted values in a scatterplot. When no indication of heteroscedasticity was found, no further tests were conducted. Lastly, Brant tests were conducted in all ordinal models to ensure that the parallel regression assumption was met, or that the effect of predictor variables did not vary significantly across thresholds of the dependent variable. As indicated by insignificant Brant test statistics, the parallel regression assumption was met in all ordinal models.

V. RESULTS

Descriptive Statistics

Table 1 and Table 2 present descriptive statistics and correlation coefficients, respectively, by respondent gender for all variables used in subsequent analyses. The average age of respondents at wave 4 of the study was roughly 18.8 years, meaning that those respondents who experienced a pregnancy did so mostly in late adolescence. The majority of both males and females were either attending school or were planning to attend in the following school year, and a slight majority of both males and females were living with their childhood families. Mean household income was around \$30,000. As indicated in Table 1, males and females differed significantly on many of the control variables, including religious involvement (males = 2.09, females = 2.27; $t = -2.08$, $p < .05$), alcohol and marijuana use (males = 1.21, females = 1.31; $t = -2.11$, $p < .05$), risk-taking tendencies (males = 1.54, females = 1.44; $t = 2.19$, $p < .05$), poor self-control (males = 1.47, females = 1.57; $t = -3.26$, $p < .01$), and commitment to the street code (males = 2.29, females = 2.16; $t = 2.97$, $p < .01$). Compared to their female counterparts, male respondents were more likely to have had sex by wave 3 ($\chi^2 = 23.96$, $p < .01$). Males also reported a greater desire for pregnancy (males = 2.29, females = 1.71; $t = 5.35$, $p < .01$) and more willingness to engage in unprotected sex at both wave 3 and wave 4 (wave 3: $\chi^2 = 15.10$, $p < .01$;

Table 1: Descriptive Statistics by Respondent Gender

Variable	Females				Males				Gender Difference
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	
Age	18.77	0.89	17.00	21.00	18.77	0.88	16.00	21.00	
Attending School	0.70	0.46	0.00	1.00	0.65	0.48	0.00	1.00	
Childhood Family	0.56	0.50	0.00	1.00	0.57	0.50	0.00	1.00	
Family Income (10K)	3.17	2.80	0.00	17.50	2.98	2.54	0.02	13.50	
Religious Involvement	2.27	0.96	1.00	5.00	2.09	0.88	1.00	5.00	X
Friends' Deviance	1.31	0.34	1.00	2.25	1.29	0.34	1.00	2.75	
Alcohol & Marijuana Use	1.31	0.57	1.00	3.00	1.21	0.47	1.00	3.00	X
Risk-taking Tendencies	1.44	0.45	1.00	3.00	1.54	0.56	1.00	3.00	X
Poor Control	1.57	0.35	1.00	2.86	1.47	0.32	1.00	2.43	X
Street Code	2.16	0.46	1.00	3.83	2.29	0.46	1.00	4.00	X
Miscarriage	0.05	0.21	0.00	1.00	0.04	0.19	0.00	1.00	
Abortion	0.06	0.23	0.00	1.00	0.07	0.26	0.00	1.00	
Birth	0.16	0.37	0.00	1.00	0.05	0.22	0.00	1.00	X
Desire for Pregnancy	1.71	1.01	1.00	5.00	2.29	1.33	1.00	5.00	X
Birth Control Pill	3.73	1.51	1.00	5.00	3.51	1.41	1.00	5.00	
Similarity (w3)	1.35	0.64	1.00	3.00	1.37	0.64	1.00	3.00	
Similarity (w4)	1.72	0.83	1.00	3.00	1.73	0.84	1.00	3.00	
Pregnancy Prototype (w3)	2.17	0.77	1.00	4.00	2.22	0.80	1.00	4.00	
Pregnancy Prototype (w4)	2.31	0.79	1.00	4.00	2.37	0.75	1.00	4.00	
Not Sexually Active (w3)	0.60	0.49	0.00	1.00	0.37	0.48	0.00	1.00	X
Condom Use- Inconsistent (w3)	0.10	0.31	0.00	1.00	0.10	0.30	0.00	1.00	
Condom Use- Consistent (w3)	0.29	0.46	0.00	1.00	0.53	0.50	0.00	1.00	X
Condom Use (w4)	2.43	0.79	1.00	3.00	2.60	0.68	1.00	3.00	X
Willingness (w3)	0.13	0.34	0.00	1.00	0.28	0.45	0.00	1.00	X
Willingness (w4)	0.42	0.49	0.00	1.00	0.51	0.50	0.00	1.00	X
N	241				215				

Table 2: Correlation Coefficients by Respondent Gender

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1Age	--	-0.19	-0.23	0.06	-0.23	0.13	0.08	0.09	-0.01	-0.05	0.05	0.03	0.11	0.05	-0.08	0.11	0.09	0.08	0.01	0.07	0.02	-0.13	0.13	0.16
2Attending School	-0.16	--	-0.15	0.13	0.17	0.00	-0.07	-0.14	-0.04	0.06	-0.01	0.02	-0.05	-0.12	0.03	-0.04	-0.10	0.00	-0.06	0.05	-0.09	0.18	0.09	-0.15
3Childhood Family	-0.23	-0.01	--	-0.10	0.04	-0.02	-0.03	-0.17	-0.03	0.07	-0.08	-0.04	0.03	0.04	0.08	0.02	-0.06	0.02	0.04	-0.02	0.05	0.14	-0.04	-0.16
4Family Income	0.02	0.14	-0.10	--	0.01	0.03	-0.02	0.07	0.00	0.10	-0.02	-0.07	-0.07	-0.08	0.01	-0.08	0.08	-0.07	0.00	-0.01	-0.04	0.01	-0.03	0.18
5Religious Involvement	-0.26	0.10	0.06	0.04	--	-0.24	-0.12	-0.11	0.03	-0.07	0.03	-0.09	-0.11	0.00	0.08	-0.25	-0.13	-0.12	0.02	-0.13	0.01	0.13	-0.15	-0.17
6Friends' Deviance	0.27	-0.16	-0.11	0.07	-0.30	--	0.34	0.18	0.09	0.26	0.08	0.11	-0.08	0.06	0.02	0.03	0.11	0.07	0.14	0.21	-0.01	-0.08	0.15	0.18
7Alcohol & Marijuana Use	0.24	-0.03	-0.08	0.19	-0.17	0.30	--	0.15	0.13	0.18	0.15	-0.11	-0.06	0.00	-0.05	0.08	-0.07	0.07	0.17	0.05	0.19	0.04	0.11	0.13
8Risk-taking Tendencies	0.07	-0.02	-0.04	0.14	-0.11	0.28	0.29	--	0.25	0.33	0.12	0.08	0.06	0.12	-0.10	0.02	0.13	-0.03	0.07	0.03	0.08	-0.30	0.07	0.10
9Poor Control	0.07	-0.07	0.01	0.02	-0.13	0.19	0.13	0.17	--	0.22	-0.04	-0.01	-0.15	0.11	-0.19	0.00	0.17	0.08	0.09	0.05	-0.01	-0.18	0.03	0.13
10Street Code	-0.01	-0.12	0.04	-0.02	0.01	0.06	0.10	0.07	0.18	--	0.04	0.11	0.03	0.05	-0.12	0.01	0.11	0.01	0.01	0.08	0.07	-0.13	0.06	0.08
11Miscarriage	0.08	0.01	-0.08	0.02	-0.05	-0.03	0.02	-0.06	-0.05	-0.02	--	-0.06	-0.05	0.14	-0.05	-0.04	0.03	0.07	0.11	0.01	0.14	-0.17	-0.01	0.09
12Abortion	0.09	0.01	-0.10	-0.04	-0.16	0.05	0.15	0.10	0.14	0.00	-0.05	--	-0.07	0.14	0.07	0.09	0.16	0.06	0.02	0.08	0.09	-0.20	-0.06	0.06
13Birth	0.17	-0.06	-0.07	-0.02	-0.04	0.01	0.05	-0.04	-0.01	0.05	-0.09	-0.11	--	0.09	-0.05	0.03	0.02	0.03	0.03	-0.01	-0.08	-0.08	0.04	-0.07
14Desire for Pregnancy	0.11	-0.09	-0.09	0.02	-0.05	0.00	0.07	0.02	0.03	0.14	0.08	-0.05	-0.07	--	-0.17	0.06	0.15	0.23	0.08	-0.03	0.14	-0.21	0.18	0.13
15Birth Control Pill	-0.15	0.09	0.07	-0.09	0.10	-0.11	-0.18	-0.05	-0.02	-0.11	0.01	-0.06	0.00	-0.12	--	-0.01	-0.23	0.03	0.03	0.04	-0.05	0.15	-0.04	-0.16
16Similarity (w3)	0.03	-0.03	-0.08	0.05	-0.02	0.12	0.20	0.03	0.01	0.03	0.04	0.11	0.12	0.03	-0.09	--	0.08	0.27	0.08	0.31	-0.05	-0.04	0.29	0.05
17Similarity (w4)	0.14	-0.04	-0.12	0.11	-0.09	0.06	0.05	-0.09	-0.01	-0.01	0.00	-0.02	0.47	-0.01	0.08	0.22	--	0.09	0.31	-0.07	0.08	-0.26	-0.03	0.20
18Pregnancy Prototype (w3)	0.12	0.03	-0.09	0.17	-0.15	0.13	0.17	0.18	0.00	-0.05	-0.01	0.13	0.03	-0.07	-0.08	0.31	0.04	--	0.14	0.06	0.06	-0.05	0.16	0.02
19Pregnancy Prototype (w4)	0.11	0.05	-0.10	0.12	-0.07	0.13	0.19	0.13	0.04	-0.01	0.06	-0.02	0.16	-0.03	-0.05	0.17	0.35	0.26	--	-0.04	0.22	0.00	0.05	0.19
20Condom Use- Inconsistent (w3)	0.14	0.02	-0.11	0.03	-0.14	0.18	0.28	-0.06	0.02	-0.03	0.06	0.21	0.15	0.11	-0.06	0.20	0.13	0.23	0.06	--	-0.36	-0.11	0.44	0.12
21Condom Use- Consistent (w3)	0.12	-0.13	-0.05	-0.08	-0.01	0.10	0.26	0.10	0.10	-0.01	0.03	0.03	0.00	0.01	-0.09	0.06	0.05	-0.02	0.08	-0.22	--	-0.04	-0.03	0.08
22Condom Use (w4)	-0.18	0.09	0.14	-0.05	0.14	-0.14	-0.18	-0.06	-0.18	-0.05	-0.14	-0.14	-0.21	-0.26	0.17	-0.12	-0.22	-0.04	-0.06	-0.37	-0.02	--	0.03	-0.38
23Willingness (w3)	0.09	-0.01	-0.09	0.13	-0.08	0.17	0.31	-0.06	0.03	0.05	0.03	0.11	0.13	0.07	-0.02	0.15	0.10	0.19	0.07	0.59	-0.12	-0.21	--	0.11
24Willingness (w4)	0.22	-0.04	-0.05	0.03	-0.20	0.19	0.16	0.05	0.19	0.13	0.02	0.15	0.21	0.22	-0.05	0.11	0.25	0.13	0.17	0.32	0.02	-0.49	0.31	--

Note: Correlations for female respondents are below the diagonal while those for male respondents are above the diagonal;
Highlighted cells are significant at .05 level

wave 4: $\chi^2 = 3.91$, $p < .05$). Somewhat contradictory, however, males also reported more consistent condom use than females (males = 2.60, females = 2.43; $t = 2.35$, $p < .05$).

As for pregnancy history variables, the majority of respondents (78.5%) have never experienced a pregnancy. Of those that experienced a pregnancy between waves 3 and 4 of the study, roughly 17% of females and 23% of males reported that their pregnancy ended in miscarriage, stillbirth, or early death ($N=11$ and 8 , respectively), while roughly 22% of females and 46% of males reported that their pregnancy ended in abortion ($N=14$ and 16 , respectively). Again, of those experiencing a pregnancy during the same time period, roughly 60% of females and 31% of males reported that their pregnancy ended in a live birth ($N=38$ and 11 , respectively). These numbers are somewhat consistent with estimates of the general population under age 20 (AGI 2006), but consistency should not be expected because of the narrow time period under investigation and the removal of adolescents who experienced multiple pregnancies from the analyses. Further, differences in the frequencies of pregnancy outcomes by gender may be due to suspected age differences in dating partners. That is, the young women in the study may have gotten pregnant by older male partners and not by those represented in the data.

Changes in Prototype Perceptions and Perceived Similarity

Table 3 presents results from the OLS regression models predicting pregnancy prototype favorability. Because a fully interactive model revealed no significant interactions between gender and any of the independent variables, the models are presented for the full sample. As shown in model 2, pregnancy history significantly predicted a change in pregnancy prototype perceptions, but it did so only partially in the manner suggested. As hypothesized, relative to their never-pregnant peers, respondents who gave birth experienced an increase in their pregnancy prototype favorability. Holding all else constant, those whose pregnancy ended in a

Table 3: Coefficients for OLS Regression Models
Predicting Pregnancy Prototype Favorability

Explanatory Variables	Model 1		Model 2	
Prior Pregnancy Prototype	0.180	***	0.177	***
Female	-0.085		-0.127	
Age	0.012		-0.006	
Attending School	0.012		0.018	
Childhood Family	-0.009		0.001	
Family Income	0.010		0.012	
Religious Involvement	0.037		0.040	
Friends' Reinforcement of Deviance	0.168		0.191	
Alcohol and Marijuana Use	0.192	**	0.182	*
Risk-taking Tendencies	0.071		0.069	
Poor Control	0.053		0.085	
Commitment to Street Code	-0.063		-0.079	
Miscarriage			0.290	
Abortion			-0.033	
Birth			0.308	**
Constant	1.138		1.409	
N		456		
r ²	0.081		0.099	

* p<0.05, ** p<0.01, *** p<0.001 (two-tailed)

live birth had a predicted image of pregnant peers that was .31 points more favorable than that held by their never-pregnant peers (supportive of hypothesis 1). Inconsistent with hypothesis 1b, the model predicted no significant change in pregnancy prototype perceptions for those whose pregnancy ended in miscarriage or abortion relative to those who did not experience a pregnancy. The effect of abortion was in the hypothesized direction, however. Postestimation analyses revealed that the effect of birth on prototype changes differed significantly from that of abortion ($p \leq .05$) but not from that of miscarriage. Lastly, as indicated by nonsignificant interaction effects (not shown) and inconsistent with hypothesis 5, the effect of pregnancy history on prototype perceptions did not vary significantly by respondent gender.

Table 4 presents results from the ordinal regression models predicting perceived similarity to the prototypical pregnant peer. Because significant gender differences were found, the models are separated by respondent gender and significant differences are noted in the table. Again, pregnancy history significantly predicted a change in perceived similarity but only partially in the manner hypothesized. Compared to their never-pregnant peers, respondents whose pregnancy ended in birth experienced an increase in perceived similarity to pregnant peers (consistent with hypothesis 2). The effect of birth, however, was significantly stronger for female respondents than for male respondents (supportive of hypothesis 5). More specifically, relative to their never-pregnant peers, female respondents who experienced a birth were 14 times more likely to perceive themselves more similarly to the typical pregnant peer. For both males and females, neither miscarriage nor abortion predicted a significant change in perceived similarity (contrary to hypothesis 2b). Postestimation tests revealed that, among female respondents, the effect of birth differed significantly from those of miscarriage and abortion ($p < .01$ for each contrast), while the effects of miscarriage, and abortion did not significantly differ from one

Table 4: Exponentiated Coefficients for Ordinal Regression Models of Perceived Similarity by Respondent Gender

<i>Explanatory Variables</i>	<i>Females</i>		<i>Males</i>		<i>Gender Difference</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	
Prior Similarity	1.979 **	1.896 *	1.275	1.268	
Age	1.275	1.125	1.101	1.082	
Attending School	0.939	1.012	0.680	0.677	
Childhood Family	0.785	0.809	0.791	0.841	
Family Income	1.093	1.109	1.068	1.083	
Religious Involvement	0.871	0.891	0.831	0.839	
Friends' Reinforcement of Deviance	1.184	1.485	1.841	1.750	
Alcohol and Marijuana Use	0.863	0.788	0.468 *	0.478 *	
Risk-taking Tendencies	0.529 *	0.551	1.166	1.112	X
Poor Control	0.974	1.109	2.653 *	3.046 *	
Commitment to Street Code	0.938	0.809	1.344	1.261	
Miscarriage		1.169		2.204	
Abortion		1.019		2.393	
Birth		14.008 ***		1.572	X
N	241		215		
ll	-233.827	-209.481	-208.548	-206.437	
chi2	23.705	54.799	21.111	22.331	
Pseudo-R2	0.051	0.150	0.053	0.062	

* p<0.05, ** p<0.01, *** p<0.001 (two-tailed); robust standard errors used

another. Among male respondents, none of the ever-pregnant groups were significantly different from one another.

Changes in Willingness to Engage in Condomless Sex

Table 5 presents results from the multivariate logit regression models predicting respondents' situational willingness to engage in condomless sex. Because significant gender differences were found, the models are separated by respondent gender. Models 1 through 4 display the exponentiated coefficients for female respondents while Models 5 through 8 do so for male respondents. To simplify the presentation of the results, baseline models predicting both females' and males' willingness to engage in condomless sex (Models 1 and 5, respectively) are first discussed. Then, subsequent models that include pregnancy history and the potential mediators are discussed by respondent gender. Gender differences in the association between pregnancy history and willingness are also noted when appropriate.

In the control model predicting females' willingness (Model 1), one can see that prior willingness, age, and poor self-control all increased the odds of expressing willingness to engage in condomless sex. For example, each 1-unit increase in the poor self-control index increased females' odds of being willing to engage in condomless sex by a factor of 2.54. In the control model for males (Model 5), three different variables significantly predicted willingness to engage in condomless sex. Specifically, attending school and living with one's childhood family decreased males odds of expressing willingness by roughly 58% and 49%, respectively, while a \$10,000 increase in family income increased males' odds of expressing willingness by 18%. As shown in Table 5, the effects of prior willingness, school attendance, living arrangements, and income differed significantly by gender.

Table 5: Exponentiated Coefficients for Logistic Regression Models Predicting Willingness to Engage in Condomless Sex by Respondent Gender

<i>Explanatory Variables</i>	<i>Females</i>				<i>Males</i>				<i>Gender Difference</i>
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	
Prior Willingness	7.948***	7.256***	6.485***	7.860***	1.535	1.641	1.516	1.502	X
Age	1.593*	1.487*	1.415	1.438	1.106	1.107	1.070	1.085	
Attending School	1.121	1.132	1.292	1.361	0.416**	0.397**	0.412*	0.434*	X
Childhood Family	1.053	1.143	1.223	1.392	0.505*	0.521	0.514	0.473*	X
Family Income	0.991	0.999	0.999	0.977	1.180**	1.195**	1.207**	1.200**	X
Religious Involvement	0.748	0.773	0.779	0.875	0.802	0.780	0.783	0.768	
Friends' Reinforcement of Deviance	1.316	1.468	1.811	1.771	2.209	1.975	2.223	1.994	
Alcohol & Marijuana Use	0.901	0.830	0.809	0.784	1.251	1.242	1.253	1.141	
Risk-taking Tendencies	1.055	1.051	0.965	1.083	0.871	0.842	0.824	0.800	
Poor Control	2.540*	2.376*	2.631*	3.024*	2.228	2.287	1.853	1.632	
Commitment to Street Code	1.698	1.675	1.430	1.453	1.139	1.104	1.020	1.082	
Miscarriage		1.306	1.141	1.099		3.738	3.064	2.201	
Abortion		2.791	3.328	4.330*		1.909	1.866	1.741	
Birth		2.887*	3.706**	2.266		0.641	0.563	0.477	X
Desire for Pregnancy			1.715**	1.743**			1.155	1.152	X
Birth Control Pill			1.034	1.009			0.827	0.823	
Pregnancy Prototype				3.593*				2.094	
Similarity				6.175**				1.693	
Prototype x Similarity				0.576*				0.849	
N	241				215				
ll	-139.172	-135.103	-129.248	-122.494	-131.402	-129.544	-127.175	-123.785	
chi2	30.584	38.287	53.680	65.866	30.815	32.505	34.086	37.121	
r2_p	0.151	0.176	0.211	0.253	0.118	0.130	0.146	0.169	

* p<0.05, ** p<0.01, *** p<0.001 (two-tailed); robust standard errors used.

In the models predicting females' willingness to engage in unprotected sex, Model 2 adds in the pregnancy history variables, with the reference category being never-pregnant females. As expected, pregnancy history predicted a change in females' willingness to engage in condomless sex. Specifically, females who had a miscarriage or an abortion were no more likely than their never-pregnant peers to express willingness to engage in condomless sex. Female respondents who gave birth, however, were 2.89 times more likely than their never-pregnant peers to be willing to engage in condomless sex. Postestimation tests revealed that, although the birth group experienced a positive change in willingness when compared to their never-pregnant peers, the coefficients among the ever-pregnant groups were not statistically different from one another.

Model 3 adds in the desire for pregnancy and use of the birth control pill and is followed by the addition of prototype/similarity perceptions in Model 4. As shown in Model 3, the likelihood of using the pill did not significantly predict females' willingness to engage in condomless sex. The desire for pregnancy, however, exerted an independent and direct influence on willingness. More specifically, a 1-unit increase in females' desire for pregnancy increased the odds of being willing to engage in condomless sex by a factor of 1.72. Contrary to hypothesis 3, however, the desire for pregnancy and use of the pill failed to attenuate significantly the effect of pregnancy history. In fact, the coefficients for both abortion and birth increased with the entrance of these variables into the model, possibly indicating a suppressor effect.

As Model 4 shows, holding a more favorable prototype of pregnant peers and perceiving oneself to be somewhat similar to those peers increased females' odds of being willing to engage in condomless sex. Also consistent with past research, the interaction term between prototype perceptions and perceived similarity was significant in predicting willingness among female

respondents. Graphing these interactions (not shown) indicated that high favorability combined with high similarity resulted in the most willingness to engage in condomless sex but that the effect of prototype perceptions was minimized at higher levels of perceived similarity. Further, with the inclusion of the social perception variables, the coefficient for birth decreased by over a third and was reduced to nonsignificance. As was shown in Tables 3 and 4, birth increased both the favorability of females' pregnancy prototype and their perceived similarity to said prototype, and it appears that these changes in social perceptions mediated the relationship between birth and young women's willingness to engage in unprotected sex, as proposed in hypothesis 4. Given the small cell sizes of the pregnancy history groups, however, a note of caution is in order about the magnitude of this mediation. That is, with larger cell sizes, the odds ratio for birth in Model 4 ($\exp(b)=2.266$) may have maintained statistical significance despite the attenuation in size. Nevertheless, the birth group was the largest of the ever-pregnant groups, which provides some assurance that social perceptions at least partially mediate the relation between birth and willingness to engage in condomless sex.

This pattern was not present in the models predicting males' willingness to engage in condomless sex (Models 5-8), as neither pregnancy history nor any of the proposed mediators reached statistical significance. As hypothesized, however, the effect of a pregnancy history differed significantly by respondent gender in that the birth of a child exerted a greater influence on young women's willingness to engage in condomless sex than on young men's willingness. Not only was birth a stronger predictor of willingness for women than for men, it appears that birth exerted a directionally different influence on males and females in that it was associated with a decrease in willingness for the former and an increase in willingness for the latter, although the decrease in males' willingness failed to reach statistical significance. Further, for

female respondents, the relationship between birth and willingness was largely explained by the changing social images that accompanied childbirth. For male respondents, this was not the case.

Changes in Condom-use Behavior

Table 6 presents results from the multivariate ordinal regression models predicting condom-use behavior. Because no gender differences were found, the models are presented for the full sample. Although not the focus of this paper, the baseline model is discussed prior to those predicting condom use from the pregnancy history and mediator variables.

In Model 1, several control variables significantly predicted respondents' consistent use of condoms, and most did so in the expected direction. Increases in both risk-taking tendencies and poor self-control decreased the odds of more consistent condom use, while attending school and living with one's childhood family increased the odds of using condoms consistently. More specifically, school attendance and living with one's childhood family increased the odds of more consistent condom use by a factor of 1.62 and 1.58, respectively. Further, compared to respondents who were not sexually active by wave 3 of the study, both those who used condoms consistently and those who did not were predicted to use condoms less consistently at wave 4. Further, female respondents were 51% less likely than male respondents to use condoms consistently.

Model 2, which includes the pregnancy history variables, revealed that respondents in all ever-pregnant groups were less likely than their never-pregnant peers to use condoms consistently. All else equal, those who experienced a miscarriage, abortion, or birth were roughly 81%, 64%, and 65%, respectively, less likely than their never-pregnant peers to report more consistent use of condoms. Postestimation tests revealed that the coefficients for these groups were not statistically different from one another. As shown in Model 3, both the desire for

Table 6: Exponentiated Coefficients for Ordinal Regression Models of Condom Use

Explanatory Variables	1	2	3	4
Inconsistent Condom Use (w3) ^a	0.157 ***	0.190 ***	0.183 ***	0.170 ***
Consistent Condom Use (w3) ^a	0.598 *	0.669	0.710	0.713
Female	0.485 **	0.574 *	0.452 **	0.424 **
Age	0.776	0.844	0.888	0.898
Attending School	1.616 *	1.695 *	1.621 *	1.532
Childhood Family	1.577 *	1.410	1.389	1.410
Family Income	0.980	0.966	0.965	0.979
Religious Involvement	1.190	1.145	1.152	1.095
Friends' Reinforcement of Deviance	1.252	1.122	1.096	1.115
Alcohol & Marijuana Use	1.287	1.313	1.403	1.289
Risk-taking Tendencies	0.576 **	0.591 *	0.598 *	0.540 **
Poor Control	0.446 *	0.389 **	0.404 **	0.404 **
Commitment to Street Code	0.774	0.845	0.924	0.974
Miscarriage		0.192 ***	0.215 ***	0.212 ***
Abortion		0.354 **	0.350 **	0.379 **
Birth		0.351 **	0.339 **	0.448 *
Desire for Pregnancy			0.733 ***	0.746 **
Birth Control Pill			1.168 *	1.160 *
Pregnancy Prototype				1.070
Similarity				0.417
Prototype x Similarity				1.157
N	456			
ll	356.821	344.738	335.579	328.365
chi2	72.896	100.901	105.390	107.414
r2_p	0.103	0.133	0.156	0.174

* p<0.05, ** p<0.01, *** p<0.001 (two-tailed); robust standard errors used

a. Reference group = respondents who had not had sex by wave 3

pregnancy and the likelihood of using the birth control pill significantly predicted respondents' condom-use behavior, such that an increase in the desire for pregnancy decreased the odds of consistent condom use while an increase in the likelihood of using the birth control pill increased the odds of consistent condom use. This latter finding contradicts the assumptions of past researchers and hypothesis 3 in that respondents did not seem to be trading one form of birth control for another. Rather, the projected use of the birth control pill was associated with more consistent condom use, possibly indicating that use of hormonal methods may simply represent a greater vigilance toward pregnancy prevention.

Interestingly, although both the desire for pregnancy and the likelihood of using the birth control pill significantly predicted condom-use behavior, these variables failed to attenuate the effect of pregnancy history in any significant manner. Further, contrary to what was found in the models predicting willingness, Model 4 reveals that neither prototype perceptions nor perceived similarity to pregnant peers significantly predicted the likelihood of consistent condom use. Therefore, changes in social perceptions failed to mediate the relation between pregnancy history and condom-use behavior.

In short, the desire for pregnancy and the use of the pill failed to account for the relationship between pregnancy history and condomless sex. Among female respondents, social perceptions mediated the relationship between birth and willingness to engage in condomless sex, while they did not significantly account for changes in actual behavior for either males or females. Neither the social perception variables nor the previously proposed variables were informative in explaining the effects of other pregnancy history groups on condom use.

VI. DISCUSSION

The present study revealed some interesting findings regarding the relationship between African American adolescent/young adults' pregnancy history, social perceptions, and sexual behavior, findings which both support and challenge prior research. As suggested by past research, the favorability of respondents' social images (prototypes) and their perceptions of similarity to those images did indeed change over the course of the study, and this change was partially attributed to respondents' pregnancy histories. Pregnancy history, however, predicted a significant change in pregnancy prototype perceptions only for those who experienced a birth. Further, the significant effect of birth on perceived similarity held true only for female respondents.

Contrary to what was hypothesized, these findings suggest that any discrepancy between young people's self-image and their social perceptions that might be caused by a pregnancy may be relatively easily restored through a miscarriage or abortion. The birth of a child, however, may expose a more obvious and less easily restored discrepancy between the self-image and the image of pregnant peers, ultimately causing a change in social perceptions to better align them with the personal and social identity and maintain self-esteem. The current study could not identify whether changes in perceived similarity to pregnant peers following a childbirth preceded changes in prototype perceptions, but such directionality is hypothesized and warrants further research. In addition, these findings indicate that changes in social images and of perceptions of the self in relation to those images may not be as gradual as once thought. In some

cases, particular events like pregnancy and/or its outcome may initiate a change in social perceptions.

As suggested by the limited research to date, pregnancy history also significantly predicted changes in both respondents' willingness to engage in condomless sex and their actual use of condoms. Interestingly, those who experienced a birth were the only group that significantly differed from their never-pregnant peers in their willingness to engage in unprotected sex, and this was the case only among females. When predicting actual condom use behavior, a different picture arose. All ever-pregnant groups were less likely than their never-pregnant peers to use condoms consistently, and this finding did not differ significantly by respondent gender. Hence, although some consistency existed between those factors that predicted willingness and those that predicted behavior, some factors were better able to predict behavior than willingness and vice versa.

In most cases, the relationships between pregnancy history and both respondents' willingness to engage in unprotected sex and their actual engagement in this activity remained largely undisturbed when potential mediators were taken into account. Two exceptions are worth noting, however. First, among female respondents, the social perception variables fully mediated the effect of birth on respondents' willingness to engage in condomless sex. Second, with the inclusion of these variables, the effect of abortion was amplified and became statistically significant. This latter finding was unexpected and warrants further research into the possible suppressor effect of social perceptions on the relationship between abortion and willingness to engage in condomless sex.

In addressing the above issues, the present study expanded upon past research in multiple ways. First, like past research, a reciprocal relationship between behavior and social perceptions

was assumed and supported. Unlike past research, however, the present study examined the ways in which a single event may trigger changes in social perceptions. Past research has largely examined the effects of gradual changes in behavior on changes in social perceptions and vice versa. Hence, it appears that the particular outcome of a pregnancy may indeed trigger a change in how respondents perceive others and how they perceive themselves in relation to those others and that these shifting perceptions play a role in altering the behaviors in which young people are willing to partake, at least for young mothers.

Interestingly, however, although many of the hypotheses were supported, the findings were not as consistent as predicted from social comparison insights and from past research. For instance, it was anticipated that those who experienced an increase in prototype favorability would also experience a comparable increase in perceived similarity, as is consistent with the expectation that “when membership in the group is desirable, a close match with the prototype should be self-enhancing,” and “when membership is undesirable or stigmatizing...self-image distinction should be self-enhancing” (Gibbons and Gerrard 1997:69). This was not always the case, however. For example, relative to their never pregnant peers, respondents who experienced a birth increased their pregnancy prototype favorability yet for young men in the same pregnancy history group there was no parallel change in perceived similarity. Likewise, although not significant, the direction of effects was not always consistent, as in the case of the abortion group. Further, in predicting females’ condom-use behavior, prototype perceptions seemed to matter much less at higher levels of perceived similarity. Taken together, these findings indicate that (1) inconsistency between respondents’ perceptions of others and of themselves in relation to those others may be more prevalent than can be predicted by traditional interpretations of

social comparison theory and (2) prototype perceptions and perceived similarity may not be of equal importance in predicting behavior.

More recent developments in the social comparison tradition may provide some insight into the former proposition. More specifically, it has been hypothesized that self-esteem moderates young people's ability to manage inconsistencies in perceptions, such that high self-esteem individuals may be more prone than low self-esteem individuals to utilizing self-serving cognitive strategies in order to maintain levels of self-esteem. This position was reiterated and supported by Gerrard et al. (2000) when predicting adolescents' responses to heavy alcohol consumption. Future research in this area may enhance our understanding of why inconsistencies in perceptions might arise, how these inconsistencies are resolved, and how they affect behavior.

The second proposition that prototype perceptions and perceived similarity may not be of equal importance in predicting young people's willingness to engage in risky behaviors must be examined further since the present study is rather limited in scope. Understanding the relative importance of each component of social comparison for a wide variety of risk behaviors may improve theory specification and enhance prevention/intervention efforts.

An additional strength of the present study was that it improved model specification and reduced the possibility of spuriousness between pregnancy history and its related outcomes by incorporating typically overlooked variables as controls. Pregnancy history continued to predict both condom-use behavior and situational willingness to engage in condomless sex even after controlling for such variables as prior condom-use behavior and willingness, peer affiliations, commitment to conventionality, drinking and drug use, risk-taking tendencies, poor self-control, and living arrangements, among others. This is an important finding because previous research

has not been able to untangle the causal ordering of the relationship between pregnancy history and risky sexual behavior and has left open the possibility of a spurious relationship.

Third, the present results revealed that researchers studying adolescent pregnancy should no longer treat pregnancy as having the uniform outcome of childbirth. Significant differences between other pregnancy history groups were found in most analyses, suggesting that more effort is needed to gather representative samples of both male and female adolescents and young adults who experienced an abortion or a miscarriage and to compare these groups to those who gave birth. Further, the birth group could be further divided into those who assumed the primary caregiver role and those who did not. These findings point to the need for more nuanced studies of pregnancy history and its implications for adolescents' and young adults' health and well-being.

Lastly, the present study tested two possible processes by which pregnancy history could influence young people's willingness to engage in unprotected sex as well as their actual sexual behavior. Only one of these processes was supported. Although previously proposed mediators exerted a direct effect on the dependent variables, they failed to account for the effect of pregnancy history. These null results indicate that typical explanations used to understand the relationship between pregnancy history and condom use may have been misguided and that the effect of pregnancy history on sexual behavior must continue to be investigated.

The fact that social perceptions appeared to explain the relationship between childbirth and females' willingness to engage in condomless sex is informative in several ways. First, social perceptions mediated the birth effect only for female respondents, indicating that the effects of some social images may be gendered and must be addressed as so. Discussing social comparison in gender-neutral language may conceal the potentially gendered nature of the

comparison process. This possibility becomes clear when dealing with social images of pregnancy, but other images, like those of the typical smoker, drinker or drug user, may also be gendered in their connotations and effects. Second, the finding that neither social perceptions nor previously proposed mediators did little to explain the effect of other pregnancy outcomes on risky sexual behavior indicates that multiple processes may be at work and that these processes are not well understood. Understanding such processes, however, is central to informing family planning providers and to improving STI/HIV prevention efforts and, thus, must remain a key point of analysis.

Despite these important improvements on past research, this study had several limitations that must be addressed. First and foremost, although the current study reduced sample selection bias by drawing data from a larger probability sample, it may have introduced a different form of selection bias by dropping respondents who experienced multiple pregnancies or who experienced a pregnancy outside of the selected time frame. Although this bias was necessary to ensure the proper time-ordering of events, it produced a sample that was very limited in age, race, time, and location. This homogeneity necessarily restricts the study's generalizeability, and thus, future studies are needed to replicate its findings on a larger scale.

Second, the relatively small number of respondents in each of the pregnancy history groups may have impacted the significance of the results, particularly in detecting differences between the ever-pregnant groups and between males and females. Despite small cell sizes, however, pregnancy history was highly significant in predicting prototype perceptions, condom-use behavior, and situational willingness to engage in unprotected sex. Larger studies must test the stability and generalizeability of these relationships.

A third limitation of this study was that it included only one indicator of adolescents' prior sexual behavior and did not incorporate family- or community-level variants into the statistical models. Because of these exclusions, the relationship between pregnancy history and condom non-use practices could still prove to be spurious. Hence, model specification would be greatly improved if these variables were to be added to future models. Further, because pregnancy is not the only outcome associated with condomless sex, incorporating measures of STI concern or perceived risk may enhance our understanding of the persistent link between pregnancy history and condom use.

Fourth, several variables in this study lacked nuance in their measurement. For example, pregnancy outcomes were restricted to a window of two to three years because the exact timing of each outcome was not assessed. Potentially, what this means is that a respondent's pregnancy outcome may have occurred very close to the time period in which the dependent variables were measured, thus complicating the time-ordering of events. For instance, for the behavioral measure of condom use, respondents may have answered based on behavior that actually occurred prior to their pregnancy outcome. For this reason, the assessment of willingness may be a better measure of respondents' current level of risk and a more accurate representation of the effect of pregnancy history on sexual risk-taking. Further, included in the miscarriage group were those who reported stillbirths or early infant deaths, each of which could affect the outcome variables differently. In addition, the measure of hormonal methods of birth control included only the use of the birth control pill. The pill, is only one of many hormonal methods of birth control (although the most common), a limitation that may account for its inability to mediate the effect of pregnancy history on condom use. Finally, the dependent variables concerning condom use did not take into account multiple indicators of respondents' sexual behavior (i.e. number of

sexual partners, etc.). Doing so may help to estimate more accurately the risk associated with condom non-use among each group of ever-pregnant and never-pregnant adolescents and young adults.

A fifth shortcoming of the present study was its consideration of only one partner's perspectives in predicting condom use. Sexual intercourse is obviously a social act involving more than one person, and some studies suggest that oftentimes one partner may have more power than the other in deciding whether or not to use a condom (Tschann, Adler, Millstein, Gurvey, and Ellen 2002). In the current sample, females reported using condoms less consistently than males despite their lesser willingness to engage in condomless sex. This pattern provides support for the proposition that partners may differ in their ability to decide whether and when to use a condom. Future studies must take this into account and consider the potential influence of both partners in determining condom-use behavior. It is plausible, for instance, that one reason abortion and miscarriage are predictive of decreased condom use despite their null effects on social images is due to the unmeasured expectations/behaviors of respondents' partner(s). Possibilities such as this warrant further research on condom use and the respective influence of each sexual partner.

Finally, this study utilized only two time points in the life-course of respondents. Future studies are needed to assess if and how pregnancy history affects long-term changes in perceptions and behavior in order to aid in our understanding of abortion, miscarriage, and birth as turning points in the life-course. Such analyses will be able to clarify if and how the timing of a pregnancy moderates both its short-term and long-term effects. Further, utilizing additional time points in the life-course will allow researchers to examine how changes in willingness may mediate the relationship between pregnancy history and behavioral changes and how these

changes in behavior may predict subsequent pregnancies and/or the contraction of STIs. In other words, the full process linking prototypes to willingness, willingness to behavior, and behavior to adverse outcomes can be examined in concordance with Gerrard et al.'s (2008) prototype-willingness model of decision making.

Despite these limitations, this study was the first to attempt to examine empirically the processes whereby pregnancy history influences risky sexual behavior. Further, it improved upon many of the weaknesses of past research by incorporating proper controls and by including multiple pregnancy history groups. In doing so, it revealed that pregnancy, and particularly its outcome, can indeed trigger changes in young people's social perceptions, willingness to engage in condomless sex, and actual sexual behavior and, further, that changes in social perceptions account in part for such behavior changes. Because this process held true of only females who gave birth, however, researchers studying these relationships must broaden the scope of their research to include variables outside the realm of medical science and public health, as the processes linking pregnancy histories beside childbirth to condom use, or lack thereof, remain largely unexplained. Further, because this study showed that respondents who had a miscarriage or abortion were less likely than their never-pregnant peers to use condoms consistently despite the lack of change in social images associated with these outcomes, it remains unclear exactly if and how social perceptions matter for respondents in these group.

Perhaps incorporating other psychological-, situational-, family-, and community-level predictors into future analyses may help to clarify the relationships in question. Likewise, qualitative research, especially that which assesses how African American adolescents and young adults view their pregnancy history in relation to their current outlook and behavior could complement quantitative studies nicely and provide insight into the processes as work.

Explaining the processes whereby pregnancy history influences risky sexual behavior continues to be an important step in informing prevention and intervention efforts to improve African American adolescent health, to limit the number of unwanted pregnancies, and to reduce the spread of STIs and HIV.

VII. REFERENCES

- Adamczyk, A. 2008. "The Effects of Religious Contextual Norms, Structural Constraints, and Personal Religiosity on Abortion Decisions." *Social science research* 37:657-672.
- Alan Guttmacher Institute. 2006. "U.S. Teenage Pregnancy Statistics National and State Trends and Trends by Race and Ethnicity." New York, NY.
- Alan Guttmacher Institute. 2008. "Facts on Contraceptive Use." New York, NY.
- Allen, J. P., P. Marsh, C. McFarland, K. B. McElhaney, D. J. Land, K. M. Jodl, and S. Peck. 2002. "Attachment and Autonomy as Predictors of the Development of Social Skills and Delinquency During Midadolescence." *Journal of Consulting and Clinical Psychology* 70:56-66.
- Allison, Paul. 1999. "Comparing Logit and Probit Coefficients Across Groups." *Sociological Methods Research* 28:186-208.
- Anderson, Elijah. 1999. *Code of the Street: Decency, Violence, and the Moral Life of the Inner City*. New York: W. W. Norton.
- Aquilino, Mary Lober and Helga Bragadottir. 2000. "Adolescent Pregnancy: Teen Perspectives on Prevention." *MCN: The American Journal of Maternal/Child Nursing* 25:192-197.
- Belknap, Joanne. 2007. *The Invisible Woman: Gender, Crime, and Justice*. Belmont, CA: Wadsworth/Thompson Learning.
- Bixenstine, V. E., M. S. DeCorte, and B. A. Bixenstine. 1976. "Conformity to Peer Sponsored Misconduct at Four Grade Levels." *Developmental Psychology* 12:226-236.
- Blanton, Hart, Regina J. J. M. Vandeneijnden, Bram Buunk, Frederick X. Gibbons, Meg Gerrard, and Arnold Bakker. 2001. "Accentuate the Negative: Social Images in the Prediction and Promotion of Condom Use." *Journal of Applied Social Psychology* 31:274-295.
- Bond, Lisa, Karlene Lavelle, and Jennifer Lauby. 2002. "A Comparison of the Risk Characteristics of Ever-Pregnant and Never-Pregnant Sexually Active Adolescents." *Journal of HIV/AIDS Prevention & Education for Adolescents & Children* 5:123-137.
- Brown, B. Bradford, Donna Rae Clasen, and Sue Ann Eicher. 1986. "Perceptions of Peer Pressure, Peer Conformity Dispositions, and Self-Reported Behavior Among Adolescents." *Developmental Psychology* 22:521-530.

- Burke, Peter J. 2006. "Identity Control Theory." Pp. 2202-2207 in *Blackwell Encyclopedia of Sociology*, vol. 5, edited by G. Ritzer. Oxford: Blackwell Publishing Co.
- Burton, Linda M. 1990. "Teenage Childbearing as an Alternative Life-Course Strategy in Multigenerational Black Families." *Human Nature* 1:123-143.
- Cartmill, R. S. V. and D. R. Bromham. 1996. "The Impact of an Unplanned Pregnancy and Termination on Intended Future Contraception: Implications for Reproductive Health Promotion." *British Journal of Family Planning* 22:2-5.
- Centers for Disease Control and Prevention. 2008. "Sexually Transmitted Disease Surveillance 2007." Atlanta, GA.
- Chesney-Lind, Meda. 1989. "Girls' Crime and Woman's Place: Toward a Feminist Model of Female Delinquency." *Crime & Delinquency* 35:5-29.
- Chesney-Lind, Meda and Lisa Pasko. 2004. *The Female Offender: Girls, Women, and Crime*. Thousand Oaks, CA: Sage.
- Clemmens, Donna. 2003. "Adolescent Motherhood: A Meta-Synthesis of Qualitative Studies." *MCN: The American Journal of Maternal Child Nursing* 28:93-99.
- Cohen, J. and P. Cohen. 1983. *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Hillsdale, NJ: Erlbaum.
- Coleman, P. K. 2006. "Resolution of Unwanted Pregnancy During Adolescence Through Abortion Versus Childbirth: Individual and Family Predictors and Psychological Consequences." *Journal of Youth and Adolescence* 35:903-911.
- Crittenden, Colleen P., Neil W. Boris, Janet C. Rice, Catherine A. Taylor, and David L. Olds. 2009. "The Role of Mental Health Factors, Behavioral Factors, and Past Experiences in the Prediction of Rapid Repeat Pregnancy in Adolescence." *Journal of Adolescent Health* 44:25-32.
- Darney, P. D., L. S. Callegari, A. Swift, E. A. Atkinson, and A. M. Robert. 1998. "Condom Practices of Urban Teens Using Norplant Contraceptive Implant, Oral Contraceptives, and Condoms for Contraception." *Journal of Obstetric Gynecology* 11:115-126.
- Edin, Kathryn and Maria Kefalas. 2005. *Promises I Can Keep: Why Poor Women Put Motherhood before Marriage*. Los Angeles: University of California Press.
- Farber, N. B. 1991. "The Process of Pregnancy Resolution Among Adolescent Mothers." *Adolescence* 26:697-716.
- Festinger, Leon. 1954. "A Theory of Social Comparison Processes." *Human Relations* 7:117-140.

- Fisher, J. and R. Mason. 1981. "The Analysis of Multicollinear Data in Criminology." in *Methods in Quantitative Criminology*, edited by J. A. Fox. New York: Academic Press.
- Gallo, M. F., M. J. Steiner, L. Warner, T. Hylton-Kong, and J. P. Figueroa. 2007. "Self-Reported Condom Use is Associated With Reduced Risk of Chlamydia, Gonorrhea, and Trichomoniasis." *Sexually Transmitted Diseases* 34:829-833.
- Gerrard, M. and T. D. Warner. 1990. "Antecedents of Pregnancy Among Women Marines." *Journal of the Washington Academy of Sciences* 80:1-15.
- Gerrard, Meg, Frederick X. Gibbons, Amy E. Houlihan, Michelle L. Stock, and Elizabeth A. Pomery. 2008. "A Dual-Process Approach to Health Risk Decision Making: The Prototype Willingness Model." *Developmental Review* 28:29-61.
- Gerrard, Meg, Frederick X. Gibbons, Monica Reis-Bergan, and Daniel W. Russell. 2000. "Self-Esteem, Self-Serving Cognitions, and Health Risk Behavior." *Journal of Personality* 68:1177-1201.
- Gerrard, Meg, Frederick X. Gibbons, Michelle L. Stock, L. Vande Lune, and M. J. Cleveland. 2005. "Images of Smokers and Willingness to Smoke Among African American Pre-adolescents: An Application of the Prototype/Willingness Model of Adolescent Health Risk Behavior to Smoking Initiation." *Journal of Pediatric Psychology* 30:305-318.
- Gibbons, Frederick X. and Meg Gerrard. 1995. "Predicting Young Adults' Health Risk Behavior." *Journal of Personality and Social Psychology* 69:505-517.
- . 1997. "Health Images and Their Effects on Health Behavior." Pp. 63-94 in *Health, Coping, and Well-being: Perspectives From Social Comparison Theory.*, edited by B. P. Buunk and F. X. Gibbons. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Gibbons, Frederick X., Meg Gerrard, and Sue Boney McCoy. 1995. "Prototype Perception Predicts (Lack of) Pregnancy Prevention." *Personality and Social Psychology Bulletin* 21:85-93.
- Gibbons, Frederick X., Meg Gerrard, Michael J. Cleveland, Thomas A. Wills, and Gene Brody. 2004. "Perceived Discrimination and Substance Use in African American Parents and Their Children: A Panel Study." *Journal of Personality and Social Psychology* 86:517-529.
- Groat, H. Theodore, Peggy C. Giordano, Stephen A. Cernkovich, M. D. Pugh, and Steven P. Swinford. 1997. "Attitudes Toward Childbearing Among Young Parents." *Journal of Marriage & the Family* 59:568-581.
- Heise, David R. 2007. *Expressive Order: Confirming Sentiments in Social Actions*. New York: Springer.

- Herrman, Judith W. 2008. "Adolescent Perceptions of Teen Births." *Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families, & Newborns* 37:42-50.
- Holmes, K.K., R. Levine, and M. Weaver. 2004. "Effectiveness of Condoms in Preventing Sexually Transmitted Infections." *Bulletin World Health Organization* 84:454-461.
- hooks, bell. 1984. *Feminist Theory: From Margin to Center*. Boston, MA: South End Press.
- Hope, T. L., E. I. Wilder, and T. T. Watt. 2003. "The Relationships Among Adolescent Pregnancy, Pregnancy Resolution, and Juvenile Delinquency." *Sociological Quarterly* 44:555-576.
- Kalmuss, D. S. 1986. "Contraceptive Use: A Comparison Between Ever- and Never-Pregnant Adolescents." *Journal of Adolescent Health Care* 7:332-337.
- Kiene, Susan M., Howard Tennen, and Stephen Armeli. 2008. "Today I'll Use a Condom, But Who Knows About Tomorrow: A Daily Process Study of Variability in Predictors of Condom Use." *Health Psychology* 27:463-472.
- Kirkman, M., D. Rosenthal, and A.M.A Smith. 1998. "Adolescent Sex and the Romantic Narrative: Why Some Young Heterosexuals Use Condoms to Prevent Pregnancy But Not Disease " *Psychology, Health & Medicine* 3:355-370
- Kogan, Steven M., Gene H. Brody, Frederick X. Gibbons, Velma McBride Murry, Carolyn E. Cutrona, Ronald L. Simons, Gina Wingood, and Ralph DiClemente. 2008. "The Influence of Role Status on Risky Sexual Behavior Among African Americans During the Transition to Adulthood." *Journal of Black Psychology* 34:399-420.
- Lemay, C. A., S. B. Cashman, D. S. Elfenbein, and M. E. Felice. 2007. "Adolescent Mothers' Attitudes Toward Contraceptive Use Before and After Pregnancy." *Journal of Pediatric and Adolescent Gynecology* 20:233-240.
- Maker, C. and J. Ogden. 2003. "The Miscarriage Experience: More Than Just a Trigger to Psychological Morbidity?" *Psychology & Health* 18:403-415.
- Moloney, M., K. MacKenzie, and G. Hunt. 2009. "The Path and Promise of Fatherhood for Gang Members." *British Journal of Criminology* 49:305-325.
- Murry, V. M. 1995. "An Ecological Analysis of Pregnancy Resolution Decisions Among African-American and Hispanic Adolescent Females " *Youth & Society* 26:325-350.
- Orr, D. P., C. D. Langefeld, B. P. Katz, V. A. Caine, P. Dias, M. Blythe, and R. B. Jones. 1992. "Factors Associated With Condom Use Among Sexually Active Female Adolescents." *Journal of Pediatrics* 120:311-317.

- Parkes, Alison, Daniel Wight, Marion Henderson, and Graham Hart. 2007. "Explaining Associations between Adolescent Substance Use and Condom Use." *Journal of Adolescent Health* 40:e1–180.
- Paukku, M., J. Quan, P. Darney, and T. Raine. 2003. "Adolescents' Contraceptive Use and Pregnancy History: Is There a Pattern?" *Obstetrics and Gynecology* 101:534-538.
- Rankin, Jane L., David J. Lane, Frederick X. Gibbons, and Meg Gerrard. 2004. "Adolescent Self-Consciousness: Longitudinal Age Changes and Gender Differences in Two Cohorts." *Journal of Research on Adolescence* 14:1-21.
- Reich, Jennifer A. 2008. "Not Ready to Fill His Father's Shoes: A Masculinist Discourse of Abortion." *Men and Masculinities* 11:3-21.
- Reich, Jennifer A. and Claire D. Brindis. 2006. "Conceiving Risk and Responsibility: A Qualitative Examination of Men's Experiences of Unintended Pregnancy and Abortion." Pp. 133-152 in *International Journal of Men's Health*, vol. 5. US: Mens Studies Press.
- Schneider, S. M. and D. S. Thompson. 1976. "Repeat Aborters." *American Journal of Obstetric Gynecology* 126:316-320.
- Seamark, Clare J. and Pamela Lings. 2004. "Positive Experiences of Teenage Motherhood: A Qualitative Study " *British Journal of General Practice* 54:813-818.
- Simons, Ronald L., Kuei-Hsiu Lin, Leslie C. Gordon, Gene H. Brody, Velma Murry, and Rand Conger. 2002. "Community Differences in the Association between Parenting Practices and Child Conduct Problems." *Journal of Marriage and the Family* 64:331-345.
- Smart, Carol. 1995. *Law, Crime, and Sexuality: Essays in Feminism*. Thousand Oaks, CA: Sage.
- Stevens-Simon, C., L. Kelly, D. Singer, and A. Cox. 1996. "Why Pregnant Adolescents Say They Did Not Use Contraceptives Prior to Conception." *Journal of Adolescent Health* 19:48-53.
- Stevens-Simon, Catherine and Elizabeth R. McAnarney. 1996. "Adolescent Pregnancy." Pp. 313-332 in *Handbook of Adolescent Health Risk Behavior*, edited by R. J. DiClemente, W. B. Hansen, and L. E. Ponton. New York: Plenum Press.
- Tesser, Abraham. 2007. "Toward a Self-Evaluation Maintenance Model of Social Behavior." Pp. 105-120 in *Social Comparison Theories: Key Readings*, edited by D. A. Stapel and H. Blanton. New York: Psychology Press.
- Thornton, B., Frederick X. Gibbons, and Meg Gerrard. 2002. "Risk Perception and Prototype Perception: Independent Processes Predicting Risk Behavior." *Personality and Social Psychology* 28:986-999.

- Truong, H. H. M., T. Kellogg, W. McFarland, M. S. Kang, P. Darney, and E. A. Drey. 2006. "Contraceptive Intentions Among Adolescents After Abortion." *Journal of Adolescent Health* 39:283-286.
- Tschann, Jeanne M., Nancy E. Adler, Susan G. Millstein, Jill E. Gurvey, and Jonathan M. Ellen. 2002. "Relative Power Between Sexual Partners and Condom Use Among Adolescents." *Journal of Adolescent Health* 31:17-25.
- Wang, D. L., H. Yan, and Z. J. Feng. 2004. "Abortion as a Backup Method for Contraceptive Failure in China." *Journal of Biosocial Science* 36:279-287.
- Williams, Richard. 2009. "Using Heterogeneous Choice Models to Compare Logit and Probit Coefficients Across Groups." *Sociological Methods* 37:531-559.
- Wills, T.A. , J. M. Sandy, and A. Yaeger. 2000. "Temperament and Adolescent Substance Use: An Epigenetic Approach to Risk and Protection." *Journal of Personality* 68:1127-1151.