Linking Pregnancy Concerns to Pregnancy Risk Avoidant Action: The Role of Construct Accessibility

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The construct accessibility perspective suggests that individuals are less likely to risk pregnancy when pregnancy concerns are highly accessible. Two studies were designed to assess the role of accessibility in pregnancy risk taking. Study 1 determined that subjects identified as likely (chronics) and unlikely (nonchronics) to have pregnancy concerns chronically accessible did not hold different beliefs about unplanned pregnancy. Study 2 examined (a) the joint effect of chronically and temporarily accessible pregnancy concerns on responses to a hypothetical intimate situation embedded in a story completion task and (b) the relation between chronically accessible pregnancy concerns and self-reported pregnancy risk taking. As predicted, chronics made fewer risk-taking responses in the story completion task and reported less risk taking than nonchronics. Temporarily accessible pregnancy concerns decreased risk-taking responses among chronics but had no effect on nonchronics. Gender differences did not qualify effects for chronic accessibility. Taken together, these studies suggest that although chronics and nonchronics may hold similar beliefs about unplanned pregnancy, their behavior may vary in association with the accessibility of those beliefs. These findings support the construct accessibility perspective to understand the link between cognition and action.

Despite widespread efforts to increase access to contraceptives and contraceptive information, the rate of unplanned pregnancy in the United States remains strikingly high (Jones, Forrest, Henshaw, Silverman, & Torres, 1988). A vast body of literature on contraceptive behavior has arisen in an effort to explain this phenomenon and to understand contraceptive behavior. Several interesting patterns of cognition-action inconsistency have emerged in this literature and invite explanation. For example, although ignorance of contraception and reproduction does predict nonuse of contraceptives and increased risk for unplanned pregnancy (Hayes, 1987; Morrison, 1985), knowledge of reproduction and contraception is insufficient to ensure the use of contraceptives or abstinence (Kirby, 1984; Morrison, 1985). Moreover, many men and women who report that they believe contraceptives are important and intend to use them do not consistently do so (Hayes, 1987; Jaccard, 1987). Recent work by Fazio and others (e.g., Fazio, Chen, McDonel, & Sherman, 1982; Fazio & Williams, 1986; Kallgren & Wood, 1986) may help explain these cognition-action inconsistencies. These researchers employ a construct accessibility perspective (Barth, 1984; Bruner, 1957; Higgins & King, 1981; Tulving & Pearlstone, 1966) to address questions of how and when cognition guides action.

According to this construct accessibility perspective, cognitive constructs are more likely to guide behavior when these constructs are accessible in memory. Constructs become temporarily accessible when recent use

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(or priming) temporarily activates them (Bargh, 1984; Higgins & King, 1981; Srull & Wyer, 1980). Frequent use of a construct maintains the activation and renders the construct chronically activated, or chronically accessible (Bargh, 1984; Higgins & King, 1981). A number of studies have shown increased consistency between information represented by the construct and subsequent behaviors when the construct is either temporarily (e.g., Carver, Gannellen, Froming, & Chambers, 1983) or chronically (e.g., Powell & Fazio, 1984; Kallgren & Wood, 1986) accessible. For example, priming a “boy meets girl” encounter in male subjects led them to behave in a friendlier manner toward a female in a subsequent interaction than subjects exposed to a control story (Wilson & Capitman, 1982), and chronically accessible attitudes favoring a presidential candidate predicted more variance in voting behavior than the attitude measure itself (Fazio & Williams, 1986).

Research identifying accessibility as a factor linking cognition and action suggests that the accessibility of pregnancy concerns may moderate the relation between these concerns and pregnancy risk avoidance action. No studies have tested this notion directly, but indirect support is provided by a school-based clinic program, the Self Care Center program (Zabin, Hirsch, Smith, Streett, & Hardy, 1986; Zabin et al., 1988). Certain program features were specifically designed to increase program participants’ awareness of (i.e., make available) the negative consequences of unprotected sexual intercourse. Other features, though not designed for this purpose, probably increased the temporary accessibility of these consequences by serving as primes: announcements and signs for program activities, students recruited as peer counselors wearing T-shirts or large buttons with the words “Ask me about the Self Center” around school. Repeated exposure to these “environmental primes” may have made the consequences of unprotected intercourse chronically accessible for program participants.

Twenty-eight months of exposure to the Self Care Center program produced a 30.1% decrease in pregnancy rates, compared with a 57.6% increase at control schools. Median age at first intercourse increased for male and female students from 15.6 to 16.2 years, and the percentage of sexually active students dropped significantly from that observed in the baseline data collected during the 3 years preceding introduction of the school-based clinic intervention program. A comparison of the program school’s baseline and postintervention data revealed that these changes in behavior occurred without any significant changes in contraceptive knowledge and attitudes. This suggests that the program’s success may have been due to its effects on the accessibility of the consequences of unprotected intercourse.

In summary, findings in the contraceptive and psychological literatures suggest a role for pregnancy concern accessibility in pregnancy risk taking and avoidance. The construct accessibility perspective suggests that possessing pregnancy concerns is not sufficient to motivate risk avoidance action; pregnancy concerns must also be accessible if appropriate risk avoidant actions are to be implemented. The present studies were designed to examine these ideas. Study 1 evaluated (a) the validity of a screening measure for chronically accessible pregnancy concerns and (b) the relation between chronic accessibility and severity of pregnancy concerns. Study 2 examined (a) the joint effect of chronically and temporarily accessible pregnancy concerns on responses to a hypothetical intimate situation and (b) the relation between chronically accessible pregnancy concerns and self-reported pregnancy risk-taking behavior (e.g., nonuse of contraceptives).

Gender differences were assessed in both studies. It was important to establish that males as well as females had concerns about unplanned pregnancy. This information would help determine the generalizability of results obtained. In addition, given consistent findings for gender differences in the contraceptive literature (e.g., Whiteley & Schofield, 1985-86), potential interactions between accessibility and gender needed to be clarified.

STUDY 1

To test the relevance of a construct accessibility perspective to pregnancy risk avoidance, we needed to establish, first, that our measure of chronically accessible pregnancy concerns was valid. Then, using this measure, we needed to establish that the presence of chronically accessible pregnancy concerns was unrelated to differences in the severity of these concerns or in perceived susceptibility to pregnancy. In order to study the effects of accessibility, it was important to establish that accessibility of pregnancy concerns was not confounded with availability in the study population.

The measure we developed for detecting chronically accessible pregnancy concerns was adapted from Higgins, King, and Mavin’s (1982) measure for detecting chronically accessible personality trait categories (see Method). The measure we developed was used to classify subjects classified as either likely (chronics) or unlikely (nonchronics) to have pregnancy concerns chronically accessible. Of interest in Study 1 was whether chronics would report thinking more often about the impact of unplanned pregnancy than nonchronics. Experiencing thoughts about the impact of unplanned pregnancy is one indicator (though by no means the only one) that pregnancy concerns are activated, and frequent activation is consid-
ered a precursor to chronic accessibility (Bargh, 1984; Higgins & King, 1981). A correspondence between the results of our screening measure and how frequently individuals reported thinking about the impact of unplanned pregnancy would support screening measure validity.

We predicted a lack of correspondence between the results of the screening measure and subjects’ beliefs (e.g., severity, susceptibility) about unplanned pregnancy. A lack of correspondence between the results of the screening measure and these beliefs would suggest that between-group differences in chronic accessibility are not confounded by differences in availability.

Method

SUBJECTS AND SELECTION CRITERIA

Seventy-two male and 111 female undergraduates, ages 17-23, participated in exchange for extra credit in introductory psychology. We selected participants on the basis of their responses to a screening measure completed, as part of a large departmental survey, approximately 10-12 weeks prior to the study. The study sample contained 26 male and 45 female subjects whose responses indicated they were likely to have pregnancy concerns chronically accessible (chronics) and 46 male and 66 female subjects whose responses indicated they were not likely to have these concerns chronically accessible (nonchronics).

MATERIALS

Screening Measure. This measure asked subjects to list thoughts, ideas, feelings, and so forth experienced when sexual intercourse with a desirable partner was possible. Responses were used to identify chronics (those who listed pregnancy) and nonchronics (those who did not list pregnancy).

Raters coded the words pregnancy, pregnant, and baby (-ies) as pregnancy references. Frequently such references were embedded in phrases such as fear of pregnancy or worried about pregnancy. Seven raters coded responses to the screening measure. Interrater agreement was 100% for a random sample of 21 screening questionnaires, indicating reliable coding of responses to the measure.

Pregnancy Impact Questionnaire. This questionnaire contained four types of items: frequency, belief, susceptibility, and demographic. Frequency items asked subjects how frequently they thought about the impact of pregnancy on parents, career, and self. Response options for frequency items were as follows: 1 = never thought about this before being asked these questions; 2 = thought about this before being asked these questions, but not very often; 3 = only think about this when sexually involved with someone; 4 = think about this fairly often or a great deal.

Belief items measured the negative impact of unplanned pregnancy on parents, career, and self. Four items measured beliefs about this impact on relationship with parents. These questions asked how disappointed mother/father would be and how affected the relationship with mother/father would be. Three items measured beliefs about impact of unplanned pregnancy on career: how disrupted plans would be, likelihood of dropping out of school, likelihood of not achieving career goals. Two items measured beliefs about impact on self: likelihood of having an abortion, how upset one would be about having an abortion. Anchors for the 9-point response scale used for these items were not at all (1) and extremely (9).

Susceptibility was measured by a single item that asked subjects to indicate the probability of a pregnancy following a single episode of unprotected intercourse. The response scale ranged from 0 to 100 and was marked off in 5-point intervals. Subjects were instructed to circle the point on the scale that indicated the “chance” of a pregnancy occurring. They were instructed not to include in their estimate the effects of “time of the month,” withdrawal, or frequency of unprotected intercourse.

Demographic items assessed current relationship status, experience with sexual intercourse, and perceptions of study purpose. Subjects responded by checking the blank next to the option that most accurately described their relationship status (0 = not currently in a relationship, 1 = currently involved in a long distance relationship, 2 = currently involved in a local relationship) and experience with intercourse (0 = has had intercourse, 1 = has never had intercourse). An open-ended question asked subjects to describe the purpose of the study as best as they could.

PROCEDURE

Subjects and experimenters were matched on gender to avoid any gender effects on accessibility (Higgins & King, 1981). Subjects were assured that their responses would be kept confidential and that their names would never be directly associated with the materials they completed. Then the experimenter instructed subjects to place their completed questionnaire in an unmarked manila envelope and to give this envelope to him or her. When subjects turned in their envelopes, the experimenter thanked them and gave them a written debriefing sheet.

Results and Discussion

Frequency ratings. Ratings of how frequently the impact of unplanned pregnancy is considered were submitted
TABLE 1: Mean Frequency Ratings for Three Concerns by Chronics and Nonchronics

<table>
<thead>
<tr>
<th>Concern</th>
<th>Chronics</th>
<th>Nonchronics</th>
<th>Significance of Univariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>2.80</td>
<td>2.47</td>
<td>.048</td>
</tr>
<tr>
<td>Career</td>
<td>3.22</td>
<td>2.76</td>
<td>.003</td>
</tr>
<tr>
<td>Self</td>
<td>2.86</td>
<td>2.67</td>
<td>.121</td>
</tr>
</tbody>
</table>

NOTE: Ratings could range from 1 to 4. Higher numbers indicate greater frequency of thoughts about the particular concern.

TABLE 2: Mean Frequency Ratings for Three Concerns by Males and Females

<table>
<thead>
<tr>
<th>Concern</th>
<th>Males</th>
<th>Females</th>
<th>Significance of Univariate F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent</td>
<td>2.57</td>
<td>2.66</td>
<td>.647</td>
</tr>
<tr>
<td>Career</td>
<td>2.88</td>
<td>3.04</td>
<td>.404</td>
</tr>
<tr>
<td>Self</td>
<td>2.65</td>
<td>2.83</td>
<td>.354</td>
</tr>
</tbody>
</table>

NOTE: Ratings could range from 1 to 4. Higher numbers indicate greater frequency of thoughts about the particular concern.

to a two-way Concerns × Gender multivariate analysis of variance (MANOVA). The multivariate F test, F(6, 175) = 3.12, p < .03, and two of the three univariate F tests (p < .05) indicated that chronics reported thinking more often about the impact of an unplanned pregnancy on career and on parents than nonchronics (see Table 1). Note that these concerns were available for all subjects: All reported thinking about the impact of unplanned pregnancy. However, it was the chronics who reported thinking about its impact more frequently. These data support the validity of the screening measure.

No gender differences appeared in the frequency ratings, and there was no significant Concerns by Gender interaction (p > .21; see Table 2). Males reported thinking about the impact on parents and on career approximately as often as females. Similarly, males and females did not differ significantly in how often they thought about abortion.

Severity beliefs. Inspection of the Pregnancy Impact Questionnaire responses revealed that no subject chose the "not at all" response. All subjects indicated concern about unplanned pregnancy. This suggests that all subjects had pregnancy concerns available.

As a data reduction technique, we performed a factor analysis on the belief items from the Pregnancy Impact Questionnaire using a principal components (PC) extraction with a varimax rotation. This produced a three-factor solution that accounted for 64.5% of the variance. All items loaded at .40 or higher on their respective factors, according to the three types of impact: career, parent, self.

Scores for items constituting each factor were summed to create Career, Parent, and Self severity belief factor scores. Factor scores were then submitted to a two-way Concerns × Gender MANOVA. Consistent with predictions, the multivariate F for the concerns main effect was not significant, F(6, 175) = 1.54, p = .21.3 Mean factor scores (see Table 3) indicated that both chronics and nonchronics viewed an unplanned pregnancy as a negative event. This suggests that pregnancy concerns were equally available and equally severe in chronics and nonchronics.

In contrast, the multivariate F for the gender main effect was significant, F(6, 175) = 8.75, p < .0001. Females rated the severity of unplanned pregnancy more negatively than males (see Table 4). There was no significant Concerns by Gender interaction, multivariate F(6, 175) = 0.05, p = .99.

Susceptibility. Susceptibility ratings suggested that effects for chronically accessible pregnancy concerns were not confounded with differences in perceived susceptibility to pregnancy given one act of unprotected intercourse. Chronics (M = 50.65) and nonchronics (M = 55.78) viewed the probability of a pregnancy as approximately equal, F(1, 180) = 2.23, p = .14. In contrast, females rated the probability of pregnancy (M = 57.81) significantly higher than males (M = 46.47), F(1, 180) =
8.56, p < .005, but there was no Concerns by Gender interaction (p = .75).

In summary, data from Study 1 suggest that (a) the screening measure for chronically accessible pregnancy concerns has validity and (b) the presence of chronically accessible pregnancy concerns in a college student population is unrelated to differences in severity of concerns about unplanned pregnancy or perceived susceptibility to pregnancy. Additionally, gender shapes beliefs about unplanned pregnancy: Females' beliefs were more negative than males’. Females perceive a greater probability of pregnancy given their participation in unprotected intercourse than males. However, males and females with chronic concerns do not differ in how often they report thinking about the negative impacts of unplanned pregnancy. Both think about these impacts more often than nonchronics.

STUDY 2

The construct accessibility perspective argues that beliefs about the severity of unplanned pregnancy (i.e., pregnancy concerns) should be more likely to motivate pregnancy risk-avoidant action when highly accessible than when not highly accessible. In Study 2, we tested this notion by manipulating the temporary accessibility of pregnancy concerns in subjects likely and unlikely to have such concerns chronically accessible. We then examined subjects’ responses to a hypothetical intimate situation in which intercourse with a desirable partner was possible. This intimate situation was embedded in a story for which subjects were asked to write an ending. Both the story and the situation were constructed to parallel the life experiences of our subject population.

Our primary dependent measure was the resolution of the intimate situation that subjects generated in the story completion task. Interest focused on whether the characters in the story were described by the subject as risking pregnancy (i.e., not using contraceptives, using an unreliable method of contraception such as withdrawal) or as avoiding this risk (i.e., abstaining from intercourse, using a reliable contraceptive method).

We expected that chronic and temporary accessibility would combine additively to influence responses to the intimate situation. That is, we expected that those with chronically accessible pregnancy concerns would be least likely to write risk-taking endings, particularly when these concerns were also temporarily accessible. This pattern would be consistent with the findings of Bargh, Bond, Lombardi, and Tota (1986) regarding impression formation judgments. In their study, the priming manipulation influenced judgments in individuals for whom the trait construct was not chronically accessible and augmented the influence of the trait construct in individuals for whom the trait was chronically accessible.

In addition to examining the joint effect of temporarily and chronically accessible pregnancy concerns on risk taking in a hypothetical intimate situation, we examined subjects self-reported risk-taking behavior as measured by the Sexual Behavior Questionnaire. We expected that subjects with chronically accessible pregnancy concerns would be less likely to risk pregnancy than subjects without chronically accessible pregnancy concerns. Our goal was to determine whether chronically accessible pregnancy concerns accounted for any variance in risk taking beyond that accounted for by gender, frequency of intercourse, and relationship status.

Method

SUBJECTS, SELECTION CRITERIA, AND DESIGN

Seventy-five male and 70 female undergraduates, ages 18-22, participated in exchange for extra credit in introductory psychology. Using responses to the screening measure described in Study 1, we selected a sample of 35 male and 35 female chronics and 40 male and 35 female nonchronics.

Male and female subjects with and without chronically accessible pregnancy concerns were randomly assigned to a pregnancy or fitness (neutral) priming condition. This produced a three-factor, between-subjects factorial design: Concerns (chronic vs. nonchronic), Prime (pregnancy vs. fitness [neutral]), Gender (male vs. female).

MATERIALS

Primes. Subjects were exposed to one of two priming questionnaires: the Health and Pregnancy Questionnaire or the Health and Fitness Questionnaire (neutral).4 The questionnaires were approximately equal in length and began with five closed-ended questions about health (e.g., “Do you smoke cigarettes?”). Next followed three open-ended questions addressing the impact of a particular experience or state (unplanned pregnancy, physical fitness) on relationships with significant others, feelings about self, sense of well-being, and so on. Each priming questionnaire took approximately 15 min to complete. Inspection of these questionnaires indicated that all subjects had completed them thoroughly. All subjects in the pregnancy prime condition described the impact of pregnancy as negative.

Story. The story described two college students out enjoying a pleasant Friday night date (see Appendix for complete text). The story was 591 words long and took approximately 1½-2 min to read. It did not contain any reference to contraception or pregnancy. Male and female versions of the story were developed. In the male
version, the female character's name was Karen. In the female version, the male character was named Bill. The subject was instructed to take the role of the character referred to as "You" in the story. At the beginning of the story, "You" (the subject) is getting ready to go out with Bill (Karen). The subject's roommate is getting ready to go home for the weekend. The roommate leaves and Bill (Karen) arrives. The subject and his or her date go to dinner and to a movie. After the movie, the two go to the subject's place to eat ice cream, talk, and listen to music. Passionate embraces ensue, and Bill tells the subject (or the subject tells Karen) that he (or the subject) would like to make love (piloting of the male version of the story indicated that when a female proposes having sex, males interpret this as an indication that the woman is taking birth control pills). The subject thinks about the situation while changing a record. More passionate embraces ensue. Then, subjects turned the page and were instructed to write an ending for the story that made sense to them. Subjects were assured there were no right or wrong answers.

Sexual Behavior Questionnaire. This questionnaire measured subjects' current relationship status, frequency of sexual intercourse, and use of contraceptives during the last three experiences with intercourse (i.e., personal risk taking). Subjects responded by checking the blank next to the option that most accurately described their experiences with sex and contraception. Options for relationship status were as follows: not currently in a relationship (0), currently involved in a long distance relationship (1), currently involved in a local relationship (2).

Use of contraceptives was measured for the three most recent times subjects had had sexual intercourse. For each of these times, subjects checked "yes" if they or their partner had used a method of contraception other than rhythm or withdrawal, "no" if they had not used a method of contraception other than rhythm or withdrawal, or "never had intercourse" if they had never had sexual intercourse. Responses to items measuring use of contraceptives were used to create two variables: (a) intercourse experience (0 = had had intercourse, 1 = has never had intercourse); (b) pregnancy risk taking (0 [never risked] to 3 [risked all three times]).

Options for frequency of intercourse corresponded to an 8-point scale. These options were "did not have sexual relations or sexual intercourse" and "had sexual relations without intercourse" (0), "had intercourse only one time" (1), "had intercourse less than once a month, but more than once" (2), "had intercourse less than once a week, but at least once a month" (3), "had intercourse about once a week" (4), "had intercourse about 2 days a week" (5), "had intercourse more than 2 days a week, but less than 6 days a week" (6), "had intercourse 6 or 7 days a week" (7). Subjects indicated their frequency of intercourse for three time periods: spring and/or summer of 1987, fall 1987 semester, and spring 1988 semester.

At the end of the questionnaire, subjects were asked whether they had thought about the purpose (or hypothesis) of the study and, if so, to describe what they thought the purpose was.

PROCEDURE

Subjects were run in small (four to eight persons), same-gender groups. Subjects and experimenters were matched on gender. The study was conducted as if it were two unrelated experiments. In both phases of the study, subjects were assured that their responses would be kept confidential and that their names would not be directly associated with the materials they completed.

Phase 1 was presented as a longitudinal survey measuring health-related thoughts and issues. During Phase 1, subjects completed a priming questionnaire designed to increase the accessibility of pregnancy or physical fitness concerns.

In Phase 2, subjects were taken to a room where another experimenter invited them to participate in a reading comprehension study. Subjects were given the story materials and instructed to assume the role of the character in the story referred to as you. They were directed to try to feel what that character was experiencing during events portrayed in the story. After reading the story, subjects wrote an ending. Then they completed the Sexual Behavior Questionnaire.

The experimenter instructed subjects to place all materials in an unmarked manila envelope as soon as each was completed. This prevented subjects from returning to the previously completed story and changing their responses. After the envelopes were turned in, the experimenter thanked the subjects, gave them a written debriefing sheet, and answered any questions.

Results and Discussion

Risk taking: Hypothetical intimate situation. Subjects' responses to the hypothetical intimate situation were embedded in the story ending they wrote. One male and one female rater coded story endings as either risk taking (story characters participated in unprotected intercourse) or risk avoidant (story characters either abstained from sexual intercourse or used some reliable method of contraception). Interrater agreement for this coding was 100%.

Overall, 36.6% of the subjects wrote pregnancy risk-taking endings. The percentages of risk-taking endings obtained for the four conditions are depicted in Figure 1.
As expected, concerns and prime interacted to affect risk-taking responses. To evaluate whether risk taking differed significantly as a function of concerns and prime, we used a statistical procedure recommended by Langer and Abelson (1972) for analyzing proportions (derived directly from the percentages). This procedure tests for significant differences among percentages by performing a z test on the arcsine transformation of the square root of the percentage.

As predicted, significantly fewer chronics (22.9%) wrote risk-taking endings than nonchronics (49.3%), \( z = 3.73, p < .0002 \). Further, the Concerns by Prime interaction was significant, \( z = 3.04, p < .003 \). Fewer chronics exposed to the pregnancy prime (13.5%) wrote risk-taking endings than chronics exposed to the neutral prime (33.3%), \( z = 3.80, p < .0005 \). In contrast, the priming manipulation had virtually no effect on the percentage of risk-taking endings written by nonchronics. Nonchronics wrote approximately equal percentages of risk-taking endings in the pregnancy (47.2%) and neutral (51.2%) prime conditions, \( z = .35, p = .26 \). The main effect for prime was not significant, \( z = 1.69, p = .09 \). No significant gender effects were found for any of the comparisons reported here (\( p \geq .19 \)). Fewer females (31.4%) than males (41.3%) wrote risk-taking endings, but this difference was not significant, \( z = 1.26, p = .19 \). Gender did not interact with concerns or prime.

This lack of effect for the prime in nonchronics is curious. All subjects exposed to the pregnancy prime described an unplanned pregnancy as a negative event in personal terms. Chronics and nonchronics did not differ in the amount of information listed on the pregnancy questionnaire (\( p = .65 \)). If only chronics had identified an unplanned pregnancy as negative or if nonchronics had described an unplanned pregnancy in very general (i.e., impersonal) terms, the lack of effect for the pregnancy prime in the nonchronics would have been more understandable.

**Personal pregnancy risk-taking behavior.** By examining the rate of self-reported actual risk taking, we can determine whether people with chronically accessible pregnancy concerns are less likely to report such risks than those who do not have these concerns chronically accessible. This pattern of data would parallel the risk-taking behavior observed in the hypothetical intimate situation. Only subjects who had experienced intercourse were included in the analysis. No effect for the priming manipulation was found for any results reported here (\( p \geq .32 \)).

As predicted, we found that chronics reported taking fewer risks (\( M = 0.47 \)) than nonchronics (\( M = 0.76 \)), \( F(1, 196) = 3.99, p < .05 \). Of interest was whether this effect for concerns could be readily explained by other variables such as gender, intercourse frequency, or relationship status or whether the effect was uniquely attributable to concerns. Consequently, a second analysis was performed that statistically controlled for the effects of these variables by treating them as covariates. In this second analysis, the main effect for concerns remained significant, \( F(1, 193) = 3.74, p < .05 \), indicating that concerns did indeed account for a unique portion of the variance in risk-taking behavior.

Relationship status was the only covariate significantly related to risk taking, \( F(2, 193) = 9.50, p < .002 \). Subjects not currently in a relationship reported more risk taking (\( M = 0.91 \)) than subjects in a long-distance (\( M = 0.45 \)) or local relationship (\( M = 0.41 \)). It is unclear why subjects not currently in a relationship reported more personal risk taking. These individuals may have been more likely to engage in "one-night stands," or their most recent experiences with intercourse may have occurred prior to beginning college. Both situations are associated with higher risk taking, but data from the current study do not permit clarification of these issues.

Although chronics wrote fewer risk-taking endings than nonchronics, this effect could have been confounded by a number of factors measured by the Sexual Behavior Questionnaire: beliefs about the purpose of the study (demand characteristics), intercourse frequency, relationship status, intercourse experience. However, of these potential explanations, only intercourse experience predicted risk-taking endings. Subjects who had never experienced sexual intercourse wrote fewer risk-taking endings (20%) than subjects who had had intercourse (42.9%), \( z = 3.61, p < .0003 \).

Further analyses revealed that intercourse experience may qualify the effect for concerns in the story comple-
tion task data. Regardless of the level of concerns, only 20% of the nonexperienced subjects wrote risk-taking endings. In contrast, among experienced subjects, significantly fewer chronics (24.4%) than nonchronics (56.7%) wrote risk-taking endings, $z = 7.47, p < .0001$. The Concerns by Intercourse Experience interaction did not reach statistical significance, $z = 1.45, p = .07$, but these data are suggestive of an interaction. Intercourse experience could not explain the lack of effect for the pregnancy prime in the nonchronics. There was no interaction between intercourse experience and prime or between intercourse experience, prime, and concerns ($p \geq .16$).

Together with data from Study 1, these data suggest that highly accessible pregnancy concerns may be more critical to pregnancy risk avoiding action than beliefs about the severity of unplanned pregnancy or perceived susceptibility. In Study 1 females rated the impact of unplanned pregnancy more severely and perceived themselves as more susceptible than males, but in Study 2 it was concerns (chronically accessible pregnancy concerns), not gender or a Concerns by Gender interaction, that predicted decreased risk taking.

**GENERAL DISCUSSION**

Data from Studies 1 and 2 suggest that persons will exhibit more pregnancy risk avoiding actions when concerns about unplanned pregnancy are chronically accessible. These data implicate a process whereby cognition may guide action in the contraceptive domain. This process may be used to explain patterns of cognition-action inconsistency present in the contraceptive literature discussed earlier. For example, this process would propose that contraceptive knowledge is necessary (i.e., must be available in memory) but not likely to produce pregnancy risk avoidance. Pregnancy concerns must also be accessible to produce pregnancy risk avoidance.

Although these data are specific to the effect of pregnancy concerns on pregnancy risk avoidance, they also support the utility of the construct accessibility perspective for understanding how and when cognition guides action. Moreover, these data raise new questions for future research that, if addressed, could enhance both basic understanding in the construct accessibility area and an understanding of pregnancy risk avoidance.

First, there is the question of the lack of effect that temporarily accessible pregnancy concerns appeared to have on the nonchronics (Study 2). Although both chronics and nonchronics presumably had pregnancy concerns available in memory, only chronics decreased their risk-taking responses. This type of Concerns by Prime interaction cannot be explained readily: Gender differences, differences in experience with intercourse, and demand characteristics failed to predict the pattern of differences we obtained. All subjects in the pregnancy prime condition described the consequences of an unplanned pregnancy in very personal and negative terms. Thus, all subjects should have experienced an increased activation of constructs for pregnancy concerns. Social desirability may have influenced responses to the story completion task, but it is not clear why this bias would correlate with chronic accessibility or why individuals who found it socially undesirable to write a risk avoiding ending would find it socially desirable to report engaging in pregnancy risk taking.

Previous research regarding construct accessibility does not offer ready or simple explanations for this Concerns by Prime interaction. In fact, the interaction is at odds with previous findings in the area. In person perception research, temporarily accessible personality trait constructs have influenced the judgments of both nonchronics and chronics (Bargh et al., 1986; Bargh, Lombardi, & Higgins, 1988). When the chronically accessible trait was primed, the effect of judgment was greater than that observed for the chronically accessible trait in the absence of the prime (Bargh et al., 1986). Our data are consistent with the latter effect but not the former.

We speculate that the lack of effect for the prime in nonchronics may reflect differences between the nature of the construct of pregnancy concerns and the other constructs that have been previously studied. Pregnancy concerns may be more self-relevant, may be more vivid, or may contain more anxiety-arousing components than constructs such as personality traits, boy-meets-girl scripts, or attitudes toward presidential candidates. Thus, these data raise new questions regarding the nature of constructs and whether differences among constructs have implications for the spread or duration of activation.

These data may also challenge researchers in the construct accessibility area to move from a construct level to a network level of analysis, for it is possible that the Concerns by Prime interaction we obtained occurred because chronics and nonchronics differ in the nature of the associative network containing pregnancy concerns. If so, network-level differences could have confounded the effect of the priming manipulation. For example, the presence of chronically accessible pregnancy concerns could be correlated with a strong association between pregnancy concerns and risk avoiding action tendencies (e.g., use of condoms). It seems reasonable to suspect that chronics might have developed an association between pregnancy concerns and pregnancy risk avoiding action tendencies, given that they report thinking frequently about the negative consequences of unplanned pregnancy. If such an association exists, exposure to the pregnancy prime would activate both pregnancy concerns and risk avoiding action tend-
encies in chronics. Chronics exposed to a pregnancy prime would therefore be expected to exhibit increased risk avoidance. Without this association, nonchronics would not be expected to exhibit any change in amount of risk avoidance despite the increased temporary accessibility of pregnancy concerns created by the prime.

Questions about the nature of the associative network in chronics and nonchronics relate to another important research question: How is it that potentially anxiety-arousing constructs such as concerns about the negative consequences of unplanned pregnancy come to be chronically activated? Perhaps an association between constructs for pregnancy concerns and constructs representing actions that the individual feels able to use to prevent pregnancy allows the chronic to reduce anxiety associated with the accessibility of pregnancy concerns.

Of course, constructs other than concerns about the negative consequences of unplanned pregnancy may guide pregnancy risk avoidance. An additional question for future research is: What other constructs can guide pregnancy risk avoidance when highly accessible? This question may best be answered by building on previous research on attitude-behavior relations. For example, the health belief model would argue that barriers to pregnancy risk avoidant action would be important predictors of pregnancy risk avoidance (Janz & Becker, 1984). Accordingly, barriers such as concerns regarding the partner's negative response to pregnancy risk avoidant actions might promote pregnancy risk taking if such barriers were highly accessible. However, the theory of reasoned action holds that intentions are the most important predictors of behavior. Perhaps highly accessible intentions to use contraception can guide pregnancy risk avoidance.

APPENDIX

The story used in the study was in two separate versions, one given to male subjects and the other given to females. The male version is given below, with brackets enclosing text in the female version which differed from that of the male version. Both stories were written by Denise Hanson and Julie Hirsch.

DIRECTIONS: We are interested in how reading comprehension is influenced by role taking. This story is about two college students, a man and a female. The female's name is Karen. [The male's name is Bill.] The male [female] character is only referred to as "you." As you read this story, imagine that you are the man [woman] in the story. Every time you read the word "you," put yourself in this man's [woman's] shoes. Imagine that you are experiencing what he [she] is experiencing, and thinking what he [she] is thinking. Please turn the page and begin reading the story NOW.

STORY

You are in your room with your roommate. Your roommate is packing to go to his [her] parents' house for the weekend, and you are getting ready to go out with Karen [Bill]. You are filling your roommate in on your feelings towards Karen [Bill], whom you've been seeing for a few months now and have come to really like. You tell him [her] how sweet she [he] is . . . how she [he] is always concerned about your feelings and what you're thinking. You think about how you two laugh so much together. You feel really good inside.

As your roommate is on his [her] way out, Karen [Bill] knocks and he [she] lets her [him] in. You say, "See you Sunday!" to him and tell Karen [Bill] you'll be right out. Karen [Bill] and you hang around your place for awhile listening to music, making a few jokes, and laughing a lot. After awhile, the two of you decide to get some dinner. You have a quiet dinner together, sometimes searching for conversation, sometimes not. After dinner you go to a movie. The movie turns out to be bad, but the evening is still really nice and you tell Karen [Bill] so as you're walking together. She [He] squeezes your hand a bit tighter for a moment, looks at you and says, "I'm really glad you had a good time.

I did too. . . . Hey, how about getting some ice cream?" You say, "Okay, but do you want to bring it back to my place? It might be crowded, and it would probably be easier to talk there." Karen [Bill] agrees. You get the ice cream and go home.

As you open the door, Karen [Bill] puts the ice cream down and you pull one another together in a gentle embrace. You kiss each other softly, then go over to the stereo to choose some music. You get some spoons, and soon the two of you are sitting on the floor eating ice cream and laughing again about . . . you don't even know what.

"You're such fun," Karen [Bill] says. "You're someone I consider very special." You see her [him] blush as she [he] says this, and before you can say anything, she [he] leans over and kisses you. You return her [his] kiss first lightly, then more and more passionately. You hold each other tightly, and your lips press hard against each other's . . . . You're both slightly breathless when you and Karen [Bill] finally pull apart. You say, "I'd like to make love with you." ["I'd like to make love with you," he says.]

For a moment, all you do is look into each other's eyes. Then, you realize the record has ended. You get up and find a quiet and mellow favorite of yours. As you slowly lower the turntable's dustcover, you think about the situation. You straighten up to find Karen [Bill] behind you, you turn, and the two of you slow dance for awhile. It feels good to be close with someone—to have Karen's [Bill's] arms around you. You wish this moment would never end, and you think about how wonderful it would be to make love and spend the night together—to lie together and have your arms around each other the whole night long.

You pull apart from her [him] for a moment to look at her [him]—you touch her [his] face softly with your hands—you kiss her on the nape of her [his] neck and your hands move slowly down her [his] back.

"You're so wonderful," she [he] says, pulling you closer . . . . You feel that you can't get close enough to her [him]. Her [His] eyes are on your eyes and yours on hers [his]. She [He] kisses your neck and breathes soothingly into your ear.

WRITE AN ENDING TO THIS STORY, NOW, IN THE SPACE PROVIDED. THERE IS RIGHT OR WRONG ANSWER.

NOTES

1. More females than males made responses to the screening measure indicating that pregnancy concerns were likely to be chronically accessible. In both Study 1 and Study 2 an attempt was made to recruit equivalent numbers of males and females with and without chronic concerns.

2. Responses were also coded for references to sexually transmitted diseases (STDs), contraception, and vague or nonspecific concerns. Interrater agreement was 95.3% for STDs, 100% for contraception,
and 85.6% for nonspecific concerns. Subjects who made a reference to STDs, contraception, or nonspecific concerns were not included in the nonchronic group.

3. These types of beliefs were chosen because findings in the contraceptive literature identify relationship with parents (e.g., Inazu & Fox, 1980; Smith, Weinman, & Mumford, 1982), academic achievement (e.g., Devanev & Hubley, 1981; Jones & Philliber, 1983), and feelings about or experience with abortion (e.g., Durant, Jay, Linder, Shoffit, & Litt, 1984) as having an impact on contraceptive intentions or behavior.

4. Results for demographic items are not presented. No demographic variables were associated with the screening measure or variables from the Pregnancy Impact Questionnaire (p > .20). No subject perceived a connection between the screening measure and study materials.

5. The effect size associated with the multivariate F for the concerns main effect is small (F = .03); assuming alpha = .05, the power of this test is approximately .51 (lambda = 5.4, u = 5, v = 176; Cohen, 1988).

6. Two additional primes, career and relationship, were included for exploratory purposes only. Subjects in these exploratory conditions completed the Sexual Behavior Questionnaire. Their data were included in analyses examining the relation between chronically accessible pregnancy concerns and personal risk taking.

7. Analyses involving self-report data included data from all subjects in the exploratory career and relationship conditions (see Note 6) as well as those in the pregnancy and neutral prime conditions who had experienced sexual intercourse. The resulting sample consisted of 78 male chronic, 72 male nonchronic, 69 female chronic, and 70 female nonchronic.

8. The assumption of equality of regression slopes was met in this analysis.

9. Only two subjects (1%) indicated they had any idea of the purpose of the study (and the idea of each was incorrect).

REFERENCES


