

AN ABSTRACT OF THE THESIS OF

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The purpose of this study was to explore the association between sex-role orientation and contraceptive behavior in an unmarried population. One hundred and twenty-eight sexually active unmarried college students comprised the sample. The test instrument was made up of the Sex-Role Stereotypic Questionnaire developed by Rosenkrantz, Vogel, Bee, Broverman, and Broverman (1968) and the Biographic Questionnaire designed by the author.

Data analysis fell into two categories: descriptive and statistical. In preparation for the statistical analysis subjects were classified according to each of four variables: (1) personal sex-role orientation, (2) orientation toward education for women, (3) orientation toward out-of-home careers for women, and (4) contraceptive behavior. Chi-square contingency computations failed to show any significant association between the first three variables and contraceptive behavior. Additional associations were explored and the following were found to be significant

at the .10 level or below: (1) the heterosexual relationship in which intercourse last occurred and the frequency of intercourse, (2) the frequency of intercourse and use of the pill as a contraceptive, and (3) experience with impregnation and use of low-risk contraception.

Interpretation of the data was made in the context of the reward-alternatives model which states that an individual will attempt to move toward the alternative in his perceptual field which he believes will be most rewarding. Two possible interpretations were presented. First, that sex-role orientation was not an intervening variable which determined the alternative which is most rewarding with regard to contraceptive behavior. It was suggested that the negative consequences of nonmarital pregnancy were viewed with equal distaste and seen as equally avoidable by those of differing sex-role orientations. The second interpretation was that sex-role orientation did relate to contraceptive behavior, but that characteristics of the sample and the test instrument obscured the results.

Suggestions for future studies included: (1) using pair-patterns of sex-role orientation, (2) instituting a longitudinal study, (3) focusing on psychological variables, (4) attempting to assess the validity of the test instrument, (5) obtaining a random sample of sexually active unmarried subjects, and (6) further assessing the

relationships among the heterosexual relationship in which intercourse occurs, intercourse frequency, and contraceptive behavior.

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in Sexually Active College Students

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SELECTED ASPECTS OF CONTRACEPTIVE BEHAVIOR
IN SEXUALLY ACTIVE COLLEGE STUDENTS

I. INTRODUCTION

Investigations into the sexual behavior of single American college students date back to the turn of the century. A wide range of variables have been explored and a variety of theoretical frameworks have emerged (Bowman, 1974; Cannon and Long, 1970). Conspicuously absent from the literature have been studies of the contraceptive behavior of these same students.

The first attempt at approaching the subject appears to be a 1940 study by Riley and White, who interviewed 447 single women on a variety of sex-related subjects. A time lapse of 20 years ensued before Kirkendall (1961) included questions on contraception in his study of nonvirgin college men. In the early 1970's several exploratory studies were published on the use and nonuse of contraception by single college-age persons (Bauman, 1970; Crist, 1971; Fujita, Wagner and Pion, 1971; Lundy, 1972; and Zelnick and Kantner, 1972). To date, no major effort at theory construction has been attempted.

The need for further study of the contraceptive behavior of sexually active unmarried couples is established by recent research and census data. Emerging from these studies are at least four trends which suggest the need to

better understand the contraceptive behavior of young unmarried populations.

First, the prevalence of nonmarital intercourse among college students has been well established. No fewer than 31 percent of the couples on college campuses today have experienced intercourse. As many as 65 percent may have done so (Eastman, 1972; Jackson and Potkay, 1973; and Robinson, King, and Balswick, 1972).

Second, rising illegitimacy and abortion rates suggest that nonmarital conception among women of childbearing age is far from rare (Cutright, 1972; Oregon State Health Division, 1974; U.S. Bureau of the Census, 1972).

Third, among women who experience nonmarital conception, those under the age of 25 are particularly susceptible and constitute large proportions of the current illegitimacy and abortion rates (Cutright, 1972; Ferriss, 1971; Oregon State Health Division, 1974; and Dauber, Zalar, and Phillips, 1972).

Fourth, although consistent use of low-risk contraceptive methods can reduce the probability of conception to almost zero (Life and Health, 1972, pp. 256-257), recent investigations into the contraceptive behavior of sexually active single persons show that many are not contraceptive users (see Review of Literature, Chapter II of this thesis).

Attempts to understand contraceptive behavior among unmarried couples have provided few clues. With the possible

exception of age, education, and frequency of intercourse, variables which consistently co-vary with contraceptive use-nonuse have not been demonstrated.

Among married couples a variable which has been consistently associated with low fertility is the participation of the wife-mother in the labor force (Blake, 1965; Collver and Langlois, 1962; and Freedman, 1962). That this low fertility is accomplished by means of relatively consistent use of low-risk contraceptive techniques in at least one sample of fecund career women was shown by Safilios-Rothschild (1972).

To account for these research results, Scanzoni and McMurry (1972) have used a rewards-alternatives model. They suggest that when positively valued alternatives to the traditional female sex-role are available, fertility drops. Blake (1965, 1969) and Davis (1967) have also argued that the pro-natalistic values inherent in traditional sex-roles encourages higher fertility than the incorporation of satisfying alternatives to traditional familial roles. It can therefore be argued that among married samples the exercise of options not characteristically associated with traditional sex-role orientations bears a relationship to fertility rate; and that the fertility rate is, in part, a result of contraceptive practices. To date, there has been no direct link between sex-role orientation and contraceptive practice.

Purpose

The purpose of this study is to explore the relationship between sex-role orientation and selected aspects of contraceptive behavior among sexually active never-married college students of both sexes. Sex-role orientation includes three dimensions: (1) personal sex-role orientation; (2) orientation toward education for women; and (3) orientation toward out-of-home careers for women.

Definitions

Virgin: Subject who reports never having experienced sexual intercourse.

Nonvirgin: Subject who reports having experienced sexual intercourse.

Sexually active: Subject who reports having petted to orgasm with a member of the opposite sex and/or having experienced sexual intercourse with a member of the opposite sex within the six months prior to testing.

Abstinence: The report of having petted to orgasm with a member of the opposite sex within the six months prior to testing, but not having experienced sexual intercourse during the same time period.

Low-risk contraception: Pill, I.U.D., condom, diaphragm, and foam or jelly.

High-risk contraception: Rhythm, withdrawal, douche, morning-after pill, no contraception, and "don't know".

Never-married: Subject reports never having been legally married.

Sex-role orientation: The orientation of the subjects toward traditional versus nontraditional sex-role behaviors. Three measures of sex-role orientation were used.

Personal sex-role orientation: The extent to which an individual ascribes to himself traits which are stereotypically masculine and/or feminine, as measured by the Stereotypic Sex-Role Questionnaire.

Orientation toward education for women: The level of educational attainment expected by the female for herself or by the male for his future wife, as measured by the Biographical Questionnaire.

Orientation toward out-of-home careers for women: The career pattern expected by the female for herself or by the male for his future wife, as measured by the Biographical Questionnaire.

Traditional female role: A set of values and expectations which emphasize the duties and rewards of homemaking and childrearing activities for women in this culture; included in this definition is an emphasis on the expressive role for women.

Traditional male role: A set of values and expectations which emphasize the duties and rewards of the instrumental role for men in this culture, i.e., emphasis on rationality, leadership and career.

Assumptions

There are four assumptions made in this study. First, that in the majority of cases the costs of nonmarital pregnancy, both to individuals and society, outweigh the advantages. Therefore, pregnancy outside of marriage is not a valued goal in this culture.

A second assumption is that subjects who are willing to be included in the study will answer the questionnaire honestly. Because the subject is given assurance of anonymity and confidentiality, he should feel no need for dishonesty.

The third assumption is that personal sex-role orientation can be measured by the Sex-Role Stereotypic Questionnaire developed by Rosenkrantz, Vogel, Bee, Broverman, and Broverman (1968), and that orientation toward education for women and orientation toward out-of-home careers for women can be measured by the Biographical Questionnaire designed by the author.

A fourth assumption is that sexually active subjects who report having petted to orgasm with a member of the opposite sex within the six months prior to testing, but who do not report experiencing sexual intercourse during the

same time period, are practicing a form of "no-risk" contraception.

Hypotheses

Hypothesis I: There will be no significant association between personal sex-role orientation and contraceptive behavior.

Hypothesis II: There will be no significant association between orientation toward education for women and contraceptive behavior.

Hypothesis III: There will be no significant association between orientation toward out-of-home careers for women and contraceptive behavior.

Limitations of the Study

There exist four major limitations to this study.

They are as follows:

1. Because a nonrandom sample was employed, it is not possible to generalize the results to other populations. It is impossible to know how using a sample of college students attending a class in Human Sexuality biased the results of the study.
2. Because the nature of the behaviors being investigated were highly personal and confidential, direct measurement of validity is not possible.

3. Although heterosexual behavior requires two participants, this study investigated only individual behavior. Therefore, an important element of the situation may have been lost.
4. Although much human behavior may be influenced by unconscious and apparently irrational factors, the procedures employed in this study focus on conscious and rational aspects of sex-role orientation and contraceptive behavior. Therefore, what may be important components of these behaviors are not measured.

II. REVIEW OF LITERATURE: CORRELATES OF CONTRACEPTIVE BEHAVIOR

The focus of this review of literature is on the identification of variables which have been found through research to be associated with the contraceptive behavior of unmarried nonvirgin populations. However, when the variables under consideration were particularly relevant to the purpose of this study and no research could be found which investigated an unmarried sample, studies using married samples were included.

Contraceptive Use: Frequency and Methods Among Unmarried Adolescents

Three major investigations into the sexual behavior of adolescents appear in the literature. Although extensive efforts were made by each of the authors to select a representative and/or random sample of unmarried adolescents, the need to obtain parental permission before interviewing a minor on an emotionally laden topic defeats this goal. Of necessity the samples in the following studies consist only of young people who voluntarily agreed to be interviewed and for whom parental permission for the interview was given. It is impossible to know how this biased the results.

Each of the three following studies covers a wide range of sexual attitudes and behaviors. Only those results directly related to contraceptive use will be reported here.

Schofield (1965) used a variety of sampling techniques in an attempt to obtain a representative population of unmarried London adolescents, ages 15 to 19. He was able to interview 934 males and 939 females.

Of the subsample of approximately 20 percent of the males and 12 percent of the females who had experienced intercourse at least once in their lives, 43 percent of the males and 20 percent of the females reported they "always" used some form of contraception; 25 percent of the males and 61 percent of the females reported they "never" used contraception. Of the methods available (the pill was unavailable to this sample), the condom was by far the most popular, with 84 percent of the males and 78 percent of the females reporting experience with it. Rhythm, withdrawal, diaphragm, chemicals, and "other" followed in that order.

Kantner and Zelnick (1972, 1973) and Zelnick and Kantner (1972) obtained a national probability sample of 4,611 women ages 15 to 19. Only the 92 percent who had never been married are included in the following analysis. Of the nonvirgin 15-to-19 year-olds (28 percent of the sample), 53 percent reported using no contraception during their last intercourse. As age increased, the number of women who "never" use contraception decreased, but so did the percentage of women who reported "always" using contraception. Thus, by age 19 only 11-12 percent had no experience with contraception, but only 21.6 percent reported

consistent use. The pill and the condom were the most popular low-risk methods; withdrawal the most popular high-risk method. Combined these three methods accounted for 70 percent of all methods used at last intercourse. Zelnick and Kantner (1972) found contraception use to be positively related to age, education, socio-economic status, frequency of intercourse, attitudes favoring abortion, and frequency of church attendance (blacks only). Negatively associated with contraceptive use was farm residence, fundamentalist Protestant religion, and frequency of church attendance (whites only).

Sorensen (1973) surveyed 2,042 households randomly selected from 200 sample areas provided by a national survey research organization. In each household found to contain at least one adolescent, ages 13 to 19, an attempt was made to obtain an interview. The data from 411 questionnaires form the basis of his report. Unfortunately, Sorensen does not always present the exact characteristics of subsamples with which he is working.

Sorensen reported that 52 percent of his sample were nonvirgins. Of this subsample 47 percent of the males and 40 percent of the females used contraception at last intercourse. (Included in Sorensen's total sample were married adolescents. It is unclear if this percentage included them.) The pill and the condom were the most popular methods used; withdrawal ranked a close third. Unlike all

other studies in this review, Sorensen discovered a negative relationship between age and contraceptive use among males. The use of contraception among females increased only slightly with age. A positive relationship existed between use of contraception during first intercourse and the percentage of adolescents who took precautions during the month preceding the interview. (The number of adolescents experiencing intercourse in the preceding month was not presented; therefore, the number that equals 100 percent is not know.) A third relationship involving characteristics of the personal relationship in which intercourse occurred will be discussed in another section of this review.

Contraceptive Use: Frequency and Methods Among College Populations

Studies exploring the contraceptive behavior of sexually active unmarried college populations are relatively new in the literature. They are exploratory in nature and seldom attempt to employ sophisticated sampling or measuring techniques.

An exception to the above statement would be the Kantner and Zelnick (1972) survey. Interestingly, the authors reported the highest use of low-risk contraception among a college population of any study reviewed. Of a subsample of 94 coeds living in college dorms 75 percent reported using low-risk contraception at last intercourse; 71.4 were

using either the pill or the condom. Almost all reported using contraception at some time in their lives.

In another well designed study, Bauman (1970) drew a random sample of students attending a major state university in the Southeast and established a subsample of 54 nonvirgin men and 43 nonvirgin women. Of this subsample about 60 percent reported the use of no contraception or of unreliable methods during their first intercourse. About 40 percent reported that they "usually" used no contraception or used unreliable methods. The condom was the most popular contraceptive; only 3 percent reported using the pill. Women who reported that their first intercourse was planned were significantly more likely to use low-risk contraception at first intercourse than women who did not plan their first intercourse. This relationship did not hold for men.

Fujita et al., (1971) defined "sufficient protection" as the use of some form of contraception, including withdrawal or rhythm, on every occasion intercourse had occurred within the relationship. In a subsample of 57 males and 82 females who had engaged in intercourse during the year preceding testing, he found that 54 percent of the males and 46 percent of the females did not meet his criteria.

Crist (1971) found that 64.7 percent of her subsample of 393 sexually active coeds on a large Southeastern campus were using no contraception or were using high-risk

contraception. The most common low-risk method was the condom. The most common high-risk method was withdrawal.

Lundy (1972) found that 45 percent of his sample of 282 sexually active female undergraduate students were contraceptive users. This subsample emerged from a larger sample of 600 female students attending psychology classes in five small liberal arts colleges in the Midwest.

Among the 1,552 British coeds who answered the questionnaire used by McCance and Hall (1972), 44 percent had experienced sexual intercourse. In this subsample the use of low-risk contraception increased significantly with the frequency of intercourse and the stability of the relationship. Age at first intercourse was positively related to the use of contraception on that occasion, but was not related to present contraceptive practice. The condom was the most popular method of contraception (38 percent reported its use at last intercourse), with the pill following closely in second place (30 percent). Withdrawal and/or the safe period accounted for 26 percent of the methods used. Other, not known, or none made up the remaining 6 percent.

Contraceptive Information Among Unmarried Populations

The exact relationship between knowledge of contraception and its use remains unclear. The following studies

suggest that awareness of contraceptive methods is widespread among a variety of populations. The evidence suggests that while knowledge may be a necessary condition for contraceptive use among nonvirgins, it is by no means sufficient.

Grinder and Schmitt (1966) administered multiple choice questions designed to assess knowledge of the rhythm, condom, diaphragm, and douche methods of contraception to 304 single white female social science students at a large Midwest university. The subjects were credited with knowledge of the method if they knew when, how, and by whom it should be used. The results revealed that 14 percent of the sample understood no contraceptive method; 54 percent understood one or two methods; and 32 percent understood three or four methods. The data suggested that the extent of knowledge was related to class standing, age at which dating started, age of men dated, frequency of dating, access to an apartment, being in love, and engaging in sexual intercourse. No measure of actual contraceptive behavior was attempted.

Among their sample of American teenagers, Zelnick and Kantner (1972) reported, "Knowledge of oral contraception is virtually universal among whites and very widespread among blacks, regardless of intercourse status" (p. 362). In this study the subjects were credited with "knowledge" of a method if they reported on a check list of methods that they "had heard of it". Among nonvirgin white

teenagers, 99.8 percent had heard of the pill; 95.7 percent the condom; 93.1 percent, withdrawal; 90.4 percent, douching; 84.8 percent, safe period; 84.6 percent foam, jelly or cream; 83.6 percent, the diaphragm; and 66.1 percent, the IUD. Among virgin teenagers awareness of contraceptive methods was slightly lower. Knowledge of contraception was found to be positively related to age, intercourse status and race (white).

Schofield (1965) asked his British adolescents an open-ended question regarding their knowledge of contraception. The self-reported answers were recorded and later analyzed. Among the 590 boys and 671 girls without sexual experience, 94 percent of the boys and 87 percent of the girls knew of the condom. The second most popular category was "other", which in this study included the pill. The diaphragm and the safe period ranked third and fourth respectively. It was not reported how many of the inexperienced teenagers knew of no contraception. Of the experienced group, only five percent of the boys and seven percent of the girls reported not using contraception because they did not know of it.

From 104 college women who applied for abortion counseling, Monsour and Steward (1973) randomly selected 20 for study. Of these, 65 percent were not using contraception despite "adequate knowledge regarding contraception and

it's availability on campus." The term "adequate knowledge" was not defined.

Furstenburg (1971) interviewed 337 black low-income pregnant teenagers regarding their knowledge and use of contraception. Eight percent of the girls knew of the pill, but only two girls had used it; 33 percent knew of nonprescription contraception, but less than 10 percent had used it; 66 percent knew of condoms and 37 percent had used them. Only 6 percent of the sample were unable to identify any method of contraception.

Perceived Availability of Contraception and Contraceptive Behavior

The relationship of perceived availability of contraceptive services to the practice of contraception yields ambiguous results. In Crist's (1971) sample of 265 nonvirgin college coeds who reported not using contraception, 86 percent reported that the reason was their ignorance of where to obtain it. Although contraception for unmarried students was not available at the university health service, an active sex and contraception education program was in progress on campus which included lectures and group discussions in university living groups. Considering the availability of contraception in most doctors' offices and in drug stores, it is difficult to assess the validity of this response.

In contrast to Crist's results, Brashear (1971) found that even though contraceptive services for unmarried coeds were unavailable at four of the five university health centers on the campuses from which she drew her sample, 87.3 percent of the coeds agreed that contraception was easy to obtain. Half of these were virgins; half were nonvirgins. And yet 70 percent of the nonvirgins did not obtain contraception before engaging in intercourse. Brashear concluded that "availability of contraception, perceived or real, is not a significant variable" (p. 33).

Of the white 15-to-19-year-olds in the Zelnick and Kantner (1972) survey who did not use contraception for their last intercourse, only 14 percent reported that the reason was due to the unavailability of contraception. And although many of Furstenburg's (1971) pregnant girls showed signs of confusion about where to obtain contraception, this was not among the self-reported reasons for not using it.

Self-Reported Reasons for the Nonuse of Contraception

Because a list of the self-reported reasons for not using contraception becomes unwieldy and because the validity of such responses is impossible to judge, they will not be dealt with in any detail in this review. Instead, it is suggested that the reader who wishes to pursue this variable further refer to the following studies, all of

which include results in this area: Crist (1971); Furstenberg (1971); Goldsmith, et al., (1972); McCance and Hall (1972); Schofield (1965); Sorensen (1973); and Zelnick and Kantner (1972).

Parent-Daughter Relationship and Contraceptive Behavior

It is interesting to note that two investigators using very different populations found similar aspects of the parent-daughter relationship to be significantly related to contraceptive use in nonvirgin unmarried women. In his sample of 337 low-income pregnant teenagers, Furstenburg (1971) found that contraceptive information and use was related to the mother's knowledge of the daughter's sexual activity. Brashear (1971) sampled 398 college coeds and found that although fewer nonvirgins than virgins discussed sex with their parents, the outstanding relationship to use of low-risk contraception was the parents' knowledge of their daughter's sexual standards. No studies investigating the parent-son relationship were found.

Heterosexual Relationships and Contraceptive Behavior

In their efforts to understand the contraceptive behavior of unmarried college students, a number of investigators have used differing levels of heterosexual involvement as an independent variable.

In his study of 200 sexually active college men, Kirkendall (1961) defined a continuum of six "levels of liaison" progressing from Level I: "Intercourse with prostitutes" to Level VI: "Intercourse with fiancées." He found that the percentage of men who reported using contraception increased from none at the first level to 92 percent at the most intimate level. It must be noted, however, that Kirkendall used a relatively unstructured interview schedule and did not obtain information from all subjects on all relevant behaviors. The percentage of men for whom there was no information regarding contraceptive use at level I equaled 91.3 percent and decreased sharply to 8 percent at level VI. It can be concluded that while the use of contraception in this sample was positively related to the level of heterosexual involvement, so was the apparent willingness of subjects to voluntarily discuss their contraceptive behavior. How this biased the results is not known.

Two types of sexual relationships were defined by Sorensen (1973) in his study of American adolescents. "Serial monogomy" involves an unmarried virgin "who is having a close sexual relationship with a sex partner and who rarely or never has sex with another person during the life of the relationship" (p. 219). The sexual "adventurer" is "a young man or young women who seeks many sexual mates" and has no interest in a monogomous relationship (p. 249).

"Monogomy" and "adventurism" were found to relate to contraceptive behavior. Forty-eight percent of the monogomists compared to 17 percent of the adventurers reported the use of some form of contraception during first intercourse. Among those who had experienced intercourse during the preceding month, more monogomists than adventurers used contraception.

In their study of British coeds, McCance and Hall (1972) also found that the more established the relationship, the greater the use of contraception. In a subsample of coeds who had experienced intercourse during the last six weeks, 70 percent who had intercourse with their fiances reported using contraception every time. Fifty-nine percent who had intercourse with "steady" partners and 39 percent who had intercourse with "other" partners reported using contraception regularly. The use of low-risk contraception was also related to the level of heterosexual involvement. Seventy-four percent of the "fiance" group used either the pill or the condom; 68 percent of the "steady" partner group and 58 percent of the "other" partner group reported the same.

Brashear's (1971) study of college coeds raises the question of what constitutes the significant variable within the relationship. She found a positive correlation between the use of the pill and (1) "staying with a guy", with or without intercourse, and (2) the frequency of

intercourse. However, the level of the relationship (affectional or engaged) was not a significant variable in choosing low-risk contraception. Zelnick and Kantner (1972) also failed to find a correlation between choice of the pill as a contraceptive and plans to marry.

Psycho-Social Correlates of Contraceptive Behavior

In an effort to identify some of the psychological correlates of contraceptive use in an unmarried population, Lundy (1972) administered Rotter's Internal-External Scale, Rokeach's Dogmatism Scale and Roseburg's Self-Esteem Scale to 600 female undergraduates from five small liberal arts colleges. He hypothesized (1) that since past research has demonstrated "internalizers" to show "greater tendency toward self-regulation with regard to objective reality than externalizers", those students who tended to internalize the locus of control for their lives would be more likely to take self-protective measures during intercourse; (2) that since persons scoring high in dogmatism tend to exhibit resistance to cognitive input differing from their own, sexually active "dogmatists" would be unlikely to admit the new cognitions necessary to realize responsibility for contraception; and (3) that since a large percentage of unmarried sexually active coeds in the Kaats and Davis study (1970) perceived others as disapproving of their

behavior, those who actively plan for intercourse by contraceptive preparedness would reflect some loss of self-esteem. The first two hypotheses were confirmed; the third was supported but not confirmed.

MacDonald (1972) also found internally directed students to be more likely to use contraception. Using one of the same test instruments (Rotter I-E Scale) he administered it to 508 undergraduates. Sixty-two percent of the nonvirgin internally directed students used some form of contraception. Thirty-seven percent of the nonvirgin externally directed students used contraception.

By combining a review of literature and their own clinical observations, Sandberg and Jacobs (1971) identified 14 psychological factors related to the nonuse or ineffective use of contraception among a variety of populations. They were as follows: (1) denial of the possibility of pregnancy, of the effectiveness of contraception, and of personal responsibility for contraception; (2) love which becomes equated with romantic self-sacrifice, total surrender, and/or the gift of pregnancy; (3) guilt about planning ahead for intercourse and guilt resulting from the belief that intercourse is bad and deserves to be punished (i.e., pregnancy); (4) shame or embarrassment of exposing ignorance of contraception or of sexual behaviors to others; (5) coital gamesmanship, i.e., the ways of using sexuality to manipulate a relationship; (6) sexual identity conflicts

which may result in the need to prove one's masculinity or femininity; (7) hostility which may be acted out in pregnancy with the partner, parents, self, or society as the target; (8) masochism, either passive or active, the purpose of which is to prove one's worthlessness; (9) eroticism or sexual pleasure derived from the thrill of risk-taking; (10) nihilism, i.e., feelings of helplessness and hopelessness; (11) fear of side effects of contraceptives, fear of the inability to control sexual responses, either one's own or one's partners, and fear of responsibility; (12) abortion availability; (13) opportunism which may take the form of immediate pleasure or may serve to initiate, maintain, or prolong a relationship; and finally, (14) the relationship between the patient and the source of contraceptive services (i.e., doctor, clinic, etc.).

Using the case study approach, psychiatrist Lidz (1969) concluded that the following traits were most likely to be indicative of women, both married and single, who would be effective contraception users: (1) having several children; (2) being currently engaged in an active and enjoyable sexual relationship, but to feel reason to postpone pregnancy; (3) the fear of pregnancy for either realistic or neurotic reasons; (4) the fear of the dependency of a child; (5) the fear of commitment; (6) the preference for a masculine identity. Negatively associated with contraception use are the following: (1) the attitude that sex for

pleasure only is sinful; (2) a need to "prove" oneself through the creative process of pregnancy; (3) the use of contraception only to satisfy the partner; (4) consideration of children as the true meaning to life; and (5) the need to alleviate the loneliness and depression of life by having a child.

Kar (1971) used a variety of tests to contrast personality traits of 69 married white women who reported the use of contraception prior to their first pregnancy with 89 married white women of similar socioeconomic status who reported using contraception only after their first pregnancy. Early contraceptive acceptance was positively and significantly related to: (1) striving toward long-term and self-improvement goals, rather than toward short-term, material, and economic goals; (2) willingness to sacrifice short-term goals for long-term goals; and (3) an optimistic outlook toward social order, the community leadership, and the future in general.

Similar results were reported by Bakker and Dightman (1964) who interviewed and administered personality tests to 72 couples about to begin using the pill. The results were matched against later behavior. The authors reported the following traits characterized the pill-forgetters: (1) reluctance to assume responsibility; (2) tendency to act on impulse; and (3) inability to arrange their lives with a long-range perspective. Pill forgetting was further

enhanced by conflict between husband and wife regarding sexuality, dependency, level of self-confidence, or general temperament. The non-forgetting couples were characterized by marital partners who were neither significantly similar nor opposite to each other.

Siegler, Rogers, Kriegsman, and Martin (1968) and Rodgers and Ziegler (1968) also found both individual personality traits and couple characteristics to be predictive of contraceptive behavior. Interviews, psychological tests and questionnaires were used to evaluate 39 pill-taking couples over a four year period. Of these, 15 of the wives continued to take the pill regularly throughout the study and 9 discontinued the pill for reasons other than a planned pregnancy. Wives who continued use of the pill were found to be more socially competent, self-satisfied, independent, and more inclined toward feminine interest than wives who discontinued the pill. Husbands of wives who continued showed less concern about avoiding criticism, i.e., maintaining propriety and reputation, than discontinued husbands.

In addition to the individual personality correlates, the authors compiled a composite score for each couple which was meant to represent some aspects of interaction between husband and wife. This composite score was highly accurate in separating users from nonusers in a significant number of cases. In general, the composite scores seem to indicate that women who continuously used the pill were more dominant,

socially and intellectually effective, and more responsible in relation to their husbands than the wives who discontinued use. There was more agreement on frequency of intercourse among continuous couples and there was more likely to be a history of use of female contraceptive techniques.

Work Commitment and Contraceptive Behavior

Several studies exist which investigate the relationship between the married female's commitment to working outside the home and her fertility patterns (Freedman, Whelpton and Campbell, 1959; Rossi, 1970; Safilios-Rothschild, 1972; and Whelpton, Campbell, and Patterson, 1966). However, it is impossible to know whether a married woman's fertility pattern and an unmarried person's contraceptive behavior reflect common variables. Therefore, only the single study which dealt with an unmarried population and its contraceptive behavior will be reviewed here.

Goldsmith, et al., (1972) administered a questionnaire to a sample of 377 nonvirgin unmarried teenage girls attending a Planned Parenthood Teen Clinic. Two hundred and ten never-pregnant girls constituted a "contraception group". These girls had voluntarily come to the clinic to seek contraceptive services. One hundred pregnant girls seeking abortion referral constituted an "abortion group". Sixty-seven pregnant girls living at a maternity home to continue their out-of-wedlock pregnancies made up the final group.

The contraception group was found to be significantly more oriented toward higher education, work, and the postponement of marriage than the other two groups. This finding confirmed the authors' subjective impressions "that girls in this group were more apt to plan their lives and were more achievement oriented than girls in the pregnant groups" (p. 33).

Sex-Role Orientation and Contraceptive Behavior

As with the studies on work commitment, investigations which include an individual's sex-role orientation concentrate on married women and their fertility patterns, rather than on single persons and contraceptive behavior (Clarkson, Vogel, Broverman, Broverman, and Rosenkrantz, 1970; Stolka and Barnett, 1969).

In the only study which included single women, Kapor-Stanulovic and Lynn (1970) used the Frank Drawing Completion Test to measure feminine identification and the Femininity Scale of the California Psychological Inventory to measure sex-role preference. Their sample consisted of women attending a Planned Parenthood Clinic; 103 were single, 51 married, 9 divorced, and 1 widowed. The authors concluded that problems associated with contraception tend to increase in two groups of women - (1) those who were highly feminine and (2) those who showed a low feminine identification-high feminine preference pattern. Problems decreased in women

with high feminine identification-low feminine preference patterns.

Summary

From the review of literature, it is possible to conclude that large numbers of sexually active unmarried adolescent and college-age persons fail to use contraception or fail to use it consistently. Seldom do the figures for consistent use of low-risk contraception exceed fifty percent. The pill and the condom are reported to be the most popular low-risk methods; withdrawal the most popular high-risk method. Variables found to be associated with contraceptive behavior include age, education, socioeconomic status, frequency of intercourse, place of residence, religion, frequency of church attendance, preparation for first intercourse and attitudes toward abortion.

A high percentage of adolescent and college-age subjects report knowledge of at least some method of contraception, but the influence of this knowledge on contraceptive practice is unclear. Also unclear is the relationship between perceived contraceptive availability and practice.

Parents who report knowledge of their sexually active daughter's standards and/or behavior tend to have daughters who use contraception.

The more stable the relationship between the sexual partners, the more likely is consistent use of contraception;

however, the relationship between stability of the sexual union and type of contraception used is unclear.

Because of the wide range of psycho-social variables associated with contraceptive behavior and the lack of commonly defined variables, it is difficult to identify a pattern which can be related to contraceptive use. Generally speaking, the contraceptive user might be characterized by any or all of the following traits: (1) the tendency to view oneself as being in control of the circumstances of one's life and to avoid dogmatism; (2) the ability to be aware of feelings and to deal with emotional conflicts realistically; and (3) the ability to plan for long-term goals, to accept responsibility and to act independently. Among married women the contraceptive user was judged to be socially competent and self-satisfied. However, unmarried contraception users may suffer some loss in self-esteem. Couple characteristics were also found to be important, but too few studies are included to draw general conclusions.

Studies which link sex-role orientation variables with contraceptive behavior in unmarried samples are rare and deal only with female populations. The two studies reviewed suggest that women who evidence traits not generally identified as feminine tend to have less problematic contraceptive behavior.

III. METHOD

Subjects

The subjects for this study consisted of a nonrandom volunteer sample of 128 college students of both sexes. To be included in the study sample, a subject had to meet the following qualifications:

1. Attending FL 200X: Human Sexuality during spring term 1975 at Oregon State University;
2. Is not now and never has been legally married;
3. Born and raised in the United States;
4. Reports having petted to orgasm with a member of the opposite sex and/or having experienced sexual intercourse with a member of the opposite sex within the six months prior to testing;
5. Be willing to complete the two questionnaires used in the study.

Test Instrument

The test instrument for this study consisted of two parts: The Sex-Role Stereotype Questionnaire (SRSQ) developed by Rosenkrantz, et al., (1968, 1970C) and a Biographical Questionnaire designed by the author (Appendix B).

Sex-Role Stereotype Questionnaire

To measure the subject's personal sex-role orientation, the Sex-Role Stereotype Questionnaire was used. This questionnaire is designed to elicit the subject's perception of himself in relation to characteristics which are viewed as stereotypically masculine and/or stereotypically feminine. It consists of 82¹ items which represent a variety of sex-role characteristics on which men and women in contemporary American society are perceived as differing (Broverman, et al., 1974, 1972; Clarkson, et al., 1970; Rosenkrantz, et al., 1968; Vogel, et al., 1970). Each item consists of two opposing descriptive phrases separated by a horizontal scale of 60 points, as follows:

Not at all	Very
Aggressive	Aggressive
10.....20.....30.....40.....50.....60.....70	

Each subject scores each item three times: once to typify an adult male, once to typify an adult female, and once to describe himself or herself. A total of 246 responses are collected for each subject.

The manner in which the subjects in this study were instructed to score the items differed slightly from the original directions. Rosenkrantz, et al., instructed their

¹ Only 79 of the items were used in data analysis. The three items for which the socially desirable pole had not been determined were eliminated.

were retained. If the 70 pole is perceived by a significant majority of the above sample to be masculine, the 10 pole is designated as feminine and vice versa. Forty-two of the items have a masculine 70 pole; 40 have a feminine 70 pole.

Social Desirability. Each item on the SRSQ has one pole which is more socially desirable than the opposing pole. The social desirability rating for each item was obtained by averaging the judgments of college men and women who were asked to indicate the extent to which each trait would be desirable for a mature, sex unspecified, adult. In 39 of the items the 70 pole was judged more desirable than the 10 pole. In 40 of the items the 10 pole was more desirable. In 3 items the results were unclear.

Competence and Warmth-Expressive Clusters. Each item on the SRSQ falls into one of two clusters: (1) the "competency" cluster, representing those items on which the socially desirable pole and the masculine pole coincide; and (2) the "warmth-expressive" cluster representing those items on which the socially desirable pole and the feminine pole coincide. Of the 79 items on which the socially desirable pole is known, 53 fall into the competency cluster and 26 make up the warmth-expressive cluster.

Scoring the SRSQ

Stereotypic Items. In the absence of standardized scores and/or group norms the authors of the SRSQ have

introduced the concept of "stereotypic items" which are computed for each sample. An item is defined as stereotypic when "the consensus that the 70 pole is more indicative of men than of women, or vice versa, exceeds the .001 level of probability for that sample" (Rosenkrantz, et al., 1970b). Stereotypic items provide an index of the "group norm" which can then be used in the computation of individual scores, i.e., only those items which reflect high consensus within the sample are used as a basis of comparison for each individual within the group.

Personal Sex-Role Orientation Scores. Using the stereotypic items from the two clusters, "competency" and "warmth-expressive", it is possible to compute two personal sex-role orientation scores for each subject: the mean self-response across the male-valued "competency" items and the mean self-response across the female-valued "warmth-expressive" items. These two scores are independent of each other; that is, a high score on one cluster does not necessarily result in a low score on the other cluster. Using a median split to determine high and low scores, each subject has the possibility of falling into one of at least four separate categories (Clarkson, et al., 1970). This is exemplified by the following diagram:

		Warmth-Expressive Scores	
		High	Low
Competency Scores	High	HH	HL
	Low	LH	LL

These personal sex-role orientation scores have proved to be a major source of significant findings in previous studies (Broverman, et al., 1974, 1972; Clarkson, et al., 1972).

There are four major steps in obtaining the personal sex-role scores for each subject: (1) identification of those items which are stereotypic for a given sample; (2) reflection of those items on which the socially desirable pole is the 10 pole; (3) conversion of individual responses to standardized Z scores; and (4) computation of individual self-response across the "competency" and "warmth-expressive" clusters.

Step 1. The first step in scoring the SRSQ is to identify the stereotypic items, i.e., those items to which responses differed from chance at the .001 level of probability in the sample. To do this the following method is used.

- (a) For each item across the sample the number of subjects scoring $M > F$ and the number of subjects scoring $M < F$ are counted. For example, consider the scores below:

	M	F	S		M	F	S
item 1	15	45	30	item 1	45	73	64
item 2	43	75	51	item 2	62	19	43
	Subject A				Subject B		

On item 1, the two subjects have both scored $M < F$; therefore for item 1, $M < F = 2$ and $M > F = 0$. However, for item 2 subject A has scored $M < F$ while subject B has scored $M > F$. Therefore, for item 2, $M < F = 1$ and $M > F = 1$. On items where $M = F$ the difference is zero and the item is eliminated for this step.

- (b) For each item the larger of the above counts ($M < F$ or $M > F$) is used in the following formula:

$$Z = \frac{(X \pm .5) - NP}{\sqrt{NPQ}}$$

where: X = number of subjects scoring $M > F$ (or $M < F$) for a given item

N = total number of subjects answering that item

$$P = Q = .5$$

Use:

X + .5 if X is greater than NP

X - .5 if X is less than NP

- (c) A Z value equal to or greater than 3.30 ($P \leq .001$, 2 tailed) defines a stereotypic item for the sample. Only stereotypic items are used in subsequent computations.

Any Z value obtained by this formula may be considered to be normally distributed with zero mean and unit variance, thus providing the needed basis for standardization (Siegel, 1956, p. 41).

Step 2. The "self" scores for those stereotypic items on which the 10 pole is the more socially desirable are reflected so that a high score consistently represents social desirability. The following equation is used:

$$\text{Reflected score} = 80 - \text{Original score}$$

For example, if an item has a socially desirable 70 pole, a score of 65 represents a more socially desirable response than a score of 15. However, if an item has a socially desirable 10 pole, a score of 15 will represent the more desirable answer. To simplify scoring, the second item is reflected, i.e., the socially desirable score of 15 is subtracted from 80 to obtain a score of 65. In this way the numerically high score always represents social desirability.

Step 3. The third step in scoring the SRSQ is to eliminate any individual response bias which might be present, such as a tendency to use only one part of the scale. To accomplish this, each of the subject's "self" responses to the stereotypic items are computed in a form which can be assumed to be approximately normally distributed with zero mean and unit variance, i.e., a Z score. The following formula is used:

$$Z = \frac{(X - \bar{X})}{\sigma}$$

Where \bar{X} and σ are based on the subject's 246 responses.

Step 4. The final step results in two scores for each subject: (1) the mean "self" response across stereotypic items included in the "competency" cluster, and (2) the mean "self" response across stereotypic items included in the "warmth-expressive" cluster.

To obtain this score, the Z scores on stereotypic items in the competency cluster computed in the previous step are summed and averaged for each subject; similarly the Z scores for items in the "warmth-expressive" cluster are summed and averaged for each subject. These two scores constitute the personal sex-role orientation of the subject.

Validity of the SRSQ

There exists no direct evidence of validity for the SRSQ. The authors report, "It was designed to provide indices of current attitudes of perceptions, rather than as a test. Hence, we have not concerned ourselves with questions of validity" (Rosenkrantz, et al., 1970c).

However, an argument for construct validity can be made. The authors have defined "the concept of sex-role stereotype" as "extensive agreement among people as to the characteristic differences between men and women" (Rosenkrantz, et al., 1968, p. 288). Therefore, the high consistency of response across individuals which has been obtained with repeated use of the SRSQ attests to the validity of the questionnaire. In two samples of unmarried college

students (80 women and 74 men), 53 items met the criterion for stereotype (Rosenkrantz, et al., 1968). In two other samples of married adults (96 women and 102 men), 44 items met the same criterion (Broverman, et al., 1970). Furthermore, there was a high degree of consensus among the samples as to which items constituted stereotypic items and which items were not stereotypic. There was disagreement on only 11 items (Rosenkrantz, et al., 1970a).

The fact that variation in personal sex-role orientation relates in a meaningful way to a variety of behaviors relevant to the present study further attests to the construct validity of the SRSQ. "Competency" and "warmth-expressive" scores have been significantly (.025 level of probability) related to the number of children born to women 45 years and older (Clarkson, et al., 1970; Broverman, et al., 1974), the number of children planned by high school students and college women, plans to seek education beyond college, and plans to combine employment with child-bearing (Broverman, et al., 1974).

Reliability of the SRSQ

Correlation of the odd with the even items of the "competency" cluster is .81 for the male response, .83 for the female response, and .89 for the self response in about 150 subjects. Correlations for the "warmth-expressive" cluster

are .80, .58, and .72 for male, female and self responses respectively (Rosenkrantz, et al., 1970b).

Biographical Questionnaire

The Biographical Questionnaire consists of 38 items designed to tap a wide range of information relevant to the purpose of the present study. In 35 of the items the subject is asked to choose among answers provided and to indicate his choice by writing the appropriate number in a box to the right of the question. For example, a 19-year-old subject would answer item 1 as follows:

Age: (1) 17-18 (3) 21-22 (5) 25-26
 (2) 19-20 (4) 23-24 (6) 27 or older

In the remaining three items the subject is asked to write out his response. For example:

Father's occupation: _____
 (fill in blank)

The questions included on the Biographical Questionnaire were designed to gather information which can be classified into three major categories: (1) background and description data, (2) data on plans relating to future marriage and family patterns, (3) data on present sexual and contraceptive behavior. A single item may relate to more than one of the above categories.

Background and descriptive questions. Questions in this category include age, sex, year in school, major field of study, parents' occupations, father's educational attainment, mother's career pattern, and religious preference and attendance pattern. These factors were chosen from among those identified in an extensive review of literature as being the most likely to relate to the dependent variable, contraception use.

Questions on plans relating to future marriage and family patterns. The questions in this section were designed to explore some of the future-oriented plans of each subject with regard to home and family. Of specific interest is the projected role of the woman within the family's life style. Questions investigate such factors as plans for marriage, plans for educational attainment of self and future spouse, plans for the career pattern of the wife, and the desired number of children.

Questions on present sexual and contraceptive behavior. These questions explore the subject's experience with pregnancy or impregnation, experience with heterosexual petting to orgasm and/or intercourse, relationship with the sex partner, and perception of the availability of contraception. As with the background and descriptive questions, these factors were identified through a review of literature as ones which would most likely effect contraception use among a sexually active never-married sample.

Measurement of the dependent variable. The dependent variable, contraception use, was measured by question 27-37 of the Biographical Questionnaire (see Appendix B).

In an effort to increase accuracy of recall, the subject was asked to report a single most recent experience rather than to generalize about a varying number of events. The subject was not asked to make statements regarding the frequency of contraceptive practices over a period of time. These reports are, at best, estimates and may be influenced by a number of idiosyncratic factors. Rather, the subject was asked to indicate which of the listed contraceptive methods was used during his/her most recent intercourse experience.

It was assumed that those subjects who reported behavior which is atypical for them, i.e., those who reported use of contraception even though they do not usually use contraception, or vice versa, would be randomly distributed and not bias the results.

Scoring. Scoring the Biographical Questionnaire consisted of recording and tabulating the responses of each subject.

Validity of the Biographical Questionnaire

Because the behavior being sampled by the Biographical Questionnaire is highly personal, there can be no direct measure of validity. However, since the questions are

worded in a straightforward manner to elicit responses about clearly defined events, face validity will be assumed.

Reliability of the Biographical Questionnaire

The reliability of the Biographical Questionnaire was assessed with a test-retest situation using 18 students who were attending a family relations class. Two weeks elapsed between testings. The Pearson Product-Moment Correlation Coefficient was computed for each subject. All but four of the correlation coefficients were above .95, and all but two were above .90. One subject received a correlation coefficient of .79; one received .54.

Collection of Data

Data collection took place during Spring Term of 1975. Students attending the Human Sexuality course (FL 200X) had been previously informed that they would be asked to participate in a research project during class on the testing date. The purpose of the research was paraphrased verbally from the first page of the test instrument. Students were assured of anonymity and were informed that participation was voluntary. All class members were encouraged to accept a questionnaire to examine. Those who chose not to participate were asked to remain in their seats while their classmates completed the test. Students were asked to correct an omission in question 26 of the Biographical

Questionnaire, which deals with the heterosexual relationship in which intercourse last occurred. An eighth response category, living together, was added.

Following these verbal instructions, the test instrument was passed out. Because students were seated in closely aligned auditorium seats which provided for little privacy, they were encouraged to keep their attention on their own test. Completed questionnaires were deposited in privacy-providing "mail boxes" located at the front and back of the classroom.

Statistical Test

The choice of the statistical method for the analysis of data obtained in this study was based on the following considerations:

1. The parameters of the population under investigation are not known; therefore, a nonparametric statistic is appropriate.
2. The study gathered data in the form of frequencies which cannot be known or predicted in advance.
3. The research design provided that each observed frequency was independent of all other frequencies.
4. The chi-square is the most powerful statistic available for the type of data this study provided.

Therefore, the chi-square statistic, as represented in the following formula, was chosen for the statistical analysis of data in this study:

$$\chi^2 = \sum \left[\frac{(\text{Observed frequency} - \text{Expected frequency})^2}{\text{Expected frequency}} \right]$$

IV. ANALYSIS OF DATA

The analysis of data took two forms: (1) descriptive analysis of the sample, and (2) statistical analysis of associations between specific variables. Detailed frequency tables are presented in Appendix A, pages 82-96.

The descriptive data was used to highlight some of the characteristics of the sample. When appropriate, reference is made to relevant research which gives the reader a basis for contrast and comparison.

Descriptive Analysis

Stereotypic Items

Of the 79 items on the SRSQ which were used in the data analysis², 20 were found to be stereotypic for the present sample. Fourteen of these made up the "competency" cluster and six made up the "warmth-expressive" cluster. The number of items found to be stereotypic in the present study contrasts with findings of the authors of the SRSQ. Using a sample of 154 college students ages 17-25, they found 53 items³ to be stereotypic (Rosenkrantz, et al.,

² Three of the 82 items were eliminated from the data analysis because the socially desirable pole had not been determined.

³ One of these items was among those eliminated from the data analysis in the present sample.

1968). In a sample of 198 adults ages 40-59, 44 items were stereotypic (Broverman, et al., 1970). Of the 20 items found to be stereotypic for the present sample, 19 were also stereotypic for both the samples mentioned above. The final item was stereotypic for the student sample above, but not for the adult sample. Thus, while the number of stereotypic items in the present sample contrasts with other findings, those items identified as stereotypic were consistent with past experience.

Personal Sex-Role Orientation

A major step in the analysis of data was to determine the personal sex-role orientation of each subject. The scoring procedures for the SRSQ provide each subject with two scores: a mean self score for all stereotypic items in the "competency" cluster and a mean self score for the stereotypic items in the "warmth-expressive" cluster. The median for each cluster was determined. A score was designated "high" if it fell above the median and "low" if it fell below the median. This method is consistent with those reported in other studies which use the SRSQ (Broverman, et al., 1974; Clarkson, et al., 1970).

This procedure allowed for four different personal sex-role orientations: high competency--high-warmth--expressive (HH), high-competency--low warmth-expressive (HL), low competency--high warmth-expressive (LH), and low

competency--low warmth-expressive (LL). Each subject was assigned to one of the four groups. Nineteen subjects were assigned to the HH group; 44 to HL; 44 to LH; and 21 to LL.

The totals appearing in the right hand column of Table 6, page 90, show that the distribution of males and females among the four groups generally follows the expected pattern. That is, more males than females report HL scores and more females than males report LH scores, with LL scores being reported by approximately equal number of males and females. An exception lies in the HH group, where twice as many females as males are included.

Biographical Questionnaire

Questions on the Biographical Questionnaire were designed to gather data from three major categories: (1) background data, (2) data on future marriage and family patterns, and (3) data on present sexual and contraceptive behaviors.

Background Data. Background data has been tabulated in Table 1, page 82. The vast majority (95 percent) of the 128 sexually active students were between 17 and 22 years of age, with 50 percent reporting ages of 19-20. Sex was fairly evenly distributed, with only 10 percent more females than males. As would be expected from the age distribution, the majority (68 percent) were freshmen and sophomores. Almost half were majoring in the humanities with

the remaining students about evenly divided between the sciences and business.

Socio-economic status was computed for each subject using the Hollingshead Two Factor Analysis of Social Position (1965). This index combines the educational and occupational level attained by the male head-of-household to arrive at a statistical determination of the approximate social position of an individual within contemporary American society.

The relevance of using a male-oriented index on a sample which may include highly autonomous women with non-traditional educational and career aspirations is demonstrated by a recent study by Felson and Knoke (1974). They found that even among college educated employed women, the achievements of the husband or father were used as the basis for self-ascribed social status. The contribution of the woman's education and occupational prestige to her family's social status was judged by the authors as minimal. Mother's occupation is not included in the S.E.S. index. The greatest number are homemakers, with only 19.5 percent having careers which fall into the top two categories of Hollingshead's rankings. Thirty-four percent of the fathers fall into the top categories.

Judging from responses to the question regarding church attendance, religiosity in this sample is extremely low. Seventy-seven percent of the students reported attending

religious services once per month or less; 57 percent reported attending religious services twice a year or less. This is consistent with findings in other studies which report religiosity to be negatively correlated with virginity (Bell, 1966; Kantner and Zelnick, 1972; Reiss, 1967; and Schofield, 1965). Protestants made up 48 percent of the sample; "other", 31 percent; and Catholics, 21 percent. There was no one of the Jewish faith included in the study.

Anticipated Marriage and Family Patterns. Data relating to future marriage and family expectations are detailed in Table 2, page 84. Two trends which deserve comment appear in the tables.

For those who have reason to believe that marriage is not a popular life-style among young people today, the responses to the questions which explore plans to marry might be informative. While only 34 percent of the subjects had definite plans to marry, the overwhelming majority (97 percent) reported they would like to marry eventually. Only three subjects reported a distaste for marriage.

The majority of students in the sample wanted and expected to have two unadopted children, with a mean of 2.09 ideal and 2.06 expected children. This represents a major contrast to the 3.16 mean ideal family size for the average American couple reported by Gustavus and Nam (1970). It also contrasts with earlier studies which show a trend

toward three-children families (Blake, 1966; Gustavus and Nam, 1970).

One of the major goals of data analysis was to determine each subject's orientation toward education for women. This was accomplished on the basis of the subject's response to question 15 for females and question 16 for males. These questions explore the subject's expectation regarding education for herself (if she were female) or for his future wife (if he were male). Each subject was assigned to one of three groups: Group I was comprised of those who expected themselves or their future wives to attain an educational level between high school and two years of college; Group II expected themselves or their future wives to attain an educational level between three years of college and a B.S. or B.A. degree; and Group III aspired to graduate and/or professional degrees for themselves or their future wives. Thirteen subjects made up the first group; 98, the second group; and 17, the third group.

Another goal in the analysis of data was to determine each subject's expectations regarding an out-of-home career for the wife-mother of his/her future family. Using the subject's response to question 17; each was assigned to one of four groups: Group I consisted of those subjects who expected the wife-mother to be a full-time homemaker at all times after marriage; Group II expected the wife-mother to remain at home full time after the arrival of children;

Group III expected the wife-mother to participate in part-time work outside the home after the arrival of children; and Group IV expected the wife-mother to have a full-time career at all times during the marriage. Two subjects expected the woman to have no career; 48 expected her to have a career before children only; 36, part-time career after children; and 41, a full-time career. Thus, 60 percent of the sample expects the wife-mother of their future family to work at least part-time even after the arrival of children. Approximately one-third of the sample expect the wife-mother to have a full-time out-of-home career.

Sexual and Contraceptive Behavior. The data related to sexual activity is presented in Table 3, page 86. The sample is not a random sample, but rather a sample especially chosen to represent a continuum of sexually active college students, and the resulting data cannot be assumed to be typical of the total student population.

One finding involves the heterosexual relationship in which intercourse is most likely to occur. Of the 109 non-virgins in the sample, 73 percent reported that their most recent intercourse experience took place in a relationship which did not include plans to marry. This behavior is in direct conflict with prevailing attitudes which tend to demonstrate greater acceptance of premarital intercourse with future marriage partners than with other partners (Kaats and Davis, 1970; Reiss, 1967).

The contraceptive methods reported by students in the sample are tabulated in Table 4, page 88. The pill and the condom are the most popular low-risk methods; withdrawal the most popular high-risk method. Because many subjects reported more than one method of contraception during their most recent intercourse, the total number of responses exceeds the sample size. To simplify data analysis it was decided to divide the sample into three groups, representing a continuum from no-risk to high-risk contraception. Subjects who reported petting to orgasm within the six months prior to testing, but who did not report experiencing intercourse during the same time period were designated the Abstinence (no-risk) group. Nineteen were virgins; six were nonvirgins.

Of the subjects who reported having sexual intercourse during the allotted time period, those who reported using low-risk contraception during their most recent intercourse were assigned to the Low-Risk group. A subject reporting the use of both low-risk and high-risk contraceptive methods was assigned to the Low-Risk group. Twenty-five subjects comprised the Abstinence group; 70 made up the Low-Risk group; and 25 were High-Risk subjects. The totals appearing at the bottom of Table 6, page 90 show that the sexes are approximately evenly divided among the three contraceptive groups.

Of the 103 subjects who reported having intercourse within the six months prior to testing, 76 percent were in the Low-Risk group. This figure is nearly identical to the one reported by Kantner and Zelnick (1972) in their study of 19-year-old coeds, 75 percent of whom reported using low-risk contraception at last intercourse. Other recent studies cited in the review of literature report less use of low-risk methods, but since the definitions of contraceptive "use-nonuse" differ from the present study, it is not possible to draw comparisons.

Using the viewpoint of this thesis, that petting to orgasm without experiencing intercourse over a six month period constitutes a form of non-risk contraception, 80.5 percent (Abstinence plus Low-Risk) of the total sample were using effective contraceptive techniques. Only 19.5 percent were using high-risk methods.

In summary, the descriptive data serves two purposes: to delineate the demographic characteristics of the sample and to classify each subject with regard to each of four variables in preparation for statistical analysis. The four variables are as follows: (1) personal sex-role orientation, (2) orientation toward education for women, (3) orientation toward out-of-home careers for women, and (4) contraceptive behavior.

Statistical Analysis

The statistical analysis of the data is presented in the following paragraphs. Discussion and interpretation of the results is presented in Chapter V.

Testing the Hypotheses

To test the four hypotheses stated in Chapter I, chi-square contingency tables were constructed and analyzed. The first contingency table explored the association between personal sex-role orientation and contraceptive behavior (Hypothesis I). Table 5, page 89, shows the resulting distribution. $\chi^2 = 6.69$ with six degrees of freedom and was not significant. Hypothesis I was accepted.

Attempts to regroup categories within the contingency table also resulted in chi-square values which were too small to be significant. A frequency distribution was constructed to investigate possible relationships among sex-role orientation, sex (male-female), and contraceptive behavior. Table 6, page 90, reveals no distinctive trends. Because expected frequencies fell below five in at least 20 percent of the categories chi-square was not computed (Siegal, 1956). Chi-square was computed for only those women who received high competency scores, a situation which can be interpreted as an alternative to traditional

feminine sex-role orientation. The chi-square was not significant.

The second contingency table examined the association between orientation toward education for women and contraceptive behavior (Hypothesis II). The resulting distribution is presented in Table 7. $\chi^2 = 2.86$ with four degrees of freedom and was not significant. Hypothesis II was accepted.

The third contingency table examined the association between orientation toward out-of-home careers for women and contraceptive behavior (Hypothesis III), as shown in Table 8, page 92. $\chi^2 = 5.05$ with six degrees of freedom and was not significant. Hypothesis III was accepted. In addition a contingency table was constructed to investigate the associations among orientation toward out-of-home careers for women, sex (male-female), and contraceptive behavior (Table 9, page 93). The distribution of males and females did not differ significantly from the expected distribution.

Exploring Additional Relationships

In order to more completely explore the data, additional variables were analyzed. Again chi-square contingency calculations were used.

A chi-square significant at the .01 level was found between the heterosexual relationship in which intercourse

last occurred and the frequency of intercourse during the six months prior to testing. The data is summarized in Table 10, page 94. The subjects were divided into three groups according to frequency of intercourse. The Lows reported a frequency of 1-5 times; Mediums, 6-20 times; and Highs, more than 20 times.

Examination of the frequency distribution suggests that the critical difference lies between those who experienced their most recent intercourse in a nonexclusive dating relationship and those who experienced their last intercourse in a relationship where exclusivity is implied. Fifty-nine percent of the Low group reported that their most recent intercourse took place in a nonexclusive relationship, while 41 percent reported that their most recent experience was in a relationship in which they were dating exclusively, planning to marry or living together. In contrast, 89.5 percent of the high frequency group reported experiencing intercourse in a relationship where exclusivity is implied, while only 10.5 percent report relationships of nonexclusive dating.

Also related to frequency of intercourse was the use of the pill as a contraceptive method. Using only the nonvirgins who reported experiencing intercourse within the six months prior to testing, a positive relationship was found to be significant at the .05 level. Table 11, page

95, presents the data. Intercourse frequency and the use of withdrawal was not found to be related.

The heterosexual relationship in which intercourse last occurred and contraceptive behavior was not found to be significantly related. However, the distribution of subjects reported in Table 12, page 96, reveals a trend in the expected direction. None of the Abstinence or High-Risk students are found in an engagement or cohabitation relationship. Only three reported experiencing their last intercourse in a relationship which included plans of marriage. In contrast, all those subjects who had their most recent intercourse in engagement or cohabitation relationships were using low-risk contraception. These results are slightly confused by the fact that only six subjects in the Abstinence group reported being virgins, and yet seven have reported a relationship in which intercourse has occurred. But it is doubtful that this inconsistency exerts any noticeable effects on the analysis of the data.

A positive association between experience with impregnation and the use of low-risk contraception was found to be significant at the .10 level. Of those who reported having intercourse during the six months prior to testing, ten reported experience with impregnation. Of those ten, all were using low-risk contraception at last intercourse.

Other associations which were explored and found to be not significant at the .10 level were the following:

(1) having concrete plans to marry and the use of abstinence, low-risk, or high-risk contraception, (2) the feeling that contraception was easy to obtain and abstinence, and (3) the feeling that contraception was easy to obtain and withdrawal.

Summary

Data analysis fell into two categories: descriptive and statistical. The descriptive data is detailed in Tables 1-4 of Appendix A, pages 82-88. Data relating to the statistical analysis is presented in Tables 5-11 of Appendix A, pages 89-96.

In preparation for the statistical analysis, each subject was classified according to each of four variables: (1) personal sex-role orientation, (2) orientation toward education for women, (3) orientation toward out-of-home careers for women, and (4) contraceptive behavior.

Chi-square contingency tables were constructed and analyzed for each of the three null-hypotheses. All three hypotheses were accepted. Frequency distributions by sex (male-female) showed no distinctive trends.

Additional associations were explored and the following were found to be significant at at least the .10 level: (1) the heterosexual relationship in which intercourse last occurred and the frequency of intercourse, (2) frequency of

intercourse and use of the pill, and (3) experience with impregnation and use of low-risk contraception.

V. INTERPRETATION OF DATA

The reward-alternatives model predicts that an individual will attempt to move toward that alternative in his perceptual field which he believes to be most rewarding. More specifically to our purpose, the reward-alternatives model suggests that individuals who incorporate rewarding alternatives to childbearing into their life-styles will experience a greater motivation to control conception than individuals who have no such alternatives. It has been hypothesized that an individual's sex-role orientation may be the intervening variable which determines which alternative he finds most rewarding (Blake, 1965, 1969; Clarkson, 1970; Davis, 1967; and Scanzoni and McMurray, 1972).

Using the reward-alternatives model it would be predicted that the majority of unmarried individuals would view nonmarital conception as an unrewarding alternative in this culture. Emotional, social and financial costs are high and, when given the choice, twice as many unmarried women choose to terminate pregnancies as choose to deliver illegitimate children (Oregon State Health Division, 1973). Data to support this prediction is also found in the present study where 80.5 percent of the sexually active students reported either abstaining from intercourse or using low-risk contraception at last intercourse.

However, for a small minority of the unmarried population, it could be predicted that nonmarital pregnancy would result in fewer negative consequences than positive ones. The manipulation of a sex partner into marriage, the attempt to define one's identity by becoming a mother or father, and the desire to escape the responsibilities of work or school are examples of situations in which this might occur. Of the sample used in this study, 19.5 percent reported use of high-risk contraception at last intercourse.

This study explored the possibility that sex-role orientation would differentiate these two groups and determine whether individuals who incorporated alternatives such as educational and career development for women into their expected lifestyles would be more likely to make an effort to avoid conception than individuals who adhered to more traditional orientations. No such differentiation was discovered. No significant association was found between any of the three measures of sex-role orientation and the three categories of contraceptive behavior. On the assumption that some of the influences might be sex-specific, that is, true only of women who received a personal sex-role orientation score generally perceived as "masculine" or of men who wish their future wives to remain home, etc., analysis by sex was attempted. This did not yield any discernable trends.

The most obvious interpretation of the data is that sex-role orientation is not the intervening variable which determines the alternative which is most rewarding with regard to contraceptive behavior. There may be several reasons for this finding.

First, it may be that the negative consequences of nonmarital pregnancy are viewed with equal distaste by those who chose traditional orientations and those who make less traditional choices. For example, a woman who sees herself as aggressive, independent, and rational (high "competency" score), who aspires to a college education, or who wishes to achieve in a career may view nonmarital conception as a threat to these goals. However, traditional morality condemns child-bearing outside of marriage and a woman who produces an illegitimate child may reduce her chances of marriage and of attaining a healthy self-esteem. Similarly, a male who incorporates nontraditional attitudes may find nonmarital pregnancy just as unrewarding as his traditionally oriented brother.

Second, it may be that the negative consequences of nonmarital pregnancy are viewed as equally avoidable by those of differing sex-role orientations. Because the sample was drawn from students attending a class in which contraceptive information was part of the curriculum, it can be assumed that all subjects possessed a relatively complete and accurate knowledge of contraceptive methods.

Additionally, 93 percent of the sample agreed that contraceptive supplies were easy to obtain, a finding which is consistent with the ready availability of contraception at the student health service on campus.

Another equalizing factor may be the frank and open discussions in class of a variety of sex-related issues. This may serve to reduce resistances which might otherwise characterize a segment of the population. Furthermore, there exists in some of these discussions tacit, if not open, approval of the use of low-risk contraception to control conception. This may serve to further overcome hesitancies.

Therefore, it would be expected that the initiative needed by individuals in this sample to obtain contraception may be much less than in a population where knowledge and accessibility are not as great.

A second interpretation of the data is possible. Sex-role orientation may be related to contraceptive behavior, but the differential effects may be obscured for a variety of reasons.

The equalizing effects of the ready availability of contraceptive knowledge and supplies has already been discussed. In a situation where contraception is not perceived as easily available, an individual whose self-concept included traits such as aggressiveness, objectivity, and independence (high "competency" score) might be more

successful than an individual who rates himself or herself low on these traits. Similarly an individual who expects women to participate in education and career opportunities might also be more persistent in seeking and obtaining contraceptive supplies than an individual who does not value these alternatives. In the present sample these effects would not become evident due to the ease with which contraception is obtained.

Characteristics of the sample may also work to obscure results. It is impossible to know how using a non-random sample of college students attending a class in Human Sexuality biased the results. Most of the characteristics of the sample remain untapped by the test instrument, and many of those which were measured are beyond the scope of this study.

One sample characteristic which was measured by the test instrument was the existence of stereotypic sex-role perceptions. The measurement of sex-role orientation by the SRSQ, presupposed the existence of commonly held beliefs regarding sex-appropriate behaviors. Of the 79 items on the SRSQ which were used in the data analysis, only 20 were found to be stereotypic for this sample. This represents less than half as many as were found to be stereotypic in earlier samples (Rosenkrantz, et al., 1968; Broverman, et al., 1970), suggesting that individuals included in this sample may take a more flexible view of what constitutes

sex-appropriate behavior than did earlier subjects. A loss of sex-role stereotypes means a decrease in their ability to influence behavior.

Another factor which may work to obscure results in this study is the validity of the test instrument. Because the nature of the behaviors being investigated is highly personal and confidential, direct measures of validity are not possible. It cannot be known whether or not the test instrument measures the relevant variables accurately.

In summary, two interpretations of the data have been suggested and discussed: (1) that sex-role orientation is not associated with contraceptive behavior in sexually active unmarried college students; and (2) that sex-role orientation is associated with contraceptive behavior, but the differential effects are masked by other factors.

Implications for Further Study

The problem of accounting for the variation in contraceptive behavior still remains. If sex-role orientation as measured by this study is not the critical intervening variable which will determine the relative values of alternatives within the individual's perceptual field, what are some of the other possibilities?

Since heterosexual behavior requires at least two participants, the interaction of those individuals within their relationship becomes a critical issue. This was

found to be true among both married and unmarried partners in other studies (Bakker and Dightman, 1964; McCance and Hall, 1972; Sorensen, 1973; and Ziegler, et al., 1968). Supporting data is also found in the present study, where heterosexual relationship and frequency of intercourse were found to be related and where a trend toward the increased use of low-risk contraception in high-intimacy relationships was observed.

A study into the nature of the pair relationship would permit control of a major intervening variable; namely, the relationship as a mediator of individual behavior. At least two research possibilities exist: (1) to relate current pair-patterns of sex-role orientation to the couple's present contraceptive behavior, and (2) to examine the influence of pair-patterns of sex-role orientations on individual behavior over time.

To operationalize the first possibility, pair-patterns of sex-role orientation could be determined by combining the scores received by the individuals who make up the couple. For example, a couple in which a male with a HH personal sex-role orientation score is combined with a female who received a LH personal sex-role orientation would have an HH-LH pair-pattern. Pair-patterns could be congruent (HH-HH, HL-HL, etc.) or mixed (HH-HL, HH-LL). To assess the differential effects of each of the possible

pair-patterns on contraceptive behavior could be a rewarding research project.

To operationalize the second possibility, it would be necessary to follow each individual through a period of time and, hopefully, through a series of relationships. Although the difficulty of administering this type of longitudinal study is extreme, the results could be very informative. Questions such as the following could be posed: Are certain pair-patterns more stable than others? How does this effect contraceptive behavior? When a relationship is terminated, is the same pair-pattern likely to be repeated with the next partner? How does this influence contraceptive behavior? Does individual contraceptive behavior change or remain the same in different pair-patterns?

If the nature of the heterosexual relationship in which intercourse occurs is viewed as a mediator of individual behavior, then psychological variables can be viewed as the primary source of that behavior which is to be modified. Investigators concerned with contraceptive behavior have suggested that psychological variables such as personality traits, attitudes, unconscious motivation, and cognitive characteristics play a major role (Bogue, 1966; Fawcett; 1970; and Pohlman, 1969). The review of literature in this thesis details some of the research dealing with psychological variables.

Psychological factors may become especially significant in populations, such as the one used in the present study, where demographic and situational variables are homogeneous and do not exert differential influences on individual behaviors. Feelings of guilt which surround sexual behaviors, individual motivations for intercourse, and unmet dependency needs are examples of psychological variables which were not measured in this study, but which could prove productive in future efforts.

One psychological (or psycho-social) variable which would be especially interesting to study is the role of religion in contraceptive behavior. Although the present investigation tapped religion superficially, it did not explore the variable in detail and it was beyond the scope of the study to include it in the statistical analysis. However, an unanswered question is often raised by researchers: If religiosity is negatively related to virginity, as it appears to be (Bell, 1966; Kantner and Zelnick, 1972; Reiss, 1967; and Schofield, 1965), how does this same religiosity effect contraceptive behavior? If an individual's sexual behavior conflicts with his religious beliefs, is he more or less likely to use contraception than an individual who does not experience this conflict?

Suggestions for further research which have been made thus far could apply to a wide range of research on a variety of topics. Experience with the present study has

revealed at least three factors which could be modified and/or explored in greater depth.

A top priority effort would be to assess the validity of the test instrument. Even though reliability coefficients are high, we cannot know the value of the test instrument for measuring the desired variables until we have some evidence of validity. It is suggested that a population known to possess characteristics reportedly measured by the test instrument be located and tested. For example, a conservative religious group which actively teaches and adheres to traditional sex-role orientations would provide a good basis for assessing validity.

A random sample of the population of all sexually active unmarried individuals would be a highly desirable research technique to employ. Even if this were not possible, to locate a sample more representative of the total population would furnish more trustworthy results than did the present sample. The results obtained from a more representative sample could be better generalized to the target population.

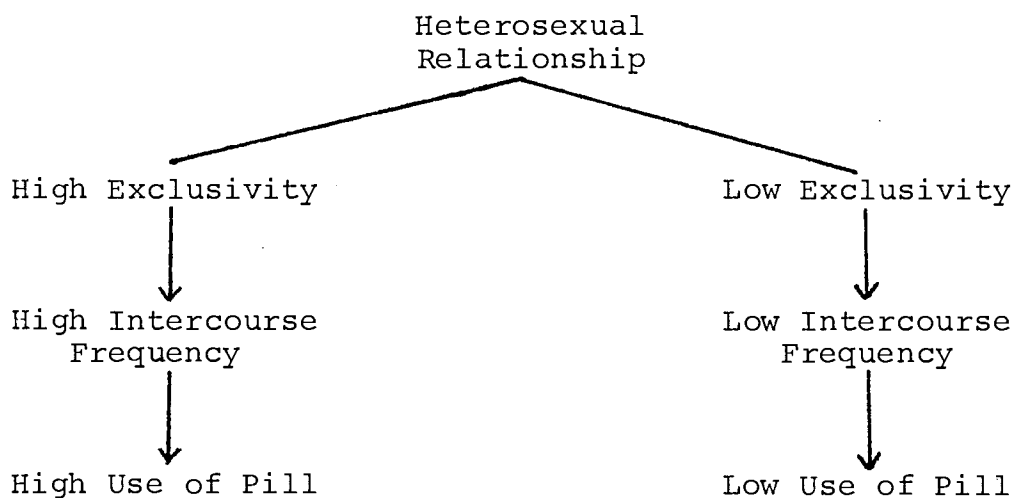
Another possibility would be to test a sample known to encounter factors which are opposite to those operating in the present study. For example, to locate a sample in which contraceptive information and supplies are not readily available. This would provide a basis of comparison from which to evaluate the results.

One of the areas of contraceptive behavior included in this investigation which invites further study is the inter-relationship of three important variables: (1) the nature of the heterosexual relationship in which intercourse occurs, (2) the frequency of intercourse, and (3) contraceptive behavior. The review of literature suggests that contraceptive use increases with the frequency of intercourse (Kantner and Zelnick, 1973, 1973; McCance and Hall, 1972), and with the stability of the heterosexual relationship in which intercourse occurs (McCance and Hall, 1972; Sorensen, 1973).

However, the relative effects of each variable in determining the type of contraception used is in question. While McCance and Hall (1972) found increased use of low-risk contraception with increased stability of the relationship, both the Brashear (1971) and Kantner and Zelnick (1972, 1973) studies failed to show a relationship between plans to marry and use of the pill. Use of the pill was related to frequency of intercourse (Brashear, 1971).

In the present study subjects who reported experiencing their most recent intercourse in a relationship in which a high degree of exclusivity is implied also reported a significantly higher frequency of intercourse than subjects in nonexclusive relationships. In turn, the higher the frequency of intercourse, the more likely was use of the pill as a contraceptive method. The relationship in which

intercourse last occurred was not associated with contraceptive behavior. Using these results the following chain of events can be hypothesized:



To discover whether this conceptualization will prove to be useful will take a well-designed study which explores each variable in greater detail than was possible in the present study, and which eliminates some of the shortcomings of the data gathering procedures employed. For example, it is impossible to determine from data gathered in this study whether a subject who reports that last intercourse occurred in an exclusive dating relationship limits his intercourse experiences to that one partner or whether he maintains sexual liaisons outside that relationship. That is, does a high frequency of intercourse apply to one partner or to several partners?

Another question not answered by data gathered in this study involves that stage of the heterosexual relationship

at which intercourse is first initiated and the subsequent pattern of contraceptive behavior. Once intercourse is initiated, what is the frequency pattern? How does this effect contraceptive behavior? How does the development of the relationship interact with the two variables of intercourse frequency and contraceptive behavior?

A third area which needs further exploration is the association between frequency of intercourse and the use of specific contraceptive methods. As frequency of intercourse increased, so did use of the pill, the most popular low-risk method. However, use of withdrawal, the most popular high-risk method, was not associated with frequency of intercourse. This suggests that while at least one factor which may influence the use of low-risk contraception may be identified, factors which influence the use of high-risk methods are still unknown. To locate a "high-risk sample" and to study it intensively might identify significant variables.

In summary, it has been suggested that the nature of the heterosexual relationship in which intercourse occurs influences intercourse frequency, which in turn influences contraceptive behavior. However, a number of limitations in the data provided by this study make acceptance of this hypothesis tentative. Further study could provide clarification on a number of relevant issues.

Summary

Interpretation of the data was made in the context of the reward-alternatives model which states that an individual will attempt to move toward the alternative in his perceptual field which he believes will be most rewarding. Two possible interpretations were presented. First, that sex-role orientation was not an intervening variable which determined the alternative which is most rewarding with regard to contraceptive behavior. It was suggested that the negative consequences of nonmarital pregnancy were viewed with equal distaste and seen as equally avoidable by those of differing sex-role orientations. The second interpretation was that sex-role orientation did relate to contraceptive behavior, but that characteristics of the sample and the test instrument obscured the results.

Suggestions for future studies included: (1) using pair-patterns of sex-role orientation, (2) instituting a longitudinal study, (3) focusing on psychological variables, (4) attempting to assess the validity of the test instrument, (5) obtaining a random sample of sexually active unmarried subjects, and (6) further assessing the relationships among the heterosexual relationship in which intercourse occurs, intercourse frequency, and contraceptive behavior.

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APPENDICES

APPENDIX I

Table 1. Background and descriptive Data.

Question	Subjects	
	Number	Percentage
Age		
17-18	28	21.9
19-20	64	50.0
21-22	30	23.4
23-24	4	3.1
25-26	0	-
27 or older	2	1.6
Sex		
Male	58	45.3
Female	70	54.7
Year in School		
Freshman	56	43.8
Sophomore	31	24.2
Junior	25	19.5
Senior	14	10.9
Graduate	2	1.6
Major		
Humanities	61	47.7
Sciences	34	26.6
Business	31	24.2
Undecided	2	1.6
Socio-Economic Status		
Class I	18	17
II	22	21
III	30	29
IV	25	24
V	10	10
Mother's Occupation		
No information	2	1.6
1-2 Hollingshead	47	36.7
3-7 Hollingshead	25	19.5
Homemaker	53	41.4
Deceased	1	.8

Table 1 (continued)

Question	Subjects	
	Number	Percentage
Mother's Career Pattern		
No career	26	20.3
Career before children only	34	26.5
Part-time career after children	33	25.8
Full-time career	35	27.3
Religious Preference		
Protestant	62	48.4
Catholic	27	21.2
Jewish	0	-
Other	39	30.5
Church Attendance		
Several times a week	1	.8
Once a week	14	10.9
Twice a month	14	10.9
Once a month	26	20.3
Once or twice a year	52	40.6
Never	21	16.4

Table 2. Plans relating to future marriage and family patterns.

Question	Subjects	
	Number	Percentage
Concrete Plans to Marry		
Yes	44	34.4
No	84	65.6
Would Like to Marry		
Yes	124	96.9
No	3	2.3
Level of Education Subject Plans to Complete		
Highschool	0	-
1-2 years college	3	2.3
3-4 years college	12	9.4
B.S. or B.A.	76	59.4
Master's	26	20.3
Doctorate Professional	10	7.8
No answer	1	.8
Level of Education Expected for Future Spouse		
Highschool	3	2.3
1-2 years college	12	9.4
3-4 years college	18	14.1
B.S. or B.A.	80	62.5
Masters	8	6.3
Doctorate or Professional	4	3.1
No answer	2	1.6
Career Pattern Expected for Wife-Mother		
No career	2	1.6
Career before children only	48	37.5
Part-time career after children	36	28.1
Full-time career	41	31.0
No answer	1	.8
Number of children desired		
5 or more	1	.8
4	12	9.4
3	17	13.3
2	77	60.2
1	6	4.7
0	15	11.7

$\mu = 2.09$

Table 2 (continued)

Question	Subjects	
	Number	Percentage
Number of Children Expected		
5 or more	1	.8
4	7	5.5
3	17	13.3
2	84	65.6
1	8	6.3
0	9	7.0
No answer	2	1.6
Physical Reason Not Able to have Children		
Yes	3	2.3
No	124	96.9
No answer	1	.8

Table 3. Sexual behavior.

Question	Subject	
	Number	Percentage
Experienced Intercourse		
Yes	109	85.2
No	19	14.8
Intercourse Frequency During Last Six Months		
0 times	25	18.8
1 times	10	7.8
2-5 times	18	14.1
6-10 times	24	18.8
11-20 times	12	9.4
20 or more times	40	31.3
Petting to Orgasm, No Intercourse		
Yes	99	77.3
No	28	21.9
Frequency of Petting to Orgasm, No Intercourse During Last Six Months		
0 times	40	31.3
1 times	9	7.0
2-5 times	42	32.8
6-10 times	11	6.6
11-20 times	15	11.7
20 or more times	10	7.8
No answer	1	.8
Impregnation		
Yes	10	7.8
No	118	92.2
Relationship in Which Last Intercourse Occurred		
Doesn't apply	19	14.8
Casual acquaintance	10	7.8
Dating, not exclusively	33	25.8
Dating exclusively	37	28.9
Planning to marry but not engaged	17	13.3
Engaged	7	5.5
Living together	5	3.9

Table 3 (continued)

Question	Subject	
	Number	Percentage
Subject Feels Contraceptive Supplies easy to Obtain		
Yes	119	93.0
No	5	3.9
Don't know	4	3.1

Table 4. Distribution of subjects: Contraceptive methods.

Method	Number of Subjects	Percent of Nonvirgins ^a	Percent of Sample
Pill	60	55.0	46.9
Condom	27	24.8	21.1
Withdrawal	23	21.1	18.0
Abstinence	21	-	16.4
Rhythm	13	11.9	10.2
No contraception	11	10.1	8.6
Foam-jelly	8	7.3	6.3
Morning-after pill	4	3.7	3.1
Douche	4	3.7	3.1
Don't know	4	3.7	3.1
I.U.D.	3	2.7	2.3
Diaphragm	1	.9	.8
Total ^b	179	144.9	139.90

^a N = 109

^b Totals exceed sample size because some subjects reported the use of more than one method.

Table 5. Distribution of subjects: Personal sex-role orientation and contraceptive behavior.

Personal Sex- Role Orientation	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-Risk	
HH	2	13	4	19
HL	13	23	8	44
LH	6	31	7	44
LL	4	11	6	21
Total	25	78	25	N=128

$$\chi^2 = 6.69$$

$$\text{d.f.} = 6$$

Table 6. Distribution of subjects: Personal sex-role orientation, sex, and contraceptive behavior.

Personal Sex- Role Orientation	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-Risk	
HH				
Male	0	5	1	6
Female	2	8	3	13
HL				
Male	7	15	3	25
Female	6	8	5	19
LH				
Male	2	12	2	16
Female	4	19	5	28
LL				
Male	2	4	5	11
Female	2	7	1	10
Totals	25	78	25	N=128
Male	11	36	11	
Female	14	42	14	

Table 7. Distribution of subjects: Orientation toward education for women and contraceptive behavior.

Educational Level	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-Risk	
High School - College Sophomore	2	8	2	12
College Junior - B.S./B.A.	20	57	21	98
Graduate/ Professional	3	13	2	18
Total	25	78	25	N=128

$$\chi^2 = 2.86$$

$$\text{d.f.} = 4$$

Table 8. Distribution of subjects: Orientation toward out-of-home careers for women and contraceptive behavior.

Career Pattern	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-Risk	
No career	0	2	0	2
Career before children only	11	24	13	48
Part-time career after children	6	24	6	36
Full-time career	8	27	6	41
Total	25	77	25	N=127

$$\chi^2 = 5.0487$$

$$\text{d.f.} = 6$$

Table 9. Distribution of subjects: Orientation toward out-of-home careers for women, sex, and contraceptive behavior

Career Pattern	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-risk	
No Career				
Male	0	2	0	2
Female	0	0	0	0
Career Before Children				
Male	6	9	6	21
Female	5	15	7	27
Part-Time Career				
Male	2	14	0	16
Female	4	10	6	20
Full-Time Career				
Male	3	11	5	19
Female	5	16	1	22
Total				
Male	11	36	11	N=127
Female	14	41	14	

Table 10. Distribution of subjects: Relationship in which intercourse last occurred and contraceptive behavior.^a

Relationship	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-Risk	
Casual acquaintance	1	6	3	10
Dating - not exclusively	3	20	10	33
Dating - exclusively	2	26	9	37
Planning marriage	1	14	2	17
Engaged	0	7	0	7
Living together	0	5	0	5
Total	7	78	24	N=109

^a Only subjects in Low-Risk and High-Risk categories (N=102) were used in χ^2 computations.

Table 11. Distribution of subjects: Frequency of intercourse^a and use of the pill.

Frequency of Intercourse	Use of Pill		Total
	Yes	No	
1 time	2	7	9
2-5 times	7	11	18
6-10 times	10	12	22
11-20 times	7	5	12
More than 20 times	28	10	38
Total	54	45	N=99

^a During the six months prior to testing.

$$\chi^2 = 11.99$$

$$\text{d.f.} = 4$$

Table 12. Distribution of subjects: Impregnation and use of Low-Risk contraception.^a

Impregnation	Contraceptive Behavior			Total
	Abstinence	Low-Risk	High-Risk	
Yes	0	10	0	10
No	6	68	25	99
Total	6	78	25	N=109

^a Only subjects in Low-Risk and High-Risk categories (N=103) were used in χ^2 computations.

$$\chi^2 =$$

$$\text{d.f.} = 1$$

APPENDIX II

The purpose of this study is to gather information which will help us to better understand some of the sexually related behaviors of men and women. Your answers will be anonymous and confidential. The data from this study will be used for research only. Please answer all the questions as honestly as possible, even if they do not at first seem to apply to you.

The following survey consists of two parts:

Part I -- Questions about your background, some of your plans for the future, and some of your present behaviors.

Part II -- Questions about how you view men and women in this society.

When you have completed answering all the questions, deposit your questionnaire in the box at the front of the room.

Thank you for your cooperation!!

PART I

Directions: To the right of each question there is a box. Read the question carefully, select your answer, and write the number of your answer in the box. For example, a person 19 years of age would answer question 1 as follows:

1. AGE: (1) 17-18 (3) 21-22 (5) 25-26
 (2) 19-20 (4) 23-24 (6) 27 and older

2

When you have completed Part I, go on to Part II.

1. Age:
 (1) 17-18
 (2) 19-20
 (3) 21-22
 (4) 23-24
 (5) 25-26
 (6) 27 or older
2. Sex:
 (1) Male
 (2) Female
3. Marital Status:
 (1) Single
 (2) Married
 (3) Separated or divorced
 (4) Other _____
4. Were you born and raised in this country?
 (1) Yes
 (2) No
5. Year in School:
 (1) Freshman
 (2) Sophomore
 (3) Junior
 (4) Senior
 (5) Graduate Student
6. Major Field of Study:
 (fill in blank) _____
7. Father's Occupation:
 (fill in blank) _____
8. Mother's Occupation:
 (fill in blank) _____

9. What was the level of formal education attained by your father?
- (1) Less than 7th grade
 - (2) 7th - 9th grade
 - (3) 10th - 12th grade, no high school diploma
 - (4) High school diploma
 - (5) 1-4 years of college, no degree
 - (6) 4 or more years of college, B.S. or B.A.
 - (7) Graduate or professional degree, M.S., M.A., Ph.D., D.Ed., M.D., D.D.S., etc.
10. Which of the following career patterns is most like the one followed by your mother or mother-figure?
- (1) No mother or mother-figure in the home
 - (2) Full-time homemaker at all times after marriage
 - (3) Part-time work outside the home until children came, then full-time homemaker
 - (4) Full-time work outside the home until children came, then full-time homemaker
 - (5) Part-time work outside the home before and after arrival of children
 - (6) Full-time work outside the home before and after the arrival of children
11. Religious preference:
- (1) Protestant
 - (2) Catholic
 - (3) Jewish
 - (4) Other
12. How often do you attend religious services?
- (1) Several times a week
 - (2) Once a week
 - (3) Twice a month
 - (4) Once a month
 - (5) Once or twice a year
 - (6) never
13. Do you have concrete plans to marry?
- (1) Yes
 - (2) No

14. Even if you do not have concrete plans to marry, would you like to marry sometime in the future?
- (1) Yes
 - (2) No
15. What level of education do you plan to complete?
- (1) High school
 - (2) 1-2 years of college
 - (3) 3-4 years college, no degree
 - (4) 4 or more years college, B.S. or B.A.
 - (5) Master's degree, M.S., B.S.
 - (6) Doctoral or professional degree, Ph.D., D.Ed., M.D., etc.
16. What level of education would you expect a man or woman you would like to marry to complete.
- (1) High school
 - (2) 1-2 years college
 - (3) 3-4 years college, no degree
 - (4) 4 or more years college, B.S., B.A.
 - (5) Master's degree, M.S., M.A.
 - (6) Doctoral or professional degree, Ph.D., D.Ed., M.D., etc.
17. If you are a female: Which of the following career-patterns do you expect to follow?
- If you are a male: Which of the following career-patterns do you expect your future wife to follow?
- (1) Full-time homemaker at all times after marriage
 - (2) Part-time work outside the home until children come, then full-time homemaker
 - (3) Full-time work outside the home until children come, then full-time homemaker
 - (4) Part-time work outside the home before and after arrival of children
 - (5) Full-time work outside the home before and after arrival of children
 - (6) Full-time work, no children

18. How many children would you like to have (not counting adopted children) if conditions were ideal for you?

- (1) 5 or more
- (2) 4
- (3) 3
- (4) 2
- (5) 1
- (6) None

19. How many children do you think you will actually have (not counting adopted children)?

- (1) 5 or more
- (2) 4
- (3) 3
- (4) 2
- (5) 1
- (6) None

20. Is there any physical reason why you may not be able to have children?

- (1) Yes
- (2) No

21. Have you ever experienced sexual intercourse?

- (1) Yes
- (2) No

22. How many times in the last 6 months have you experienced sexual intercourse?

- (1) None
- (2) 1 time
- (3) 2-5 times
- (4) 6-10 times
- (5) 11-20 times
- (6) More than 20 times

23. Have you ever petted to orgasm or climax with a member of the opposite sex without experiencing sexual intercourse?

- (1) Yes
- (2) No

24. How many times in the last 6 months have you petted to orgasm or climax with a member of the opposite sex without experiencing sexual intercourse?

- (1) None
- (2) 1 time
- (3) 2-5 times
- (4) 6-10 times
- (5) 11-20 times
- (6) More than 20 times

25. If you are a female: Have you ever been pregnant?

If you are a male: Have you ever impregnated a girl?

- (1) Yes
- (2) No

26. What was your relationship to the person with whom you have most recently experienced sexual intercourse?

- (1) Does not apply; have not had sexual intercourse
- (2) Casual acquaintance
- (3) Dating each other, but not exclusively
- (4) Dating each other exclusively
- (5) Planning to be married, but not engaged
- (6) Engaged
- (7) Married

27-37. Did you or your partner use any of the following contraceptive methods during your most recent intercourse experience? Indicate "yes" or "no" for each method.

- | | | |
|--|---------|--------|
| 27. Abstinence (from intercourse) | (1) Yes | (2) No |
| 28. I.U.D. (intrauterine device), loop, coil | (1) Yes | (2) No |
| 29. Pill | (1) Yes | (2) No |
| 30. Morning-after pill | (1) Yes | (2) No |
| 31. Diaphragm | (1) Yes | (2) No |
| 32. Foam or jelly | (1) Yes | (2) No |
| 33. Douche | (1) Yes | (2) No |
| 34. Rhythm or safe period | (1) Yes | (2) No |
| 35. Condom or rubber | (1) Yes | (2) No |
| 36. Withdrawal or male pulling out | (1) Yes | (2) No |
| 37. Don't know | (1) Yes | (2) No |

38. Do you feel contraceptive supplies are easy to obtain?
(1) Yes
(2) No
(3) Don't know

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PART II

We would like to know something about what people expect other people to be like. Imagine that you are going to meet someone for the first time, and the only thing that you know in advance is that he is an adult male. What sort of things do you expect? For example, what would you expect about his liking or disliking of the color red? Find the place on each scale which corresponds to what you think an adult male is like. Enter that number under Column M to the right of each item.

For example:

	M	F	S
<p>Strong dislike for the color red</p> <p>10.....20.....30.....40.....50.....60.....70</p> <p style="text-align: right; margin-right: 20px;">↙</p>	<p>Strong liking for the color red</p> <p style="font-size: 1.5em;">52</p>		
<p>Very interested in athletics</p> <p>10.....20.....30.....40.....50.....60.....70</p> <p style="text-align: left; margin-left: 20px;">↘</p>	<p>Not at all interested in athletics</p> <p style="font-size: 1.5em;">17</p>		

The arrows in the above example are used only to demonstrate how the number which has been entered in Column M corresponds to a specific point on the scale. You do not need to place arrows on your scales.

On the following pages are a number of scales like the one above. Find the place on each scale which corresponds to what you think an adult male is like. Enter that number under Column M. You may use any number from 10 to 70, not just the multiples of 10. PLEASE BE SURE TO MARK EVERY ITEM.

		M	F	S
1.	Not at all aggressive 10.....20.....30.....40.....50.....60.....70			
2.	Very irrational 10.....20.....30.....40.....50.....60.....70			
3.	Very practical 10.....20.....30.....40.....50.....60.....70			
4.	Not at all independent 10.....20.....30.....40.....50.....60.....70			
5.	Not at all consistent 10.....20.....30.....40.....50.....60.....70			
6.	Very Emotional 10.....20.....30.....40.....50.....60.....70			
7.	Very realistic 10.....20.....30.....40.....50.....60.....70			
8.	Not at all idealistic 10.....20.....30.....40.....50.....60.....70			
9.	Does not hide emotions at all 10.....20.....30.....40.....50.....60.....70			
10.	Very subjective 10.....20.....30.....40.....50.....60.....70			

			M	F	S
11.	Mainly interested in details 10.....20.....30.....40.....50.....60.....70	Mainly interested in generalities 10.....20.....30.....40.....50.....60.....70			
12.	Always thinks before acting 10.....20.....30.....40.....50.....60.....70	Never thinks before acting 10.....20.....30.....40.....50.....60.....70			
13.	Not at all easily influenced 10.....20.....30.....40.....50.....60.....70	Very easily influenced 10.....20.....30.....40.....50.....60.....70			
14.	Not at all talkative 10.....20.....30.....40.....50.....60.....70	Very talkative 10.....20.....30.....40.....50.....60.....70			
15.	Very grateful 10.....20.....30.....40.....50.....60.....70	Very ungrateful 10.....20.....30.....40.....50.....60.....70			
16.	Doesn't mind at all when things are not clear 10.....20.....30.....40.....50.....60.....70	Minds very much when things are not clear 10.....20.....30.....40.....50.....60.....70			
17.	Very dominant 10.....20.....30.....40.....50.....60.....70	Very submissive 10.....20.....30.....40.....50.....60.....70			
18.	Dislikes math and science very much 10.....20.....30.....40.....50.....60.....70	Likes math and science very much 10.....20.....30.....40.....50.....60.....70			
19.	Not at all reckless 10.....20.....30.....40.....50.....60.....70	Very reckless 10.....20.....30.....40.....50.....60.....70			
20.	Not at all excitable in a major crisis 10.....20.....30.....40.....50.....60.....70	Very excitable in a major crisis 10.....20.....30.....40.....50.....60.....70			

			M	F	S
21.	Not at all excitable in a minor crisis 10.....20.....30.....40.....50.....60.....70	Very excitable in a minor crisis 70.....60.....50.....40.....30.....20.....10			
22.	Not at all strict 10.....20.....30.....40.....50.....60.....70	Very strict 70.....60.....50.....40.....30.....20.....10			
23.	Very weak personality 10.....20.....30.....40.....50.....60.....70	Very strong personality 70.....60.....50.....40.....30.....20.....10			
24.	Very active 10.....20.....30.....40.....50.....60.....70	Very passive 70.....60.....50.....40.....30.....20.....10			
25.	Not at all able to devote self completely to others 10.....20.....30.....40.....50.....60.....70	Able to devote self completely to others 70.....60.....50.....40.....30.....20.....10			
26.	Very blunt 10.....20.....30.....40.....50.....60.....70	Very tactful 70.....60.....50.....40.....30.....20.....10			
27.	Very gentle 10.....20.....30.....40.....50.....60.....70	Very rough 70.....60.....50.....40.....30.....20.....10			
28.	Very helpful to others 10.....20.....30.....40.....50.....60.....70	Not at all helpful to others 70.....60.....50.....40.....30.....20.....10			
29.	Not at all competitive 10.....20.....30.....40.....50.....60.....70	Very competitive 70.....60.....50.....40.....30.....20.....10			
30.	Very logical 10.....20.....30.....40.....50.....60.....70	Very illogical 70.....60.....50.....40.....30.....20.....10			

			M	F	S
31.	Not at all competent	10.....20.....30.....40.....50.....60.....70			
32.	Very worldly	10.....20.....30.....40.....50.....60.....70			
33.	Not at all skilled in business	10.....20.....30.....40.....50.....60.....70			
34.	Very direct	10.....20.....30.....40.....50.....60.....70			
35.	Knows the way of the world	10.....20.....30.....40.....50.....60.....70			
36.	Not at all kind	10.....20.....30.....40.....50.....60.....70			
37.	Not at all willing to accept change	10.....20.....30.....40.....50.....60.....70			
38.	Feelings not easily hurt	10.....20.....30.....40.....50.....60.....70			
39.	Not at all adventurous	10.....20.....30.....40.....50.....60.....70			
40.	Very aware of the feelings of others	10.....20.....30.....40.....50.....60.....70			

		M	F	S
41.	Not at all religious 10.....20.....30.....40.....50.....60.....70			
42.	Not at all intelligent 10.....20.....30.....40.....50.....60.....70			
43.	Not at all interested in own appearance 10.....20.....30.....40.....50.....60.....70			
44.	Can make decisions easily 10.....20.....30.....40.....50.....60.....70			
45.	Gives up very easily 10.....20.....30.....40.....50.....60.....70			
46.	Very shy 10.....20.....30.....40.....50.....60.....70			
47.	Always does things without being told 10.....20.....30.....40.....50.....60.....70			
48.	Never cries 10.....20.....30.....40.....50.....60.....70			
49.	Almost never acts as a leader 10.....20.....30.....40.....50.....60.....70			
50.	Never worried 10.....20.....30.....40.....50.....60.....70			

51. Very neat in habits 10.....20.....30.....40.....50.....60.....70 Very sloppy in habits
52. Very quiet 10.....20.....30.....40.....50.....60.....70 Very loud
53. Not at all intellectual 10.....20.....30.....40.....50.....60.....70 Very intellectual
54. Very careful 10.....20.....30.....40.....50.....60.....70 Very careless
55. Not at all self-confident 10.....20.....30.....40.....50.....60.....70 Very self-confident
56. Feels very superior 10.....20.....30.....40.....50.....60.....70 Feels very inferior
57. Always sees self as running the show 10.....20.....30.....40.....50.....60.....70 Never sees self as running the show
58. Not at all uncomfortable about being aggressive 10.....20.....30.....40.....50.....60.....70 Very uncomfortable about being aggressive
59. Very good sense of humor 10.....20.....30.....40.....50.....60.....70 Very poor sense of humor
60. Not at all understanding of others 10.....20.....30.....40.....50.....60.....70 Very understanding of others

	M	F	S
51.			
52.			
53.			
54.			
55.			
56.			
57.			
58.			
59.			
60.			

			M	F	S
71.	Very uncomfortable when people express emotions	10.....20.....30.....40.....50.....60.....70			
	Not at all uncomfortable when people express emotions				
72.	Easily expresses tender feelings	10.....20.....30.....40.....50.....60.....70			
	Does not express tender feelings				
73.	Very conceited about appearance	10.....20.....30.....40.....50.....60.....70			
	Never conceited about appearance				
74.	Retiring	10.....20.....30.....40.....50.....60.....70			
	Forward				
75.	Thinks men are are superior to women	10.....20.....30.....40.....50.....60.....70			
	Does not think men are superior to women				
76.	Very sociable	10.....20.....30.....40.....50.....60.....70			
	Not at all sociable				
77.	Very affectionate	10.....20.....30.....40.....50.....60.....70			
	Not at all affectionate				
78.	Very conventional	10.....20.....30.....40.....50.....60.....70			
	Not at all conventional				
79.	Very masculine	10.....20.....30.....40.....50.....60.....70			
	Not at all masculine				
80.	Very feminine	10.....20.....30.....40.....50.....60.....70			
	Not at all feminine				

81. Very assertive Not at all assertive
 10.....20.....30.....40.....50.....60.....70

82. Very impulsive Not at all impulsive
 10.....20.....30.....40.....50.....60.....70

M	F	S

Now we would like to go through these same scales for a second time. Again imagine that you are meeting a person for the first time, and the only information you have is that she is an adult female. This time, find the place on each scale which corresponds to what you think an adult female is like. Enter that number under Column F to the right of each item. PLEASE BE SURE TO MARK EVERY ITEM.

Finally, please go through these same scales for a third and last time, indicating what you are like. Enter your score in Column S.