

## Changes in Sex Differences in Sexual Behavior: A Replication of a Study on West German Students (1966-1981)

Ulrich Clement, Dipl.-Psych.,<sup>1</sup> Gunter Schmidt, Dr. phil.,<sup>1</sup> and  
Margret Kruse, stud. phil.<sup>1</sup>

---

*In 1966, at the start of the student movement and the sexual liberalization process, we studied the sexual behavior and attitudes of 3,666 male and female students from 12 West German universities by mailed questionnaires. In 1981 we replicated this study with 1,922 students from 13 universities (10 the same as 1966, 3 founded after 1966). In both studies the students were selected at random. Results of these comparative studies are presented with a view to the changes in sex differences. Sex differences in masturbation behavior have considerably decreased since 1966; masturbation is nonetheless still the form of sexual behavior with the most striking differences between the sexes. The sex differences in coital behavior are now reversed, female students being earlier and more active than males. As regards the tendency to change partners or for sexual relations outside a steady relationship, the differences between men and women have disappeared. In their attitudes to sexuality, female students in 1981 are somewhat more liberal than their male counterparts, whereas hardly any difference could be found in 1966. These changes in sex differences are observed in all subsamples, i.e., in young and old, in strictly religious and nonreligious students, and in students from both upper- and lower-class backgrounds (educational level of parents).*

---

**KEY WORDS:** sex differences; sexual liberalization; sexual behavior; social history of sex.

Revised version of a paper read at the 8th Annual Meeting, International Academy of Sex Research, August 22-26, 1982, in Copenhagen. This investigation was supported by a research grant from the Deutsche Forschungsgemeinschaft, Bonn, West Germany. The report was translated by Tom Todd, Hamburg.

<sup>1</sup>Abteilung für Sexualforschung, Psychiatrische and Nervenklinik der Universität, Martini-strasse 52, D-2000 Hamburg 20, West Germany.

## INTRODUCTION

The concept *sexual liberalization* describes a certain change in sexual attitudes, norms, and behavior. Sexual attitudes today are less restrictive and sexuality is practiced more permissively and earlier in life than 20 years ago. Differences between the sexes in their sexual life are no longer so apparent. Comparative studies (Bell and Chaskes, 1970; Christensen and Gregg, 1970; Robinson *et al.*, 1972; Schmidt and Sigusch, 1972; Bauman and Wilson, 1976; King *et al.*, 1977; Barrett, 1980; Bell and Coughy, 1980; Robinson and Jedlicka, 1982) have all arrived at the same diagnosis of these trends (see Table I). However, the studies are either based on relatively small and selected samples or are limited to a few basic data on sexuality. There is a lack of replication studies with larger samples of well-defined populations investigating a broad range of sexual data that would enable one to recognize and analyze the extent and kind of liberalization.

In this paper we report on the results of such a replication study, which is, however, limited to one social group, namely, West German students. In 1981 we repeated a survey carried out in 1966 (Giese and Schmidt, 1968) using the same sampling and questionnaire technique. The reasons for selecting this group for our study were at first pragmatic: students were the first social group to have been investigated in a comprehensive study in German-speaking countries. This study was, furthermore, carried out at a particularly important time, viz., at the onset of significant sociopolitical changes such as the students' movement and the sexual liberalization process. Other investigations in West Germany, e.g., on industrial workers (Schmidt and Sigusch, 1971; Sigusch and Schmidt, 1971) or teenagers (Sigusch and Schmidt, 1973a,b; Schoof-Tams *et al.*, 1976), were carried out at the end of the 1960s or at the beginning of the 1970s and were thus already influenced by the liberalization process.

For the choice of students there are, however, other substantial arguments. Being a young and mobile group with a high level of education, they are particularly sensitive to social changes; and, at least in this century, the educated middle classes played a pioneering role in shaping new patterns of sexuality in Western industrialized societies (Shorter, 1975). This is especially true of the development in gender differences in sexuality, an aspect we shall examine closely in this paper. Sexual liberalization went hand in hand with a reduction in patterns of behavior and attitudes specific to one sex (see Table I). We describe the extent of this convergence and pose the question as to the existing differences between the sexes in a social group in which the sexual prohibitions imposed on men and women no longer vary so greatly as before.

## METHOD

In 1966 the survey was conducted at 12 West German universities; 6,128 students selected by a random procedure from university address lists were sent a questionnaire on sexual behavior and attitudes to sexuality; 3,666 students returned the questionnaire. The return rate thus reached 59.8% (Table II). In 1981 we carried out a survey at 13 universities (10 universities from the 1966 study plus three newly founded universities). Of 5,335 randomly selected students, from these 1,952, or 36.6%, completed and returned the questionnaire.

The difference in the return rate is one of the most marked changes that we found in the entire study. Students are apparently less willing today to participate in sociological investigations. *Sexuality* as a topic of interest and relevance has probably lost ground. In 1966 there were slightly fewer replies from female students than from male students (55.3% vs. 61.3%). For legal reasons (protection of personal data), we were unable to break down the return rate by sex in 1981.<sup>2</sup> In our 1981 sample, however, women are overrepresented (Table III), which seems to indicate that this time fewer women than men refused the questionnaire.

A comparison of the sample with the few available data from official West German student statistics showed only slight differences in both surveys as regards age, marital status, course of studies (1966 and 1981), denomination and occupation of father (available only for 1966), and percentage of foreigners (available only for 1981). Compared with these rough data, the samples can be considered representative for the West German student populations of 1966 and 1981.

Of those surveyed in 1966, 95-98% were between 20 and 30 years old and were born between 1936 and 1946. In 1981, 87 to 89% belonged to this age group and were born in the years 1951-1961. In the 15 years separating the studies, the composition of students has changed:

The number of women has distinctly increased (Table III); students today are somewhat older and are more often married (Table IV); furthermore, they are more frequently from nonacademic families (although the latter are still well underrepresented by comparison with the total population), are

<sup>2</sup>In 1966 we were given the students' addresses by the universities and wrote to them ourselves. We were thus able to establish how males and females were distributed in our sample. In 1981 the students were mailed the questionnaires directly by the universities to prevent us from knowing the addresses. We do not therefore know how gender was distributed in the sample contacted; we only know the distribution of gender for the student population of West Germany and for each of the 13 universities.

**Table I. Overview: Comparative Studies on Sexual Behavior and Attitudes to Sexuality of Unmarried Adolescents and Young Adults**

Study	Time span investigated	Country	Sample gender	Social class	Generation <sup>a</sup>	N <sup>b</sup>	Sexual data	Main results
Christensen and Gregg, 1970	1958-1968	USA	Males and females	College students	~ 1935-1950	1226	Coitus experience, attitudes to sexuality (premarital, virginity), sexual guilt	Increase in coital experience in Danish students and American female students; increase in permissive sexual attitudes; decline of sex differences in coital experience and attitudes; less <i>guilt</i> feelings because of coital relations in American students
		Denmark	Males and females	University students	~ 1935-1950	430		
Schmidt and Sigush, 1972	~ 1960-1970	West Germany	Males and females	High education <sup>c</sup>	1936-1954	3757	Masturbation experience, petting experience, coitus experience, attitudes to sexuality (premarital, virginity)	Increase in petting and coital experience; <sup>d</sup> increase in masturbation experience especially in high-educated girls; decline of sex and class differences in sexual behavior; increase in permissive attitudes in high-educated subjects
			Males and females	Low education <sup>c</sup>	1947-1954	483		
Bauman and Wilson, 1976	1968-1972	USA	Males and females	College students	~ 1945-1955	359	Coitus experience, attitudes to sexuality (premarital)	Increase in coital experience; increase in permissive attitudes; decline of sex differences in attitudes

Bell and Coughley, 1980 <sup>a</sup>	1958-1978	USA	Females	College students	~ 1935-1960	738	Dating behavior, coitus experience, sexual guilt	Increase in coital experience in steady and nonsteady relationships; no changes in number of coitus partners (comparison only for 1968 vs. 1978 possible); decrease in age at first steady relationship; less guilt feelings because of coital relations
Barrett, 1980 <sup>b</sup>	1968-1978	Canada	Males and females	University students	~ 1940-1960	~ 3800	Coitus experience, coitus partners, homosexual experience	Increase in coital experience; no decline in sex differences; no change in number of coital partners (comparisons only for 1974 vs. 1978); no change in homosexual experience (comparisons only for 1974 vs. 1978)
Robinson and Jedlicka <sup>c</sup>	1965-1980	USA	Males and females	College students	~ 1945-1960	1374	Petting experience, coitus experience, sexual attitudes (premarital)	Increase in petting and coital experience; increase in permissive attitudes; decline in sex differences in behavior and attitudes

<sup>a</sup>Range of year of birth of subjects.

<sup>b</sup>Total number of cases.

<sup>c</sup>High = 13 years of school or more; low = 9 years of school or less.

<sup>d</sup>In this study, sexual experiences during adolescence (15-18 years) were compared.

<sup>e</sup>Three investigations (1958, 1968, 1978). For earlier reports, see Bell and Chaskes, 1970.

<sup>f</sup>Four investigations (1968, 1971, 1974, 1978).

<sup>g</sup>Four investigations (1965, 1970, 1975, 1980). For earlier reports, see Robinson *et al.*, 1977.

**Table II.** Samples: Mailed Questionnaires and Return Rate

	1966	1981
Mailed questionnaires	6,128	5,335
Returned questionnaires	3,666	1,952 <sup>a</sup>
Return Rate	59.8%	36.6%

<sup>a</sup>Thirty questionnaires were returned after computing had begun. The sample consists of 1922 cases.

**Table III.** Samples: Sex, in Relation to Population of Students

	Samples				Population	
	1966		1981		1966	1981
Males	2,835	77%	1,106	58%	77%	62%
Females	831	23%	816	42%	23%	38%
Total	3,666	100%	1,922	100%	100%	100%

more often Catholic and less often interested in church activities. These differences have to be taken into account when evaluating the data.

The 1966 questionnaire contained 280 questions. The following areas were covered (in this order): personal and psychological background; sexuality in childhood; sexual development since puberty; coital and masturbation behavior in the 12 months prior to the survey; attitudes to sexuality. The 1981 questionnaire contained 194 questions, of which 125 were identical with the 1966 study. New questions were included on topics that were not as relevant in 1966 as in 1981 (women's liberation movement, flat sharing), as well as aspects that were not covered adequately in the first survey (partner situation and type of relationship; problems with university

**Table IV.** Samples: Background Data

	Males		Females	
	1966 ( <i>N</i> = 2,835)	1981 ( <i>N</i> = 1,106)	1966 ( <i>N</i> = 831)	1981 ( <i>N</i> = 816)
Age				
Mean	24.0	25.2	23.2	24.8
SD	2.8	4.1	2.9	4.6
Marital status				
Single	89%	86%	92%	80%
Married	11%	13%	8%	17%
Divorced	—	1%	—	3%

studies; detailed questions on sexual attitudes). Fewer questions were asked about aspects that were covered in unusual detail in the old questionnaire, especially with respect to sexual techniques.<sup>3</sup> The survey techniques of both studies were identical: the students were sent the questionnaire with a detailed letter in which the purpose of the study was explained and a stamped addressed envelope for replies. Two to three weeks later they were sent a reminder requesting them again to cooperate in the investigation.

The samples are biased by the refusal rates; it is not possible to assess to what extent they are representative of the populations. In addition, the far higher refusal rate in the 1981 study impairs the comparability of the studies. In view of this, we decided on the following principle in the evaluation of data: the study would deal with trends in the changes in sex differences among students and not with estimates of the incidence of certain forms of behavior and attitudes in the population. To determine the changes in sex differences, not only would the entire sample be analyzed, but also the attempt would be made to validate the trends in various subsamples defined according to relevant variables (age, marital status, school education of parents, church attendance, religious conviction, urban-rural background). The trends observed in all subsamples would be considered valid for the total population. This procedure also ensured control over the different social backgrounds of students in 1981 as compared with 1966 (see above). Almost always we found the same relations in the subsamples as in the entire sample. We demonstrate this later with a few examples.

Because of the large number of cases ( $N = 5,588$ ), we rely on descriptive statistics and do not include the results of statistical significance testing in the tables. The only exception is Table XV, on homosexual behavior, because of the small marginal frequencies of the variables included.

## MASTURBATION

Figure 1 shows the number of students who had masturbated at least once by a particular age (accumulative incidence). In all age groups between 12 and 20 years, the 1981 students had more masturbation experience than the 1966 students. Age at first masturbation has thus dropped. These changes are particularly distinct for female students. For them, the accumulative incidence of masturbation is in some age groups as much as 30% higher than in 1966, whereas it is only 11% higher for male students. Owing to the greater changes for female students, the sex differences in the accumulative incidence have decreased considerably but are

<sup>3</sup>The questionnaires for both studies are available from the authors.

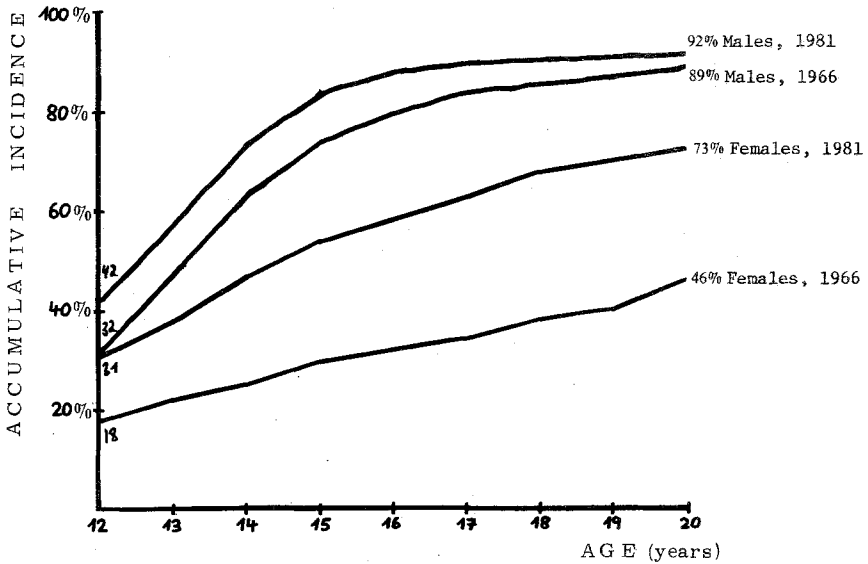


Fig. 1. Experience in masturbation accumulative incidence.  $N = 2,835$  (males, 1966), 1,106 (males, 1981), 835 (females, 1966), 816 (females, 1981).

still distinct: the percentage difference between experienced men and women at 18 years of age sank, for example, from 48% (1966) to 23% (1981). The age range of women at first masturbation is wider than for men (Fig. 1); young men mostly start masturbating at about the time of puberty. Masturbation is apparently more puberty-dependent for males.<sup>4</sup>

The trends described—younger age at first masturbation, decreasing but still distinct sex differences—can be observed in all subsamples (according to urban-rural background; parents' school education; father's occupation; church attendance; religious conviction). Figure 2 is an exemplary illustration of this for students whose parents have a particularly low and particularly high level of education as well as for students high and low in church attendance. (The figure also shows that parents' school education has no influence on masturbation behavior, whereas interest in church has just as pronounced an influence as before. However, this result is of secondary interest for our purposes).

<sup>4</sup>If one takes age at first menstruation or first ejaculation as criterion for onset of puberty, then this correlates with age at first masturbation as follows: 1966,  $r = 0.43$  (men,  $N = 2,412$ ),  $r = 0.14$  (women,  $N = 406$ ); 1981,  $r = 0.43$  (men,  $N = 890$ ),  $r = 0.07$  (women,  $N = 591$ ) (Pearson product-moment correlation; only students who had masturbation experience included).



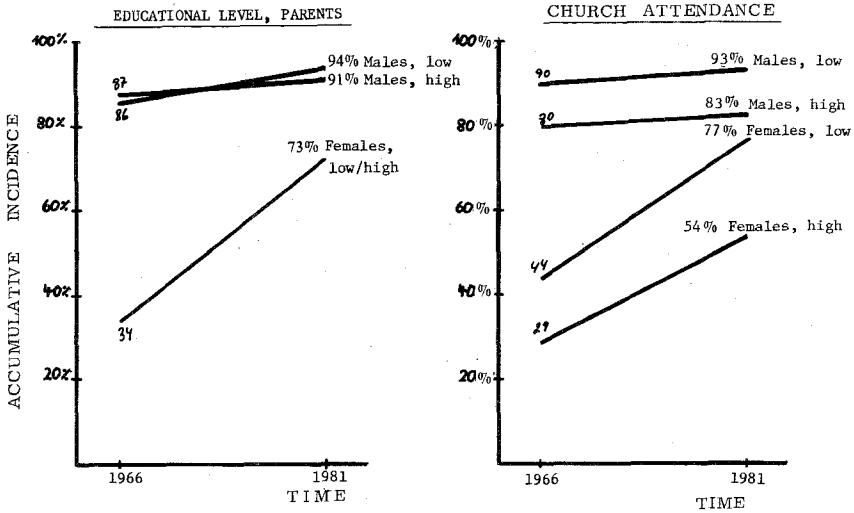


Fig. 2. Masturbation: accumulative incidence by age 18, in various subsamples (extreme groups). For parents' educational level, low indicates 9 years and high indicates a university degree for the father and at least 13 years for the mother; *N* = between 107 for females, high, 1981, and 600 for males, low, 1966. For church attendance, low indicates never in preceding 12 months, and high indicates regularly in preceding 12 months; *N* = between 68 for females, high, 1981, and 542 for males, low, 1966.

The relation between age of first masturbation and of first heterosexual contact (defined as petting with orgasm or coitus) has also changed for female students. For them, masturbation is more frequently the first sexual experience than in 1966 (66% vs. 44%, Table V); masturbation continues to be the first sexual experience for about 90% of male students. Differences between the sexes have thus also decreased here. It has become more typical for women to experience sexuality first without a man.

Table VI shows the percentage of subjects who masturbated at least occasionally in the 12 months prior to the survey (active incidence of masturbation). There has also been a reduction in sex differences here, although in 1981 as before more men than women are active in masturbation. This trend applies both for married and single students, as well as for coitally active and inactive students (Table V). There is no longer a distinct influence of marital status on masturbation incidence, as in 1966. Just as many married as single students had masturbated at least occasionally in the year before the survey, although the latter did so with a distinctly greater frequency (Table VII). Generally, however, the tendency to continue masturbation after marrying or (in singles) when frequent coital relations exist (Table VI) has increased in both sexes. Sexual intercourse and masturbation are more frequently coexisting forms of sexuality than in

Table V. Age at First Masturbation in Relation to Age at First Heterosexual Experience<sup>a</sup>

	Males, 1966 (N = 2835)	Males, 1981 (N = 1106)	Females, 1966 (N = 831)	Females, 1981 (N = 816)
1. No masturbation, no heterosexual experience	2%	1%	18%	2%
2. Masturbation, no heterosexual experience	21%	9%	12%	3%
3. First masturbation earlier than first heterosexual experience	67%	81%	32%	63%
4. First masturbation later than first heterosexual experience	2%	1%	5%	9%
5. No masturbation, heterosexual experience	5%	4%	28%	16%
6. First masturbation and first heterosexual experience at about the same age	3%	3%	4%	6%

<sup>a</sup>Defined as having experienced coitus or petting with orgasm.

**Table VI.** Masturbation: Active Incidence (Last 12 Months), by Age, Marital Status, and Frequency of Coitus

Total	Males, 1966	Males, 1981	Females, 1966	Females, 1981
	80% (N = 2,835)	89% (N = 1,106)	43% (N = 831)	73% (N = 816)
Age				
20-21 years	83% (N = 399)	87% (N = 147)	38% (N = 214)	60% (N = 165)
22-23 years	83% (N = 836)	90% (N = 270)	39% (N = 266)	73% (N = 213)
24-25 years	79% (N = 883)	89% (N = 238)	49% (N = 208)	79% (N = 157)
26-30 years	77% (N = 657)	89% (N = 329)	50% (N = 98)	77% (N = 180)
Marital status				
Single <sup>a</sup>	82% (N = 2,509)	89% (N = 950)	44% (N = 760)	73% (N = 653)
Married	60% (N = 314)	86% (N = 139)	29% (N = 68)	74% (N = 136)
Monthly frequency of coitus (last 12 months)				
None	85% (N = 1,115)	87% (N = 209)	39% (N = 399)	67% (N = 117)
Regularly <sup>b</sup>	68% (N = 435)	87% (N = 294)	38% (N = 130)	72% (N = 214)

<sup>a</sup>Never married.<sup>b</sup>More than 10 coital contacts per month.

1966. This is also clearly shown by the fact that both masturbation and coital activity have increased in the entire sample and in all subsamples. Greater heterosexual permissiveness is not accompanied by less but, on the contrary, by more interest in masturbation.

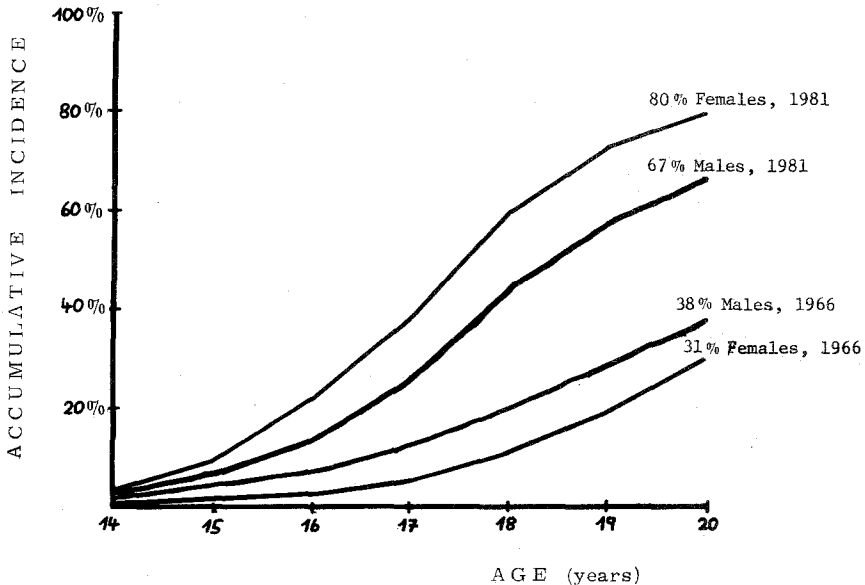
The parameter of masturbation behavior for which sex differences remain unchanged or even increased slightly is the average monthly frequency of the active groups, i.e., of those students who masturbated at all in the year prior to the survey (Table VII). Although the frequency is greater in 1981 than in 1966 for both sexes, it is still twice as high for men.

## COITUS

Figure 3 shows that the age of men and women at first intercourse has considerably dropped. Students in 1981 had their first coitus about 3-4 years

**Table VII.** Masturbation: Monthly Frequency of Active Groups (Median, Last 12 Months), by Marital Status and Frequency of Coitus

	Males, 1966	Males, 1981	Females, 1966	Females, 1981
Total	5.2 ( <i>N</i> = 2,270)	7.4 ( <i>N</i> = 982)	2.2 ( <i>N</i> = 358)	3.2 ( <i>N</i> = 599)
Marital status				
Single <sup>a</sup>	5.5 ( <i>N</i> = 2,069)	8.1 ( <i>N</i> = 848)	2.2 ( <i>N</i> = 337)	3.3 ( <i>N</i> = 475)
Married	2.3 ( <i>N</i> = 190)	3.6 ( <i>N</i> = 119)	— <sup>b</sup> ( <i>N</i> = 20)	2.6 ( <i>N</i> = 101)
Monthly frequency of coitus (last 12 months)				
None	6.6 ( <i>N</i> = 945)	9.4 ( <i>N</i> = 181)	2.4 ( <i>N</i> = 157)	3.5 ( <i>N</i> = 78)
Regularly <sup>c</sup>	3.7 ( <i>N</i> = 297)	5.7 ( <i>N</i> = 257)	2.8 ( <i>N</i> = 50)	3.1 ( <i>N</i> = 155)

<sup>a</sup>Never married.<sup>b</sup>Number of cases too small to calculate median.<sup>c</sup>More than 10 coital contacts per month.**Fig. 3.** Experience in coitus: accumulative incidence. *N* = 2,835 (males, 1966), 1,106 (males, 1981), 835 (females, 1966), 816 (females, 1981).

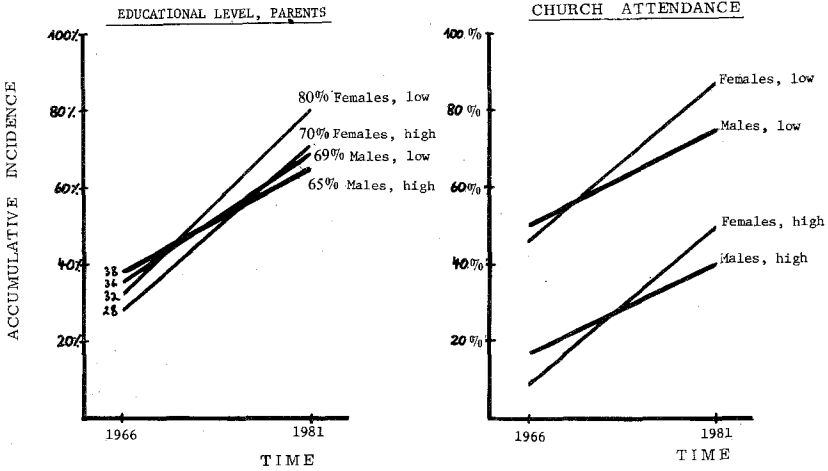


Fig. 4. Coitus: accumulative incidence by age 20, in various subsamples (extreme groups). For definitions and number of cases, see Fig. 2.

earlier (difference in median ages)<sup>5</sup> than students in 1966. As with masturbation, the changes here are also far more pronounced for women than for men, which leads to an inversion of the sex differences; whereas in 1966 men had sexual intercourse earlier than women (about a half year, median difference), in 1981 it was women who had intercourse earlier (about 1 year, median difference). The sex differences both in 1966 and in 1981 are less than those in masturbation. Masturbation is influenced far more by gender than coital behavior.

The observed trends (younger at first intercourse, inversion of sex differences) can be observed in all subsamples. Figure 4 also shows this for students with different social backgrounds (parents' school education) and church attendance. (It should be noted that parents' school education has little influence on coital behavior, whereas church attendance continues to have a strong influence.)

Following the accumulative incidence, the active coital incidence (percentage of students with coital experience in the 12 months prior to the survey) of unmarried students has risen considerably in the last 15 years in all age groups (Table VIII). The sex differences have been inverted here as

<sup>5</sup> Average age (median) on first intercourse: 1966, 22.3 years (men), 22.8 years (women); 1981, 19.4 years (men), 18.4 years (women).

**Table VIII.** Coitus: Active Incidence (Prior 12 Months) in Single Students,<sup>a</sup> by Age

	Males, 1966	Males, 1981	Females, 1966	Females, 1981
Total	56% (N = 2,509)	78% (N = 950)	48% (N = 760)	83% (N = 653)
Age groups				
20-21 years	42% (N = 394)	60% (N = 146)	39% (N = 212)	78% (N = 161)
22-23 years	51% (N = 809)	75% (N = 263)	56% (N = 248)	82% (N = 199)
24-25 years	60% (N = 781)	82% (N = 216)	53% (N = 185)	87% (N = 135)
26-30 years	69% (N = 488)	87% (N = 258)	48% (N = 77)	93% (N = 115)

<sup>a</sup>Never married.**Table IX.** Coitus: Monthly Frequency of Active Groups (Median, Prior 12 Months), by Marital Status

	Males, 1966	Males, 1981	Females, 1966	Females, 1981
Single <sup>a</sup>	3.9 (N = 1,394)	6.9 (N = 742)	4.5 (N = 362)	6.9 (N = 543)
Married	10.6 (N = 311)	8.4 (N = 135)	11.2 (N = 68)	6.8 (N = 129)

<sup>a</sup>Never married.

well; particularly among younger students (20-21 years) distinctly more women enter into coital relationships. In the time between the two surveys, the coital frequency of single students (active groups) was markedly increased (Table IX). In this respect there are, as before, no sex differences. By contrast to single students, the coitus frequency of married students dropped distinctly, which has led to there being hardly any difference between married and unmarried students in their monthly coital frequency.<sup>6</sup> Coital activity is influenced less in 1981 by marital status but rather by whether the student has a steady partner.

### COITUS PARTNER

The small changes in the number of coital partners were surprising for us. In both sexes and surveys, 60-73% of the coitally active students had

<sup>6</sup>Correlations (phi coefficient) of coital frequency (active groups, median as cutting point) with marital status (single, married): 1966,  $\phi = 0.33$  (men),  $\phi = 0.26$  (women); 1981,  $\phi = 0.07$  (men),  $\phi = 0.01$  (women).

only one partner in the year prior to the survey (Table X). Only a minority of between 8 and 18% had four or more partners in the presurvey year, with the figures for 1981 slightly higher than for 1966. The small sex differences that pointed to a somewhat higher partner mobility for men in 1966 have disappeared.

If one considers the total number of coital partners of those students who have coital experience, there was an evident increase by 1981; 42% of the men and women had more than six partners, as compared to 27% and 14%, respectively, in 1966 (Table XI). The sex differences have balanced out here, too. However, these figures are not an indication of a tendency for greater permissiveness in changing partners, as students in 1981 had coital experience for a longer time. If one examines the number of partners in relation to the length of coital experience, then the differences just described almost disappear (Table XI). There are only slight but constant changes for women, with a general disappearance of the difference between sexes. The number of partners is a rough parameter and is no indication of the length or quality of relationships. Items not directly comparable from both surveys do, however, clearly show that students' sexual partners, in 1966 as in 1981, are for the main part steady partners in a more lasting relationship.

Even if overall partner mobility has not changed too much, there seems, nonetheless, to be a greater tendency in 1981 to engage at least occasionally in sexual relations outside the steady relationship. Table XII shows that more married men and women have extramarital relationships, no matter whether they have been married for only a short time (up to 2 years) or for longer (3-6 years). Here, too, there is a tendency for an inversion of sex differences for the longer married. If in 1966 the women were more monogamous, today it is more the men. Without having the data to compare, one may suppose that the number of outside relationships has increased for steady unmarried couples: in 1981, 34% of the women and 29% of the men with a steady partner have had at least one outside relationship. Here, too, the women tend more toward "sexual infidelity;" the differences, however, are small.

**Table X.** Coitus: Number of Partners during the Previous Months (Single Students, Active Groups)

Number of partners	Males, 1966 (N = 1,393)	Males, 1981 (N = 737)	Females, 1966 (N = 366)	Females, 1981 (N = 556)
1	63%	60%	73%	62%
2-3	24%	24%	19%	20%
4-5	7%	9%	4%	10%
6+	5%	7%	4%	8%

**Table XI.** Coitus: Percentages of Students with Six or More Partners<sup>a</sup> (Coitus-Experienced Students), by Marital Status and Length of Coitus Experience

	Males, 1966	Males, 1981	Females, 1966	Females, 1981
Total	27% (N = 1,722)	42% (N = 933)	14% (N = 434)	42% (N = 732)
Marital status				
Single <sup>b</sup>	27% (N = 1,402)	40% (N = 781)	15% (N = 365)	42% (N = 576)
Married	23% (N = 314)	43% (N = 135)	6% (N = 68)	39% (N = 132)
Length of coitus experience				
1 year or less	0% (N = 293)	1% (N = 80)	2% (N = 130)	0% (N = 47)
2-3 years	11% (N = 432)	18% (N = 118)	8% (N = 142)	15% (N = 111)
4-5 years	25% (N = 384)	20% (N = 201)	26% (N = 88)	30% (N = 160)
6-9 years	46% (N = 449)	47% (N = 309)	33% (N = 60)	50% (N = 235)

<sup>a</sup>Total number of partners since first coitus.

<sup>b</sup>Never married.

## FEMALE ORGASM

In our questionnaires we placed a greater emphasis on data on sexual behavior. Questions on the kind and intensity of sexual experience were small in number. The most detailed deals with the frequency of orgasm of women; this has distinctly increased for masturbation, i.e., in 1981 more women than before always or almost always reached orgasm on masturbation (Table XIII). Frequency of orgasm on coitus has remained unchanged for unmarried students, but has distinctly sunk for married partners (Table XIII). Sexual intercourse between married partners is more seldom (see above) and, at least for women, gives less pleasure. For students, marriage is less an opportunity for satisfying sexuality than in 1966; it is no longer

**Table XII.** Experience in Extramarital Coitus, by Length of Marriage

Length of marriage	Males, 1966	Males, 1981	Females, 1966	Females, 1981
2 years or less	6% (N = 199)	14% (N = 44)	0% (N = 49)	7% (N = 45)
3-6 years	17% (N = 98)	30% (N = 53)	19% (N = 16)	48% (N = 42)



**Table XIII.** Orgasm by Masturbation and Coitus of Active Female Groups (Previous 12 Months)

	Females, 1966	Females, 1981
Masturbation		
Orgasm never	23%	12%
Orgasm (almost) always	46%	66%
	( <i>N</i> = 359)	( <i>N</i> = 624)
Nonmarital coitus <sup>a</sup>		
Orgasm never	16%	19%
Orgasm (almost) always	26%	23%
	( <i>N</i> = 356)	( <i>N</i> = 528)
Marital coitus		
Orgasm never	5%	16%
Orgasm (almost) always	45%	25%
	( <i>N</i> = 67)	( <i>N</i> = 135)

<sup>a</sup>Single, never married students.

combined with sexual privileges. Frequency of orgasm on masturbation is distinctly higher than on coitus, both in 1966 and in 1981. This difference, however, is, far more marked today; the percentage of women who always or almost always reach orgasm was three times greater for masturbation than for coitus in 1981.

### HOMOSEXUAL BEHAVIOR

There has been an increase in the number of male and female students with homosexual experience; this applies for various parameters of homosexual behavior (Table XIV). The most pronounced increase is that for women; this has led to gender differences in homosexual behavior leveling out.

There are large discrepancies between accumulative incidence and active incidence in the previous 12 months both in 1981 and 1966. One can infer from this that any homosexual experiences are for most students temporary and confined to younger years.

The incidence of homosexual contacts with orgasm in the previous 12 months is certainly the most accurate indicator for the incidence of homosexual orientation. This characteristic has remained almost unchanged for men; for women it has increased significantly. Although sometimes assumed, a transition from heterosexual to bisexual forms of intercourse has only been observed in a very few cases; only 3.6% of men

**Table XIV.** Homosexual Behavior: Various Indicators

	Males, 1966 (N = 2,835)	Males, 1981 (N = 1,106)	Females, 1966 (N = 831)	Females, 1981 (N = 816)
Accumulative incidence				
18 years	18%	21% <sup>a</sup>	3%	13% <sup>a</sup>
Now	20%	25% <sup>a</sup>	5%	18% <sup>a</sup>
Total number of partners, 4 or more	3%	6% <sup>a</sup>	1%	3% <sup>a</sup>
Active incidence, last 12 months	4%	5%	1%	4% <sup>a</sup>
Active incidence with orgasm, last 12 months	3%	4%	1%	3% <sup>a</sup>

<sup>a</sup>Differences between generations statistically significant (at least 1% level), according to  $\chi^2$ .

and 3.3% of women had both homosexual and heterosexual experiences in the year prior to the survey in 1981; in 1966 the figures were 1.9% and 0.7%.

**Table XV.** Sexual Standards<sup>a</sup>: Extramarital Coitus, Masturbation, Homosexuality

	Males, 1966 (N = 2,835)	Males, 1981 (N = 1,106)	Females, 1966 (N = 831)	Females, 1981 (N = 816)
Extramarital coitus <sup>b</sup>				
Egalitarian, permissive	33%	80%	35%	87%
Egalitarian, restrictive	56%	16%	55%	10%
Double standard	9%	3%	8%	0%
No answer	2%	2%	2%	2%
Masturbation <sup>b</sup>				
Egalitarian, permissive	74%	97%	62%	97%
Egalitarian, restrictive	14%	1%	21%	2%
Double standard	6%	1%	8%	0%
No answer	5%	1%	9%	1%
Homosexuality <sup>c</sup>				
Permissive	75%	95%	75%	98%
Restrictive	21%	4%	20%	2%
No answer	4%	1%	5%	0%

<sup>a</sup>We did not investigate "premarital permissiveness" in 1981, assuming that an egalitarian-permissive attitude is universal; in 1966, already 80% of both male and female students accepted premarital coitus for both sexes.

<sup>b</sup>Egalitarian, permissive = equally accepted for men and women; egalitarian, restrictive = equally rejected for men and women; double standard = accepted for men, rejected for women.

<sup>c</sup>Permissive = homosexual relations for homosexuals accepted; restrictive = homosexual relations for homosexuals rejected.

### ATTITUDES TOWARD SEXUALITY

Attitudes toward sexuality of both sexes have become more permissive (Table XV). The changes are particularly pronounced as regards judgment of extramarital sexual intercourse, which only a third accepted in principle in 1966, but more than 80% accepted in 1981. In 1981 masturbation was endorsed by an even greater majority of 97% whereas in 1966 the figures were distinctly lower (74% of the men and 62% of the women). There are comparable tendencies in judgments on homosexuality; in 1981, 95% (men) and 98% (women) approve of homosexual relationships; in 1966 the figure was 75% for both sexes.

In 1966 double standards, i.e., different judgments of male and female sexual activity, were clearly a minority position (less than 10%). They were practically nonexistent in 1981 (Table XV). Sex differences in attitudes in 1981 were, as in 1966, practically nonexistent. There is currently a tendency for women to be more permissive than men (see Table XVI).

**Table XVI.** Gender as Predictor: Sexual Behavior and Attitudes

Indicator	Phi coefficient <sup>a</sup>	
	1966	1981
Early masturbation experience <sup>b</sup>	.47 <sup>c</sup>	.26 <sup>c</sup>
Active incidence of masturbation (previous 12 months)	.34 <sup>c</sup>	.20 <sup>c</sup>
High active frequency of masturbation (previous 12 months)	.13 <sup>c</sup>	.25 <sup>c</sup>
Early coitus experience <sup>b</sup>	.10 <sup>c</sup>	-.15 <sup>c</sup>
Active incidence of coitus (previous 12 months)	.07 <sup>c</sup>	-.06 <sup>e</sup>
High active frequency of coitus (previous 12 months) <sup>d</sup>	.03	.03
Homosexual experience (up to time of investigation)	.14 <sup>c</sup>	.08 <sup>c</sup>
Liberal sexual attitudes <sup>f</sup>	.02	-.06 <sup>e</sup>

<sup>a</sup>Negative coefficients, more typical for females; positive coefficients, more typical for males.

<sup>b</sup>18 years or younger.

<sup>c</sup> $p \leq 0.001$ .

<sup>d</sup>6 times/month or more.

<sup>e</sup> $p \leq 0.01$ .

<sup>f</sup>Dichotomized total score: extramarital coitus, masturbation, homosexuality.

## GENDER AS PREDICTOR

Table XVI shows correlations (phi-coefficients) between gender and various parameters of sexual behavior for both surveys. It enables us to summarize what we have said so far about changes in sex differences.

Masturbation experience and incidence are less in 1981 than in 1966 but still distinctly gender dependent; the frequency of masturbation (for those who masturbate) is, on the other hand, more gender dependent in 1981.

Coital behavior, both in 1966 and 1981, is considerably less gender dependent than masturbation. The gender differences have not decreased but have simply inverted. Women have their first coital experience earlier than men, and more female students than male students performed coitus in the period surveyed; in 1966 the opposite was true.

In general terms sex differences in sexual behavior are distinctly less pronounced in 1981 than in 1966, or they are more weighted on the female side. Six of the seven indicators of sexual behavior showing men to be more active than women in 1966 no longer indicate this or do so to a lesser extent. The lead taken by men in sexual activity has weakened or disappeared, with one exception — monthly frequency of masturbation.

## CONCLUSIONS

We shall comment on three aspects:

1. The liberalization process has influenced all the forms of sexuality surveyed, but particularly coital behavior (age at first coitus, coital incidence and frequency) and female masturbation experience and incidence. In two other areas we found less changes than are often expected. First, overt bisexual forms of behavior are extremely seldom in both studies. Second, the tendency to change partners has hardly changed, even if more male and female students in 1981 do engage in sexual relations outside their steady relationship. Just as in 1966, students in 1981 prefer and engage in more long-term relationships with emotional ties, which, however, do not as frequently end in the formal act of engagement or lead to the intention to marry in the near future. Generally, sexual behavior has become less and less institutionalized and has uncoupled itself from the institution of marriage. Married and unmarried students scarcely differ nowadays in their coital and masturbation behavior; marital status no longer has any marked influence on these aspects of sexuality.

2. All available studies on sexual behavior show that coitus takes place at a younger age for men than for women in all social classes and in all

Western industrialized societies.<sup>7</sup> Sexual liberalization has obviously resulted in a change in this situation with which sex research is so acquainted. This change by no means indicates that the adolescent sexuality of girls is more emancipated than that of boys. It is more likely that the changes are due to the choice of premarital sex partners following the middle class courtship pattern after the dying out of the double standard. Typical for this courtship pattern is that two partners choose each other, feel affection and love for one another, and the man is older. This age difference is reflected in the accumulative incidence for coitus. This courtship pattern now determines the sexuality of adolescents more than the double standard, the virginity ideology, specific sanctions for women or a "divided market" (for men) as regards the choice of a premarital partner, on the one hand, or marital partner, on the other.

3. Of fundamental importance in the general discussion on sex differences in sexuality is masturbation behavior. Despite convergence in many parameters, masturbation is still the most gender dependent form of sexuality. There is no doubt, however that men and women overlap to a great extent. For example, in the 1981 sample 23% of women masturbated more frequently than the average man (in 1966 it was 19%).<sup>8</sup> But, as in all empirical studies to date, there is not one group, defined by sociodemographic characteristics (e.g., age, social class, church attendance, etc.) in which women masturbate as frequently or more frequently than men. One can assume that the sex differences seen here have, in part, been considerably weakened by sexual liberalization (were or are, thus, sociologically caused) but have by no means disappeared when sexual taboos specific to one sex cease to exist.

At present we can only offer a few speculative interpretations. We do not believe that these differences can be explained by such ostensible concepts as a difference between men and women in the intensity of their sexual desire, differing masturbatory guilt, a weaker tendency for women to engage in "partner-free," self-initiated sexuality, or differences in access to and anatomy of the genitals (and the corresponding ease men have in learning to masturbate). What we do find important is to think along the following hypothetical lines: Men (in our societies) functionalize sexuality far more than women for other than sexual needs, or, in other words, they tend to sexualize nonsexual tensions and conflicts more than women. For one thing, they use the experience of potency in sexual activity or in sexual

<sup>7</sup>The sole exception is the study by Schoof-Tams *et al.* (1976) of West German teenagers, in which an inversion of this sex difference is reported for the first time.

<sup>8</sup>Average was defined as the median of the masturbation frequency in the entire sample, i.e., including students abstaining from masturbation.

fantasies (which men employ more often than women when masturbating) as an important narcissistic source of their masculinity and male identity. The other point is that men are more emotionally constrained than women, they control and block off their effects more; sexuality is one of the less conforming and admissible forms of emotional expression. Consequently, men have to rely more on sexualized release of tensions and frustrations than women, whose vocabulary for expressing emotions is far richer.

## REFERENCES

- Barrett, F. M. (1980). Sexual experience, birth control usage, and sex education of unmarried Canadian university students: Changes between 1968 and 1978. *Arch. Sex. Behav.* 9: 367-389.
- Bauman, K. E., and Wilson, R. R. (1976). Premarital sexual attitudes of unmarried university students: 1968 vs. 1972. *Arch. Sex. Behav.* 5: 29-37.
- Bell, R. R., and Chaskes, J. B. (1970). Premarital sexual experience among coeds, 1958 and 1968. *J. Marriage Family* 32: 81-84.
- Bell, R. R., and Coughney, K. (1980). Premarital sexual experience among college females 1958, 1968, and 1978. *Fam. Relat.* 29: 353-357.
- Christensen, H. T., and Gregg, C. F. (1970). Changing sex norms in America and Scandinavia. *J. Marriage Family* 32: 616-627.
- Giese, H., and Schmidt, G. (1968). *Studenten Sexualität. Verhalten und Einstellung*. Rowohlt, Reinbek, West Germany.
- King, K., Balswick, J. O., and Robinson, I. E. (1977). The continuing premarital sexual revolution among college females. *J. Marriage Family* 39: 455-459.
- Robinson, I. E., and Jedlicka, D. (1982). Change in sexual attitudes and behavior of college students from 1965 to 1980: A research note. *J. Marriage Family* 44: 237-240.
- Robinson, I. E., King, K., and Balswick, J. O. (1972). The premarital sexual revolution among college students. *Family Coordin.* 21: 189-195.
- Schmidt, G., and Sigusch, V. (1971). *Arbeiter-Sexualität. Eine empirische Untersuchung an jungen Industriearbeitern*. Luchterhand, Neuwied/Berlin, West Germany.
- Schmidt, G., and Sigusch, V. (1972). Changes in sexual behavior among young males and females between 1960-1970. *Arch. Sex. Behav.* 2: 27-45.
- Schoof-Tams, K., Schlaegel, J., and Walczak, L. (1976). Differentiation of sexual morality between 11 and 16 years. *Arch. Sex. Behav.* 5: 353-370.
- Shorter, E. (1975). *The Making of the Modern Family*. Basic Books, New York.
- Sigusch, V., and Schmidt, G. (1971). Lower-class sexuality: Some emotional and social aspects in West German males and females. *Arch. Sex. Behav.* 1: 29-44.
- Sigusch, V., and Schmidt, G. (1973a). *Jugendsexualität. Dokumentation einer Untersuchung*. Enke, Stuttgart, West Germany.
- Sigusch, V., and Schmidt, G. (1973b). Teenage boys and girls in West Germany. *J. Sex Res.* 9: 107-123.