

# **AIDS**

## **Sexual Behavior and Intravenous Drug use**

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# Sexual Behavior And Aids

It is now widely recognized that controlling the spread of the AIDS epidemic will require a national effort to persuade a sizable fraction of the population to modify their sexual behavior. The effort will be most crucial for those individuals who are now sexually active with multiple partners (concurrently or serially) and for young persons who will become sexually active in future years. This urgent need, in turn, has generated a renewed awareness of the lack of an adequate scientific understanding of human sexual behavior (including its emergence and development) and the necessity for rigorous programs of basic research in this field. In this chapter, we describe what is currently known about (past and present) human sexual behavior and the types of data collection efforts needed to provide basic information from which to fashion the kind of understanding that is now required.

### STATUS OF THE RESEARCH FIELD

In the United States, research on human sexual behavior has always been a high-risk undertaking in which there has been little public investment. Earlier in this century, the paucity of scientific research on human sexual behavior led to an effort at the National Research Council (NRC) to organize and promote such research. In 1922, with the support of the Rockefeller Foundation, the NRC established the Committee for Research in Problems of Sex, which played a major role in identifying and supporting fundamental research on sexual behavior. Until it was disbanded in 1963, the committee provided research grants and in some cases made arrangements for

direct funding by the Rockefeller Foundation for efforts ranging from studies of hormones and the biology of sex to the pioneering social research of Albert Kinsey and his collaborators (Aberle and Corner, 1953).

Despite the committee's efforts, however, the AIDS epidemic has highlighted the gaps in scientific knowledge about the sexual behavior of contemporary Americans. These gaps compromise practical attempts to cope with the AIDS epidemic and handicap efforts by health scientists to predict its future course. For example, as noted in [Chapter 1](#), estimates of the number of persons infected with HIV (Public Health Service, 1986; CDC, 1987) have used Kinsey and colleagues' (1948) data to estimate the number of men in the United States who have sex with men. As [Chapter 1](#) also noted, however, Kinsey's data have been widely regarded as unreliable for use in making such estimates because they were not collected by probability sampling and because they pertain to the population of 1938-1948.

Similarly, promising mathematical models of the dynamics of the spread of HIV infection require data on a wide range of sexual behaviors; these data currently are not available. For example, the distribution of the number of sexual contacts (both current and new partners) among individuals in a population has been shown to be important to the spread of the virus (May and Anderson, 1987). The number of contacts is a key determinant of the "reproductive rate" ( $R_0$ ) of the epidemic, which is defined as the average number of new cases of infection generated by a single infected individual. There are currently no reliable data on sexual contacts for the national population; there are also no such data for groups with elevated risks of transmitting or contracting HIV infection (e.g., men who have sex with men, IV drug users, heterosexuals with many sexual partners). Indeed, there is no reliable information on the size of the nonmonogamous heterosexual population. The lack of such data makes predictions about the future spread of AIDS extremely uncertain.

These examples illustrate but two of a large number of crucial needs for reliable data on human sexual behavior. AIDS and HIV-related concerns present the most pressing needs for better data; yet over the longer term, we anticipate that the outcomes of such research will find application in many areas besides AIDS—for instance, in population studies and in the treatment of sexual dysfunction.

In this chapter, we review the types of data on human sexual behavior that will be needed to understand and predict the course of

the epidemic and to design effective interventions to bring about the behavioral changes required to control the epidemic. We also describe the available data on sexual behavior in the United States, including trends in adolescent and adult sexual behavior, same-gender sex, and prostitution; the methodological and other problems that need to be overcome to obtain more reliable and valid data about relevant aspects of sexual behavior in the United States; and the role of anthropological techniques in this effort. Finally, we present a series of recommendations intended to improve understanding of the sexual behaviors that spread HIV infection.

### **NEEDED DATA**

Two classes of data are urgently needed in the confrontation with AIDS/HIV. One class of data is required to understand the dynamics of HIV transmission that sustain the epidemic so as to predict the epidemic's future course. This class includes a mix of biological and social data. Although there may be differences of opinion on detail, there is widespread agreement on the common core of basic information needed for these purposes.

Another class of data is needed to control the epidemic's spread by reducing the frequency of behaviors that are likely to transmit the virus. This class is not as well defined as the first class of data because the task calls for a fundamental understanding of the factors that explain the development and expression of human sexuality (including its variety, social malleability, and other aspects).

#### **Data Needed To Understand The Epidemic's Future Course**

Understanding the future course of the HIV/AIDS epidemic requires—both at present and at regular intervals in future years—a variety of data on sexual behavior. Purely statistical extrapolations of current trends, such as those used by CDC (Public Health Service, 1986), can provide useful short-term predictions of the number of AIDS cases in the future, and they do not require a model of the underlying dynamics of disease transmission. For long-term predictions, however, it is necessary to understand the underlying dynamics of transmission within particular risk groups (see, e.g., May and Anderson, 1987). Such understanding in turn requires more extensive knowledge of three key elements of HIV transmission.

First, it is necessary to know the probability that an infected individual will transmit the infection to a partner (including male-to-male, male-to-female, female-to-male, or female-to-female transmission through sexual acts or by needle-sharing). The transmission probabilities in these instances depend on the kind of contact in question and the duration of the partnership, as well as on a variety of other factors. Transmission probabilities are not well understood at present; they are probably most uncertain for heterosexual transmission.

Second, data are needed on the rates of acquiring new sexual partners (or needle-sharing partners) among specific groups. Such data include not only the average number of new sexual partners acquired each year but the variation in this number as well. Persons who acquire new partners at a high rate play a disproportionate role in the transmission of infection, as they are both more likely to acquire and more likely to transmit infection. Thus, in both an epidemiological and a mathematical sense, sexual contacts (or needle-sharing contacts) in a group cannot accurately be characterized by "average" individuals or "average" behavior. Data are also needed on the relative frequency of behaviors that have markedly different likelihoods of transmitting infection (e.g., anal, vaginal, or oral sex). Similarly, information is needed about the extent to which awareness of HIV/AIDS transmission has altered behavior (particularly with respect to the use of condoms and spermicides) in ways that may reduce transmission.

Third, it is essential to know some key facts about the natural history of HIV infection, an area of knowledge in which, currently, uncertainties abound. There is considerable variation in the time that elapses between a person's acquiring HIV infection and the appearance of full-blown AIDS. The current best estimate is that the mean incubation period is 8 years, but as data spanning more time become available, it seems likely that this estimate will increase.<sup>1</sup> There is also uncertainty about the time-course of infectiousness. Evidence is now accumulating that suggests that infectiousness varies over the course of the disease. It appears that it may be elevated in the early phase of HIV infection and again at the onset of AIDS itself (as the immune system collapses) but that it may remain relatively

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<sup>1</sup> The current estimate is that the majority of HIV-seropositive individuals will go on to develop AIDS, and it is not impossible that 100 percent of seropositive individuals may eventually develop full-blown AIDS (IOM/NAS, 1988:35-36). See also the projections of Lui and colleagues (1988).

low at other times (e.g., IOM/NAS, 1988:38; Anderson and May, 1988:Figure 1).

The basic reproductive rate ( $R_0$ ) of an infection within a particular population determines whether the infection has the potential to generate an epidemic in that population. The reproductive rate is essentially the number of new cases of infection produced, on average, by each infected individual in the early stages of the epidemic, when essentially all contacts are themselves not infected. So, for example, if  $R_0$  is less than 1.0 for heterosexual transmission of HIV in the United States, on average, each case of HIV infection will produce fewer than one subsequent case, and the process will not be self-sustaining. There will be some chains of HIV transmission in which men will infect women who will then infect men and so on, but they will be few and short. If  $R_0$  is larger than 1.0, however, such chains will be more numerous and longer, and a "chain reaction," or epidemic, will be generated. The larger the value of  $R_0$ , the shorter the time it takes for the number of cases of infection to double.

It is clear that  $R_0$  exceeded 1.0 among gay men in large U.S. cities in the late 1970s and early 1980s and that it exceeds 1.0 today among IV drug users who share needles. It is also clear that  $R_0$  exceeds 1.0 among the heterosexual populations of many parts of Africa. At present, it is unknown whether  $R_0$  is large enough (greater than 1.0) to engender a self-sustaining epidemic with purely heterosexual chains of transmission in the United States.

The basic reproductive rate for a defined risk group depends on the three factors discussed earlier: the transmission probability, contact rates, and duration of infectiousness in that group. In the early stages of an epidemic,  $R_0$  can be estimated by multiplying the values of these three factors: the probability that infection will be transmitted to any one new contact (sexual or needle-sharing partner), the average number of new contacts each year, and the number of years over which the infected individual remains infectious. It should be noted that the reproductive rate for HIV infection combines the fundamental biology of the virus (which determines the incubation interval, for example) with behavioral factors (e.g., rates of acquiring new sexual partners, whether condoms are used, and so forth). Thus,  $R_0$  can differ from one risk group to another and can change over time in response to behavioral changes.

If  $R_0$  for heterosexually transmitted HIV in the United States is less than 1.0, no "second-wave" epidemic, spread purely by heterosexual contact, is possible. Moreover, even if  $R_0$  does exceed 1.0 in the heterosexual population, the doubling time for the second-wave

epidemic may bear little relation to that of the "first wave," which spread mainly among gay men and IV drug users. Furthermore, if the doubling time of this second, heterosexual wave is much longer than that of the first wave—for example, 5-10 years or more—the resulting patterns of spread among heterosexuals may go unnoticed against the much larger background of cases among homosexuals and IV drug users.

### **Data Needed To Understand The Epidemic's Dynamics**

Estimating future demands on hospitals and other public health services requires reliable models of HIV transmission dynamics. Such epidemiological models, in conjunction with knowledge of the underlying biological and behavioral variables, can also help in assessing the relative effectiveness of different kinds of behavioral change and guiding the development of effective public health education.<sup>2</sup>

Data needs are driven by immediately relevant questions of disease transmission, progress, and control. The resulting intellectual strategy is to design new research looking for the "facts about sex" in order to answer those questions. Such facts, particularly when reliably collected and combined with a sensitive understanding of the cultural boundaries between social groups, may be of considerable use in the medical and social management of the HIV/AIDS epidemic. Yet the committee would point out that there are risks in a strategy of proceeding from an interest in disease to research on the "facts" of sexual conduct. These risks involve the possibility that concerns about disease will reinforce the tradition of treating some aspects of sexual conduct as social or medical "problems."

To understand the motives, development, and varieties of human sexual behavior, it is crucial to understand the systems of meaning and action—the cultural context—in which the "facts of sex" are embedded. The facts remain the same, but understanding may differ. Different understandings in turn may have important consequences for designing effective educational efforts to encourage self-protective behaviors.

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<sup>2</sup> Efforts to reduce risky behavior in individuals often do not require detailed knowledge of the transmission dynamics of the epidemic. Nevertheless, efforts directed toward accessible individuals can go hand in hand with broader, population-level studies of the relative effectiveness of different broad categories of public education. Individual counseling and activities to reduce risky behavior in particular groups that are accessible to AIDS prevention efforts are not alternatives to mathematical modeling, given that such modeling may lead to the development of intervention strategies that make maximal use of scarce resources.

In the following sections of this chapter, we review available data (largely collected prior to the onset of the AIDS epidemic) on sexual behavior in the United States. The history of research on human sexuality, at least in the United States, can be divided somewhat crudely into the pre-Kinsey and post-Kinsey eras. Despite the fact that Kinsey himself cited a number of questionnaire and interview surveys of sexual behavior conducted in a variety of countries as early as the first decade of the twentieth century (Kinsey et al., 1948, 1953), it was the publication of the two "Kinsey reports"—*Sexual Behavior in the Human Male* (1948) and *Sexual Behavior in the Human Female* (1953)—that dramatically shifted the study of human sexuality away from its predominantly clinical and psychopathological concerns. In doing so, Kinsey and his coworkers responded to the call of Havelock Ellis in the 1920s, who proposed that sex researchers expand their interests beyond the asylum, the prison, and the clinic to study "fairly normal people" (Gagnon, 1975). In the attempt to accomplish this task, no matter how provisionally, the Kinsey studies helped to change the way in which sexuality was approached in American society: first, by establishing sexuality as a legitimate object of scientific inquiry; second, by offering a blurred but still discernible "snapshot" of what some people were doing sexually; and third, by offering a different definition of what was thought to be *normal* sexuality.

### THE KINSEY STUDIES

It is not easy for those who have grown up in the 1960s and later to understand the extraordinary impact of the Kinsey studies in a society in which ignorance about sexuality was pervasive. Even those who were already adults when Kinsey's work first came to the nation's attention probably find that their memories of that world have been corroded by time and the deluge of sexual materials and references that have characterized the past three decades. The Kinsey studies engendered extensive, if not always thoughtful, discussions of sexuality in a society in which public talk about sex had been restricted to the vulgar, the moralistic, or the psychoanalytic. After their publication, words such as masturbation, homosexuality, orgasm, vagina, extramarital sex, clitoris, and penis could be spoken of in more or less polite company (although not in the *New York Times* of the period). People knew (or thought they knew) that one man in three had had sex at least once with another man; one married woman in four had sex outside of marriage; and the average rate of

intercourse in marriage was between three and four times a week for couples in their 20s. The "facts" were out of the closet and seemed unlikely to be put back in. The vast outpouring of public discussion was based on what were two long and seemingly indigestible books, the first reporting approximately 3,000-5,000<sup>3</sup> face-to-face interviews with men, the second reporting 5,940 similar interviews with women.

### Quality Of The Kinsey Data

Because the Kinsey studies<sup>4</sup> are cited even today as a primary source of information on sexual behavior, it is valuable to review their design. To assess the quality of these data and their appropriateness for estimations of contemporary sexual behavior, it is important to examine two methodological aspects of the Kinsey studies: (1) the interview schedule, including its topical coverage, the interviewing procedures, and the interviewers; and (2) sampling—the method of gathering cases. These two aspects are discussed below; a third major aspect, the impact of the Kinsey studies on conceptions of sexual normality, is discussed later in the chapter.

### The Interviews

The greatest strengths of the Kinsey studies were probably their coverage of a wide variety of sexual topics and the quality of the interviewing. The theories that informed the interview were quite general; they primarily reflected Kinsey's prior training as a taxonomist who had made his reputation in the ecological and evolutionary study of the gall wasp. Kinsey was fundamentally interested in the behavioral events (as opposed to the attitudes, motives, or emotions) that composed an individual's sexual history, and he saw those events as expressions of the interaction between the universals

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<sup>3</sup> This range reflects the fact that different analyses reported in the first volume were done at different times and that during the intervals, additional cases accumulated. Gebhard and Johnson (1979:9) note: ". . . in those days we lacked computers and our card sorters were slow. A relatively simple table could easily take a full day or two of sorting—assuming the machine was available. Consequently, some tabulations were made a year or more before others and since our interviewing continued, our Ns varied. Thus, Table 62 in the *Male* volume [*Sexual Behavior in the Human Male*] shows 3,012 white males in our earliest age category (which should include all post-pubescents), yet in Table 63, the number is 3,925. Still later in Table 92 the N has risen to 4,625. This particular table was made in May 1947—one of the latest prepared."

<sup>4</sup> Additionally, the volumes *Pregnancy, Birth and Abortion* (Gebhard et al., 1958), *Sex Offenders: An Analysis of Types* (Gebhard et al., 1965), and *The Kinsey Data: Marginal Tabulations of 1938-1963 Interviews Conducted by the Institute for Sex Research* (Gebhard and Johnson, 1979) contain important information about these studies.

of the mammalian heritage and the specifics of social learning in a cultural context. The interview thus embodied a general scientific perspective rather than a specific set of hypotheses to be tested.

The interview schedule consisted of a dozen topical areas that could be covered in approximately 300 questions (Gebhard and Johnson, 1979:13-14). Interviewers were not restricted to the specific framework of the schedule, however, as the goal was to obtain information in an area rather than to ask precisely worded questions. The interviewers memorized the schedule, changed wording to conform with usage by the interviewee, and recorded only coded responses (to maintain confidentiality). The schedule was designed by Kinsey in the late 1930s and was consolidated by the early 1940s. Its continuing use had the benefit of maintaining comparability in data that were collected over nearly 25 years, although at some cost to the ability to learn from mistakes or adapt to new knowledge.

Kinsey wanted the social interaction involved in the interview process to be businesslike and nonjudgmental. Nothing was to be disapproved of or found shocking by the interviewers. Interviews were most often conducted outside the home, in institutional or commercial settings in which appointments could be made and anonymity preserved.

Almost every possible sexual topic was included: people were routinely asked about masturbation, nocturnal orgasm, intercourse (in all its variations), homosexual contacts, animal contacts, and sexual fantasies. Respondents were asked in considerable detail about the ages at which they engaged in these behaviors, frequencies, techniques, partners (when appropriate), and rates of orgasm. Those individuals with extensive histories of homosexuality, prostitution, sex offenses, sadomasochism, and the like were queried still further. Few studies conducted since that time have been as sharply focused on sexual behavior or so exclusively interested in sexual conduct for its own sake. More recent studies of sexual behavior have often asked only a few questions about sexuality, usually in the context of another inquiry that was defined by some social problem (e.g., adolescent pregnancy).

There are significant differences between the Kinsey interview and the interviews that characterize most modern surveys. Current surveys that use face-to-face data gathering usually have fixed interview schedules; interviewers are required to conform to the precise wording and order of questions printed on the survey questionnaire. In addition, a changing technology of data gathering has produced other variations:

- survey interviewers are most often women, many interviewers are involved in each survey, and interviews are often done in the subject's home;
- most surveys—even studies that have some relation to sexuality (e.g. studies of reproduction and fertility)—do not focus entirely on sexual matters but instead ask such questions infrequently and usually as modest additions; and
- in many cases, interviews are conducted by telephone.

## Sampling

It has long been recognized that one of the greatest faults of the Kinsey research was the way in which the cases were selected: the sample is not representative of the entire U.S. population or of any definable group in the population. This fault limits the comparability and appropriateness of the Kinsey data as a basis for calculating the prevalence of any form of sexual conduct.

The population segment best represented by the Kinsey interviews can be described as a "chunk" of the white, youthful, college-educated U.S. population whose adolescence and young adulthood were lived during the late 1920s, the Great Depression, and World War II. Of those interviewed, 96 percent were white, and their median age was 24;<sup>5</sup> moreover, 68 percent of those interviewed were 30 years of age and younger—and were thus able to offer evidence on only the first quarter of adult sexual life. Some respondents were specifically chosen because they were delinquents, criminals, or sex offenders;

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<sup>5</sup> This and subsequent characterizations of the Kinsey cases are taken from Gebhard and Johnson (1979:47-51, Tables 1-3). This particular description refers to Kinsey cases interviewed at any time from 1938 to 1963. (Table 2-I shows the number of cases collected during different periods.) Gebhard and Johnson's (1979) tabulations are restricted to what they call Kinsey's "basic sample," which they define as including "postpubertal individuals who were never convicted of any offense other than traffic violations and who did not come from any sources which we knew to be biased in terms of sexual behavior" (p. 41). This basic sample included 177 black men, 223 black women, 4,694 white men, and 4,358 white women, all of whom had attended college for at least one year. The basic sample also included 766 white men and 1,028 white women who had not attended college.

Kinsey's basic sample does not include cases identified by Gebhard and Johnson as (1) homosexual (defined as "postpubertal individuals who had at least 50 homosexual contacts or who had at least 20 sexual partners of the same gender as the individual" [p. 43]); (2) delinquents (defined as "postpubertal individuals who have been convicted of a felony or misdemeanor other than a traffic violation" [p. 45]); and (3) "special groups," which are described as "simply residual categories of individuals who cannot be assigned elsewhere because of some sample bias or because of some other special characteristic" (p. 45). This last "residual" group included 380 prepubertal and 999 postpubertal males, and 156 prepubertal and 717 postpubertal females.

most of the remainder were, in the tradition of most sex research, college educated. About 84 percent of the men and women interviewed had some college education, and 45 percent were in college at the time of the interview. Perhaps most striking is that 25 percent of the college-educated women had been to graduate or professional school, as had 47 percent of the college-educated men. About one half of the female sample was interviewed during World War II, and many others were interviewed shortly afterward (see [Table 2-1](#)).

TABLE 2-1 Year of Interview by Gender for Persons Interviewed Using the Original Kinsey Interview Schedule

Year	Males		Females	
	Number	Percentage	Number	Percentage
Prewar, 1938-1941	1,910	19.5	436	5.6
Wartime, 1942-1945	3,353	34.3	3,740	48.4
Postwar, 1946-1952	2,907	29.7	3,413	44.2
Early 1950s 1953-1956	1,461	14.9	58	0.8
Post-Kinsey, 1957-1963	146	1.5	78	1.0
Total	9,777		7,725	

SOURCE: Gebhard and Johnson (1979).

Perhaps more important than the composition of the sample were the methods by which the cases were collected. Both the difficulties of sampling on a sensitive topic and Kinsey's confidence that the sheer force of accumulated cases<sup>6</sup> would eventually translate into representativeness severely compromised the usefulness of the data for making estimates of prevalence that could be generalized to any larger group or to the overall population.

Kinsey gathered cases in a variety of ways. Many respondents were interviewed as the result of gaining access to a group through a contact person: for example, a faculty member sympathetic to Kinsey's goals might allow him to speak to a class to recruit students, or a prison administrator would offer access to an inmate population.

<sup>6</sup> Kinsey hoped to gather 100,000 interviews to complete his research (see the dedication to the 1948 volume); some 17,000 had been completed by the time of his death.

In other cases, lectures to less organized groups such as PTAs were used as occasions to ask for volunteers. These two types of groups became what Kinsey later described as "100 percent groups"—that is, groups in which he estimated that he interviewed all (or almost all) of those exposed to his request for cooperation. In these "sample" groups, Kinsey believed that he was solving some of the problems of sampling, particularly those of volunteer bias. Yet neither the contact persons nor the groups to which they offered access were sampled from some larger list; consequently, the final sample could never, in principle, have been a probability sample. In addition, many of the cases were friends of friends who were recruited through networks of referrals.

It is difficult even to begin to consider how these cases could be added together or "corrected" to make what at best could only be marginally satisfactory population estimates. This point is made most trenchantly in the major statistical review of the Kinsey research (Cochran et al., 1953).

### Utility Of The Kinsey Data

Despite their limitations, the Kinsey data published in 1948 and 1953 (based largely on those individuals in the sample who grew up in the 1920s and 1930s)<sup>7</sup> remain the most widely known and referenced data on American sexual behavior. Portions of the studies have been used as historical benchmarks for the estimation of sexual change over the last half century (e.g., the rates of premarital and marital sexual conduct). Other results, particularly those relating to the prevalence of extramarital intercourse, masturbation, intercourse with female prostitutes, and homosexual conduct by men and women, are sometimes cited as if they applied to the contemporary U.S. population. *Given the inadequate samples on which the estimates are based, the committee believes these uses are inappropriate even for the periods in which the data were gathered.*

It is also likely that the quality of the data varies across various sexual topics and measures. One might expect common forms of conduct (e.g., masturbation and heterosexuality before and within marriage) to be reasonably well reported. However, information on conduct that is relatively rare (e.g., homosexuality, intercourse

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<sup>7</sup> The apparent discrepancy in the times of "growing up" cited here (1920-1930) and those cited earlier (1920-World War II) reflects the different periods during which data were gathered. The earlier characterization referred to the entire body of Kinsey data, which was gathered between 1938 and 1963.

outside of marriage, contact with prostitutes, and bisexuality) is quite sensitive and more likely to be misreported. Yet these are the very forms of sexual conduct that are pertinent to an understanding of the spread of HIV/AIDS. There is a tendency to use Kinsey (and other) inadequate numbers in the absence of good data, but in so doing, there is a serious risk of making wrong predictions and creating the illusion that more is known about sexual behavior than is in fact the case.

Another problem with the Kinsey data is a result of focus rather than method. Kinsey was most interested in the frequency of various sexual activities, expressed primarily in terms of orgasm. His work was based on a concept of differential "energy" (including sexual energy) of the individual organism, which led to a concern with these measures. A more social model of sexuality would focus on sexual partners and networks of sexual partnering, as it is likely that types and numbers of partners actually shape frequencies of conduct and the specific sexual practices performed. A partner-driven model of sexuality might also satisfy more adequately the needs of epidemiology in relation to the transmission of HIV.

### **Kinsey And The Issue Of Sexual Normality**

The public uproar that greeted the publication of the Kinsey reports was a signal that something more than a scientific event had occurred. Kinsey was violently assailed by representatives of religious groups, conservative congressmen, and some social research methodologists. He and his work were caricatured in the press. Some people have claimed that the ferocity of this attack may well have shortened Kinsey's life (W. B. Pomeroy, 1972:381). Given Kinsey's dual claims—that sexuality could and should be the object of detached scientific inquiry and that sexual normality rested ultimately on the mandates of the mammalian origins of the human species—this attack might have been expected.

Indeed, there is evidence that some conflict was foreseen. In setting forth arguments for the legitimacy of sex research, Alan Gregg of the Rockefeller Foundation argued in the preface to *Sexual Behavior in the Human Male* (Kinsey et al, 1948) that

[c]ertainly no aspect of human biology in our current civilization stands in more need of scientific knowledge and courageous humility than that of sex. As long as sex is dealt with in the current confusion of ignorance and sophistication, denial and indulgence, suppression and stimulation, punishment and exploitation, secrecy and display, it will be associated with a duplicity and

indecent that lead neither to intellectual honesty nor human dignity.

This was no neutral claim but an assertion of the legitimacy of objective, detached, dispassionate inquiry as against the indecent and dishonest social arrangements that were then current. Moreover, these were and are "fighting words" because they stake out a large area of human conduct for scientific inquiry and judgment. The very claim for the legitimacy of science in the area of sexuality was an attempt to change the "rules of the game" that defined what conduct was normal and what was abnormal.

Kinsey went even further, however. He attempted to counter the traditional religious view that sexual virtue was entirely composed of heterosexual activity in the pursuit of reproduction inside the bonds of marriage, as well as the orthodox psychoanalytic revision of this traditional view, which admitted the existence of other forms of sexual expression but treated them as either perversions from or preludes to the sexual "normality" found in mature heterosexual committed relationships. Kinsey's counter to these views was to take a strong biological line that emphasized the evolutionary history of the species rather than the defective status of the individual. He argued that homosexuality, masturbation, and oral sex (to take the triad he most often discussed when dealing with these issues) were common activities in "the mammalian heritage" as well as among human groups in which sexual behavior was not culturally repressed. Hence, such activities represented the diversity of nature rather than perversions and deviations from biological or cultural standards for the sexually correct individual (Kinsey et al., 1948).

This extraordinarily original argument allowed Kinsey to bring what was thought to be unnatural behaviors under the umbrella of a broad, evolutionary perspective. Sexuality could thus be treated as part of a natural world that should not be limited by the artifices of culture.

The Kinsey research reflected an important moment in the history of science and society in the United States. It opened the door to further work and changed the way in which sexuality was talked about in this country. Yet for reasons of method and history, it cannot provide answers to the questions that have been raised by the AIDS crisis: it cannot replace carefully conducted, contemporary research.

### After The Kinsey Studies

The various social and cultural forces of the 1930s and 1940s that prompted the original Kinsey studies, and the example of those studies, did not produce a continuing tradition of sex research. Particularly lacking are contemporary studies of

- sexuality outside marriage,
- sexuality with persons of the same gender (homosexuality),
- sexuality with persons of both genders (bisexuality),
- sexual contacts for pay (female and male prostitution), and
- variations in sexual techniques across various types of sexual partnerings.

There is somewhat better information on heterosexuality among adolescents and young people (although these data are usually restricted to young women and to such topics as ages of initiation and rates of intercourse rather than partners and techniques) and coital rates in marriage. Both of these topics have been included in national surveys as well as in studies of more limited populations that cover a more extensive range of questions. In addition, since the publication of works by Masters and Johnson (1966), sexual dysfunction among married couples has received a great deal of attention, largely in clinical or experimental studies.<sup>8</sup>

The lack of a robust scientific tradition of research on sexuality has not, however, reduced the demand for and the supply of "facts" about sexuality. Research quackery abounds. "Surveys" have been conducted by journalists, women's and men's magazines, and enterprising professionals using invalid and unreliable questionnaires and collections of respondents whose population characteristics and response rates are unspecified. (Smith [in this volume] provides a review of one well-publicized report on sex in contemporary America [Hite, 1987].) Individually, such "reports" are transient sources of

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<sup>8</sup> Other research programs in sexuality of less immediate relevance to the committee's concerns have included studies of sexual offenders, sexual contacts between adults and children, sexually explicit materials (studies of both their availability and their effects), and sexual violence against women. Such studies are important in a number of ways, and they may merit careful review in future work. Studies of sexually explicit materials, for example, are important for measuring change in the sociosexual climate in the society. Studies of sexual abuse and violence will be critical elements in understanding some of the sources of sexual difficulties experienced by both children and adults. In addition, there has been a steady growth of research on sexual psychophysiology, particularly as it relates to sexual dysfunction.

fun, fantasy, and profit—a short flash in the media pan. Collectively, they may have a more negative character. They become part of the penumbra of nonfacts and fake knowledge that informs the media and the public. Indeed, in the absence of scientific data, numbers from some of these surveys have been cited in research, textbooks, or serious science journalism. To the degree that science has abandoned the task of sexual enlightenment, others have filled the gap.

## TRENDS IN HETEROSEXUAL BEHAVIOR IN ADOLESCENCE AND YOUNG ADULTHOOD

The extensive transformation of the role of sexuality in the lives of young people since the turn of the century has generated widespread social concern, especially since World War II. Kinsey found changes among young people during 1920-1945. His studies were followed by a surge of sociological interest in the premarital sexual conduct of young people as an element in changing courtship patterns (see reviews by Cannon and Long [1971] covering the 1960s and Clayton and Bokemeier [1980] covering the 1970s). Since the 1970s, research has been undertaken by both sociologists and demographers, motivated primarily by a concern for the rising rate of births among young unmarried women (e.g., Zelnik and Kantner, 1980; Hofferth et al., 1987). Although the data used in the various studies are not always strictly comparable, taken as a whole, they document impressively the increase in premarital sexual activity in the United States.

### Kinsey's Findings

Figure 2-1 shows the cumulative percentage of women reporting premarital sexual intercourse by their decade of birth. Among ever-married women<sup>9</sup> who were still not married by age 20, only 8 percent of those born before 1900 reported premarital intercourse; however, for women born during the first three decades of the twentieth century, 18, 23, and 21 percent reported premarital intercourse. Commenting on these results, Kinsey and his collaborators (1953:298) observed: "This increase in the incidence of pre-marital coitus, and the similar increase in the incidence of pre-marital petting, constitute the greatest changes which we have found between the patterns of sexual behavior in the older and younger generations of American

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<sup>9</sup> Ever-married women include those currently married and those who have been married at some point in their lives (e.g., widows, divorcées).

females." In contrast, they found much smaller changes in the reported prevalence of premarital intercourse among young men in this same period. Figures 2-2a and 2-2b show the cumulative percentages of men, by education, reporting premarital sexual intercourse.<sup>10</sup>

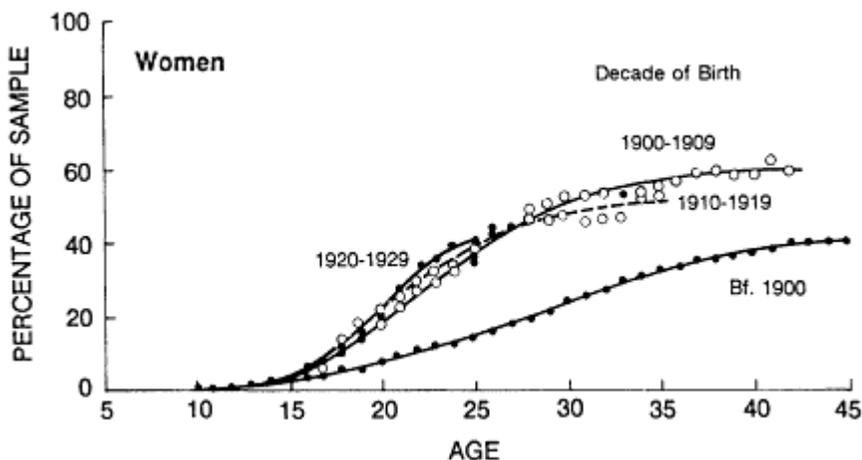
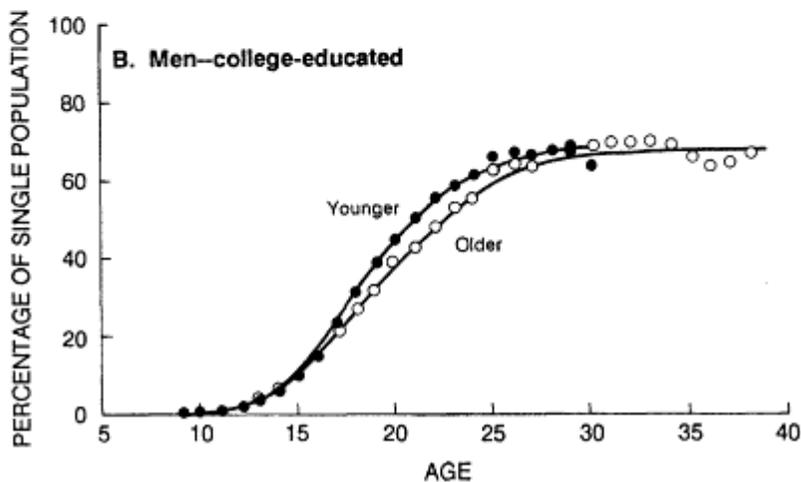
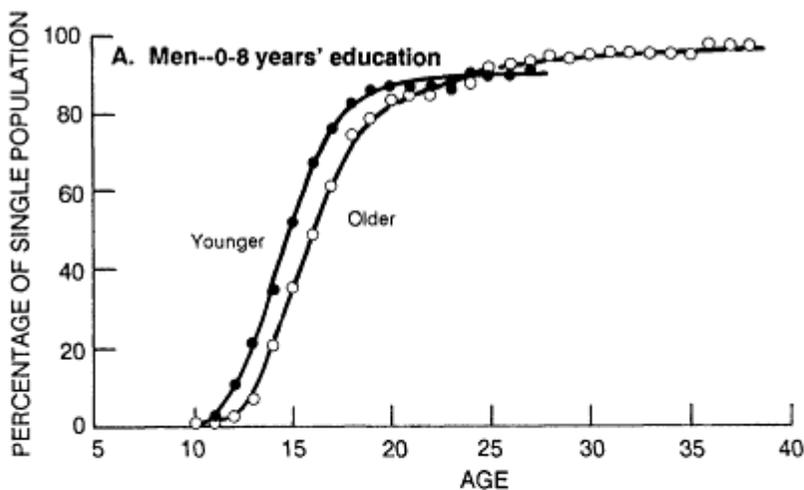


Figure 2-1 Cumulative percentage of women reporting premarital sexual intercourse by their decade of birth. Samples were restricted to ever-married women who had not married by the age shown in the figure. Source: Kinsey and colleagues (1953: Figure 50 and Table 83).

Kinsey reports more substantial changes in male frequency of sex with "companions" than in frequency of sex with prostitutes. The difference consisted mainly of a change in the frequency with which men reported having sex with prostitutes—not a change in the percentage of men who had at least one such experience. Complementing the finding that women born after 1900 were more likely than those born before 1900 to report premarital sex, men in the younger cohort reported greater frequencies of sex with companions and reduced frequencies of sex with prostitutes. These differences

<sup>10</sup> The figures for men and women are not strictly comparable because the men were split into two groups by age at the time of the interview and the women were grouped by year of birth. The older generation of men are those "who were 33 years of age or older at the time they contributed their histories" (Kinsey et al., 1948:395). The point of division of the men by birth year can very roughly be estimated as a birth year in the range 1906-1912. Because the interviewing stretched over several years, the two groups overlapped in birth dates. Gebhard and Johnson's (1979:32-35) history of the interviewing suggests that most of the interviews reported in Kinsey's 1948 volume were conducted from 1939 to 1945 or 1946. In the sample interviewed in 1939, those older than 33 were born in 1906 or before; men interviewed in 1945 were over 33 if they had been born in 1912 or earlier.

led Kinsey to the curious speculation that the "sexual outlet" formerly spent on prostitutes was now to be spent on companions: "The drives against prostitution have succeeded in diverting a third to a half of the intercourse that males used to have with prostitutes to



Figures 2-2a and 2-2b Cumulative percentages of men reporting premarital sexual intercourse by educational level. Note: In their text, Kinsey and colleagues imply that Figures 2-2a and 2-2b are based on a sample of men who were single at the time of the interview. This sample would be somewhat different from that used to construct the graph for women shown in [Figure 2-1](#). SOURCE: Kinsey and colleagues (1948: Figures 111 and 116).

pre-marital activities with other girls" (Kinsey et al., 1948:413). This image of male sexual energy waiting to be expended in one place or another is an important example of the a social character of Kinsey's basic sexual theory.

### Studies After Kinsey

The Kinsey studies were followed and extended by a number of social and behavioral researchers who investigated patterns of association, emotional intimacy, attitudes toward premarital sex, and premarital intercourse (e.g., I. Reiss, 1960, 1967; see also the reviews by Cannon and Long [1971], and Chilman [1978]). These researchers generally studied college students, although some managed to work with high school students or recruited "matched" samples of non-college students from the same geographical area (e.g., DeLamater and MacCorquodale, 1979). The early studies in the 1950s tended to focus on attitudes toward premarital sex; those in the 1960s shifted more specifically to the question of premarital sexual behaviors. This research was primarily driven by concerns about the changing role of sexuality in the (heterosexual) courtship patterns of young people. In contrast to Kinsey's wide-ranging inquiries, post-Kinsey investigators dealt rather delicately with heterosexual issues and not at all with other aspects of the sexual lives of young people.

The 1970 Kinsey Institute study also produced complementary findings for numbers of reported heterosexual partners. [Table 2-2<sup>11</sup>](#) shows the number of premarital heterosexual partners reported by gender and decade of birth for ever-married adults in the sample. This table clearly documents the trend over the century of a greater number of sexual relationships for adults prior to marriage. Moreover, the table shows that this trend, although evident to some extent for men, is much more dramatic for women.

Unfortunately, if one wishes to draw inferences about the frequency of particular sexual behaviors in the American population, both Kinsey's data and most later research are restricted either by lack of a sampling design or by sampling from a limited population (e.g., students at the University of Wisconsin in 1973). A number of these studies, however, provide suggestive results and test methodologies that are instructive for further research; estimates of the prevalence of premarital intercourse from selected studies are presented in [Appendix B](#). Although there is considerable variability

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<sup>11</sup> Adapted from Klassen and colleagues, [Table 1](#) (in this volume).