

Handedness in Homosexual and Heterosexual Men in the Kinsey Interview Data

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The relationship between sexual orientation and handedness in a large sample of men was examined. Subjects were 6544 nondelinquent men interviewed by the Kinsey Institute for Research in Sex, Gender, and Reproduction from 1938 to 1963. Subjects were classified as either homosexual (n = 1004) or heterosexual (n = 4579). Results failed to demonstrate a difference in handedness, with both groups having rates of non-right-handedness (i.e., 11–12%) approximately equal to establish norms. These findings do not replicate some recent studies indicating an increased level of non-right-handedness in homosexual men.

KEY WORDS: handedness; Kinsey; laterality; sexual orientation.

INTRODUCTION

One biological theory of sexual orientation emphasizes prenatal hormones and their impact on the organization of the hypothalamus and other structures of the brain (e.g., Ellis and Ames, 1987). A line of evidence comes from the identification of morphological and cognitive correlates of homosexuality, including handedness. Handedness has been investigated because it may be influenced by the same prenatal hormonal conditions (e.g., level of testosterone) hypothesized to affect sexual orientation (see Geschwind and Galaburda, 1987; McManus and Bryden, 1991).

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A number of studies have suggested that homosexual men may have an increased incidence of non-right-handedness (Becker *et al.*, 1992; Göttestam *et al.*, 1992; Lindesay, 1987; Hall and Kimura, 1994; Holtzen, 1994; McCormick and Witelson, 1991; see also Lansky *et al.*, 1988). For example, Göttestam *et al.* (1992) found an increased level of non-right-handedness in a sample of 394 homosexual men, and Becker *et al.* (1992) found a small but significant increase in adextrality in a sample of 1612 homosexual men.

Several studies, however, have not found a relationship between handedness and sexual orientation in men (Gladue and Bailey, 1995; Marchant-Haycox *et al.*, 1991; Rosenstein and Bigler, 1987; Satz *et al.*, 1991; Willmott and Brierley, 1984). Moreover, a number of these studies used large samples. For example, Satz *et al.* (1991) failed to find a heightened level of adextrality in a sample of nearly 1000 homosexual men.

One of the world's largest databases on human sexuality—the Kinsey Institute for Research in Sex, Gender, and Reproduction—also contains information on handedness and sexual orientation. The present study analyzed a sample of homosexual and heterosexual men from these data, as an additional test of the relationship between sexual orientation and handedness in men. The large degree of power afforded by this sample makes positive as well as negative results of interest.

METHOD

Probands

From 1938 to 1963, the Kinsey Institute for Sex Research recorded 17,502 case histories, using the interview schedule devised by Alfred C. Kinsey (Gebhard and Johnson, 1979). These data are currently stored in several files. The files containing white postpubertal males with no convictions for felonies or misdemeanors (other than traffic violations) comprise 6102 cases; a similar file for nonwhite males contains 442 cases. The combined sample, containing a total of 6544 cases, served as the database for the present investigation.

Demographics

The homosexual and heterosexual groups were assessed on a number of demographic variables, including age, year of birth, year of interview, education level, and parental socioeconomic status (SES). Parental SES refers to the financial status of the proband's parents when he was 14 to 17

years of age. It was coded on an 8-point scale from 1 (*extreme poverty*) to 8 (*extreme wealth*). Parental SES is preferred to proband's education as a measure of social class because many of the probands were still in school when interviewed and their current educational level would not reflect their ultimate education level.

Sexual Orientation

Sexual orientation was classified according to the following criteria. Individuals were classified as homosexual if they reported "extensive" homosexual experience, defined by Gebhard and Johnson (1979) as more than 20 male sexual partners or more than 50 homosexual experiences (with one or more partners). They were classified as heterosexual if they met two criteria: (i) they reported either "no" or "rare" homosexual experience, the latter defined by Gebhard and Johnson (1979) as 1 male sexual partner or 1-5 homosexual experiences, *and* (ii) they did not respond that they experienced "much" sexual arousal to questions inquiring about arousal from seeing and thinking of other males.

Using these rather stringent criteria, 961 cases could not be classified as either heterosexual or homosexual. Of the remaining 5583 cases, 1004 were classified as homosexual and 4579 were classified as heterosexual.

Handedness

Hand preference is often assessed with a number of unimanual (e.g., brushing teeth) and/or bimanual (e.g., threading a needle) items that the examinee mimes or responds to using self-report (e.g., Annett, 1970; Kimura, 1973). However, the Kinsey interviewers used a simpler classification system based on a question of "overall" hand preference (i.e., "Are you right- or left-handed?"; see Gebhard and Johnson, 1979; Kinsey Institute for Research in Sex, Gender, and Reproduction, 1985, 1991). Such simple classification systems correspond well to everyday usage, were widely used in the Kinsey era (e.g., Trankell, 1955; Zangwill, 1960), and correlate well with multiple-item assessments batteries (e.g., Bryden, 1977), but it should be noted that this method may result in a conservative estimate of adextrality (Bryden, 1982). Four responses were recorded: right-handed, left-handed, ambidextrous, and finally, right-handed, re-trained from left-handed.

Table I. Descriptive Statistics for the Homosexual and Heterosexual Groups ($N = 5583$)

| Variable | Group | | | | <i>t</i> | df | <i>p</i> ^a |
|-------------------|------------|------|--------------|------|---------------------|---------|-----------------------|
| | Homosexual | | Heterosexual | | | | |
| | \bar{X} | SD | \bar{X} | SD | | | |
| Age | 29.2 | 10.7 | 28.1 | 11.6 | 2.85 ^b | 1558.24 | < .01 |
| Grades completed | 13.8 | 4.0 | 15.3 | 3.6 | -10.94 ^b | 1378.28 | < .001 |
| Parental SES | 4.7 | 1.6 | 4.7 | 1.3 | -0.48 ^b | 1271.19 | ns |
| Year of birth | 1916.7 | 10.5 | 1916.8 | 10.4 | -0.23 | 5577 | ns |
| Year of interview | 1946.3 | 4.3 | 1945.3 | 4.2 | 7.23 | 5581 | < .001 |

^aTwo-tailed.^b*t* tests with separate variances estimates.**Table II.** Handedness of Homosexual and Heterosexual Groups ($N = 4443$)

| Handedness | Group | | | |
|----------------------------------|------------|------|--------------|------|
| | Homosexual | | Heterosexual | |
| | <i>n</i> | % | <i>n</i> | % |
| Right-handed | 744 | 88.3 | 3185 | 88.5 |
| Left-handed | 70 | 8.3 | 256 | 7.1 |
| Ambidextrous | 26 | 3.1 | 136 | 3.8 |
| Right-handed retrained from left | 3 | 0.4 | 23 | 0.6 |

RESULTS

Table I compares the homosexual and heterosexual groups on various demographic characteristics. As shown, the homosexual and heterosexual groups were closely similar in these characteristics, including parental SES. Note as well that even the statistically significant differences (e.g., age) are small.

Table II compares the homosexual and heterosexual groups on hand performance. A total of 843 homosexual and 3600 heterosexual men responded to information on handedness. Note that the level of adextrality is very similar in other groups. Approximately 11–12% of both the homosexual and heterosexual groups indicated a non-right-hand preference. These values are not significantly different ($\chi^2(3, N = 4443) = 3.2, ns$).

DISCUSSION

The present study analyzed a large sample of homosexual and heterosexual men to examine the relationship between sexual orientation and handedness. No relationship was found: Both the heterosexual and homosexual males had levels of adextrality around 11–12%, similar to what is typically found for the general male population (see Annett, 1985; Bryden, 1982; Gilbert and Wysocki, 1992; Lansky *et al.*, 1988). When the present study is added to previous ones on this topic, the cumulative data offer at best only weak support for an association between sexual orientation and handedness. By extension, they provide at best only weak support for Geschwind's theory of a prenatal hormonal linkage between the development of hand preference and sexual orientation (e.g., Geschwind and Galaburda, 1987).

If Geschwind's theory is correct (which, of course, it may not be), why are the data on handedness and sexual orientation in men inconsistent? A number of factors may be important (Zucker and Bradley, 1995). First, different researchers have operationalized handedness in different ways. Thus, it may be the case that those studies, including the present one, assessing non-right-handedness relatively conservatively and/or using single items (e.g., writing hand) less likely to find differences (but see Göttestam *et al.*, 1992). It is also of note, however, that the present data are not even suggestive of a trend in the predicted direction. Second, different studies have used different types of heterosexual comparison groups (e.g., population norms vs. concurrent controls). To our knowledge, however, the present investigation is the largest study to use concurrent controls, perhaps the best method to avoid possible confounds (e.g., SES). Interestingly, two of the three other large studies that used concurrent controls have not found differences between heterosexual and homosexual men (Gladue and Bailey, 1995; Marchant-Haycox *et al.*, 1991). Finally, recent power analyses suggest that the likelihood of finding a significant difference between heterosexual and homosexual men may be low even with large samples (Segalowitz *et al.*, 1994). It may not be surprising, then, that the extant data are equivocal. Perhaps a meta-analysis, which would effectively combine methodologically compatible samples, is worthwhile.

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