

Sex Differences in the Flexibility of Sexual Orientation: A Multidimensional Retrospective Assessment

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The flexibility of sexual orientation in men and women was examined by assessing self-reported change over time for three dimensions of sexual orientation (sexual fantasy, romantic attraction, and sexual behavior) across three categorical classifications of current sexual orientation (heterosexual, bisexual, and gay). The primary purpose of the study was to determine if there were sex differences in the flexibility (i.e., change over time) of sexual orientation and how such differences were manifested across different dimensions of orientation over the lifespan. Retrospective, life-long ratings of sexual orientation were made by 762 currently self-identified heterosexual, bisexual, and gay men and women, aged 36 to 60, via a self-report questionnaire. Cumulative change scores were derived for each of the three dimensions (fantasy, romantic attraction, and sexual behavior) of orientation by summing the differences between ratings over consecutive 5-year historical time periods (from age 16 to the present). Sex differences were observed for most, but not all, classification groups. There were significant sex differences in reported change in orientation over time for gays and heterosexuals, with women reporting greater change in orientation over time than did men. Bisexual men and women did not differ with respect to self-reported change in orientation.

KEY WORDS: sexual orientation; homosexuality; bisexuality; sex differences.

INTRODUCTION

A central question in the study of human sexuality concerns the stability of sexual orientation; that is, whether, and to what degree, sexual orientation changes or remains the same over time. Until recently, the prevailing scientific position has been that sexual orientation is an early-determined, stable trait that is highly resistant to change (e.g., Bell, Weinberg, & Hammersmith, 1981; Dörner, Rohde, Stahl, Krell, & Masius, 1975; Ellis & Ames, 1987; Haldeman, 1991; Harry, 1984; Money, 1987). The position that sexual orientation is stable across the lifespan is supported by findings from several areas of

research. These include (1) conversion therapy outcome studies which, with very few exceptions (e.g., Spitzer, 2003), document very low success rates in treatment efforts to alter sexual orientation (e.g., Haldeman, 1991, 1994); (2) research suggesting a developmental continuity between gender-atypical behavior in childhood and later adult homosexuality (Bailey & Zucker, 1995; Bell et al., 1981; Green, 1974, 1987); and (3) studies of the biological etiology of sexual orientation, an underlying assumption of which is that evidence of such a contribution to etiology implies a probabilistic relationship between the identified biological condition and sexual orientation outcome (e.g., Dörner, 1968; Dörner & Hintz, 1968; Meyer-Bahlburg et al., 1995; Money, Schwartz, & Lewis, 1984; Mustanski, Chivers, & Bailey, 2002; Ricketts, 1984).

The view that sexual orientation is fixed and unalterable has recently been challenged from a variety of theoretical perspectives, including labeling theory, lifespan development, social constructionism, and evolutionary psychology (e.g., Baumeister, 2000; D'Augelli,

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1994; Diamond & Savin-Williams, 2003; Kitzinger, 1987; Kitzinger & Wilkinson, 1995; Richardson, 1984). Theorists in these areas have suggested that sexual orientation is inherently flexible, evolving continuously over the lifespan. From this perspective, individuals may experience transitions in sexual orientation throughout their lives. Sexual orientation is viewed as continually evolving out of an individual's sexual and emotional experiences, social interactions, and the influence of the cultural context (Baumeister, 2000; Brown, 1995; D'Augelli, 1994; Diamond, 2003a, 2003b, 2003c; Diamond & Savin-Williams, 2000, 2003; Golden, 1994; Kitzinger, 1987; Paul, 1985; Richardson, 1987). Such influences may work together to maintain sexual orientation or may precipitate subtle or not-so-subtle shifts in orientation.

Such a conceptualization of sexual orientation is supported by findings from several research areas. These include (1) qualitative studies of individuals who have experienced transitions in sexual orientation after lengthy periods of homosexuality or heterosexuality (e.g., Charboneau & Lander, 1991; Dixon, 1984; Kitzinger & Wilkinson, 1995; Sophie, 1985; Spitzer, 2003); (2) studies of "situational homosexuality" (e.g., incarcerated individuals [Gaillombardo, 1966]); and (3) research with self-identified bisexuals who report alternating periods of exclusive orientation to one sex or the other (e.g., Blumstein & Schwartz, 1976; Rosario et al., 1996; Zinik, 1985).

Sex Differences

The question of the fundamental stability or flexibility of sexual orientation has generally been addressed without consideration to sex. That is, those arguing that sexual orientation is stable and immutable, as well as those arguing that sexual orientation is flexible and evolving, have typically extended their position to both men and women (e.g., Blumstein & Schwartz, 1976; D'Augelli, 1994; Harry, 1984). However, it has increasingly been hypothesized that men and women may differ in this regard; specifically, that flexibility may be more characteristic of women's than men's sexual orientation (e.g., Baumeister, 2000; Bem, 1996; Brown, 1995; Charbonneau & Lander, 1991; Diamond, 2000, 2003a, 2003b; Friedman & Downey, 2002; Haldeman, 1994; Harry, 1984; Henderson, 1984; Kitzinger & Wilkinson, 1995; Masters & Johnson, 1979; Nichols, 1990; Pillard, 1990; Rust, 2001).

Unfortunately, empirical documentation of sex differences in the flexibility of sexual orientation is limited. Few studies of change over time in sexual orientation include both men and women for direct comparison and other relevant research is limited by the atypicality

of the populations studied (e.g., prison inmates, marital "swingers," and group sex participants).

Ancillary indicators of sex differences in the flexibility of sexual orientation are found in comparisons of how men and women experience and conceptualize their sexual orientation and in differences noted in their descriptions of their sexual lives. It has been observed, that men typically describe their sexuality in terms that suggest a continuous and unchanging orientation, whereas women often describe a more fluid, continually evolving, highly contextual sexual orientation (Brown, 1995; Gonsiorek & Rudolph, 1991; Haldeman, 1994; Henderson, 1984; Pillard, 1990).

With regard to identity development or "coming out," Haldeman (1994) likened the process for gay men to that of "an internal evolution of sorts, a conscious recognition of what has always been" (p. 222); and Henderson (1984) described it as "a discovery, not a choice . . . they admit their (presumably continuous) homosexuality" (p. 217). For lesbians, this process has been characterized by "greater fluidity and ambiguity" (Gonsiorek & Rudolph, 1991, p. 165; Diamond, 2003a). It is more tied to "choices or social and political constructions" (Haldeman, 1994, p. 222), and perhaps more influenced by contextual factors (Henderson, 1984; Pillard, 1990) and responsive to "culture, learning and social circumstances" (Baumeister, 2000, p. 347).

The purpose of the present study was to assess stability and flexibility in sexual orientation across the adult lifespan, as demonstrated by change in orientation over time, and to evaluate sex differences in this flexibility. It was hypothesized that women would report greater change in sexual orientation over time than men for all three categories of current sexual orientation (heterosexual, bisexual, gay). No prediction was made with regard to which dimension(s) of sexual orientation (sexual fantasy, romantic attraction, sexual behavior) would best reflect this sex difference.

In order to assess stability and flexibility in sexual orientation and evaluate sex differences therein, the present study conceptualized sexual orientation as a multidimensional, continuous variable, represented primarily by Kinsey ratings for sexual fantasy, romantic attraction, and sexual behavior, as well as via categorical self-identification. These dimensional components were selected for several reasons. First, within-participants differences on ratings of these dimensions have been documented in a number of studies (e.g., Bell & Weinberg, 1978; Berkey, Peral-Hall, & Kurdek, 1990; Reinisch, Sanders, & Ziemba-Davis, 1988, Stokes, McKirnan, & Burzette, 1993). Further, these dimensions have been found to discriminate between categories of sexual

orientation (heterosexual, bisexual, homosexual) (Snyder, Weinrich, & Pillard, 1994) and closely correspond to the three most commonly occurring elements in conceptual definitions of sexual orientation found in the sexual orientation literature (Shively, Jones, & DeCecco, 1983).

Flexibility, defined here as change in sexual orientation over time, was therefore represented by time-related changes in Kinsey ratings of these multiple dimensions of orientation. Although it is acknowledged that there are other possible manifestations of flexibility in sexual orientation, of greatest interest in the present study was change in sexual orientation over time. It is this issue of temporal stability that may correspond best to the question of the immutability of sexual orientation.

METHOD

Participants

Through the use of a wide variety of recruitment strategies, we hoped to secure as large (and hopefully representative) a sample of each sex by current sexual orientation category as possible. These strategies included (1) advertisements in a variety of local, regional, and national print publications of both general interest and those targeting special populations (e.g., retirees, women, gays, the bisexual community); (2) announcements to community groups (again, both general groups as well as those serving the same special populations); and (3) Internet recruitment via announcements on web pages and postings to e-mail discussion lists and usenet groups. The basic recruitment advertisement/announcement read as follows: "Men and women age 35 and above of all sexual orientations are needed for an anonymous questionnaire survey of human sexuality being conducted by researchers at the University of Utah. We are attempting

to gather some basic information on sexuality/sexual orientation across the lifespan. The questionnaire takes approximately 10-40 minutes to complete depending on the person's age and sexual history and consists of a series of brief questions about sexual behavior, sexual orientation, romantic relationships, and attractions across the lifespan."

Recruitment announcements and letters of introduction provided interested individuals with two means of participation in the study: online completion of the questionnaire at the study web-site or participation via surface mail. A total of 1,041 individuals completed the survey on-line. Of these, 636 (61%) were retained in the final sample. Identical questionnaire packets were sent to community groups and to individuals who left phone requests. A total of 513 packets were sent to 15 community groups for distribution, of which 137 (26.7%) were returned, 89 of which were included in the final sample. There were 73 phone requests for questionnaires to be sent by mail, of which 24 (32.9%) were returned to the study, 18 of which met eligibility requirements.

A total of 1229 completed surveys were received, of which 444 were removed because the respondents were outside the age range of the survey and an additional 23 were removed because the individual did not currently self-identify as gay, bisexual, or heterosexual. After these removals, 762 participants remained (420 men and 342 women) between the ages of 36 and 60. Of the 420 men, 163 currently identified as heterosexual, 76 as bisexual, and 181 as gay. Of the 342 women, 119 currently identified as heterosexual, 65 as bisexual, and 158 as lesbian. The sample was predominantly Caucasian (89%) and well educated (94% had attended some college, 30% had a college degree). Unlike much previous sexuality research, participants were not mainly from large metropolitan

Table I. Distribution of Participants by Sex, Current Sexual Orientation, and Age Group

Sex	Sexual Orientation	Age Group					<i>N</i>	<i>M</i> _{age}	<i>SD</i>
		36-40	41-45	46-50	51-55	56-60			
Men									
	Heterosexual	55	33	26	27	22	163	45.6	7.4
	Bisexual	21	14	16	15	10	76	46.2	7.3
	Gay	45	41	35	42	18	181	46.4	6.8
	Total	121	88	77	84	50	420		
Women									
	Heterosexual	40	25	23	21	10	119	45.0	6.8
	Bisexual	26	17	15	7	0	65	42.5	5.3
	Gay	31	42	43	23	19	158	46.7	6.4
	Total	97	84	81	51	29	342		

areas (only 20% lived in cities of 500,000 or more). The distribution of participants by sex, current sexual orientation, and age group is provided in Table I.

Measures

The questionnaire used in this study was developed specifically for that purpose. It was designed to obtain the specific current and historical sexual and relationship information necessary to test the research hypotheses in the briefest time. While no formal pilot testing of the questionnaire took place, early versions were refined based on feedback from colleagues of the authors. Depending on the age and sexual experience of the respondent, it required from 10 to 40 minutes to complete. The following data were obtained for use in the present study:

Demographics

Respondents' age, sex, race/ethnicity, education, occupation, and city of residence were requested.

Current Sexual Orientation

Participants were asked to indicate their current self-labeled sexual orientation by selecting the term that he/she currently believed "most accurately represented" them from the options of heterosexual, bisexual, gay/lesbian, or other self-identification (with space provided to explain response of "other").

Dimensional Ratings (Past 12 Months)

Participants rated themselves on a 7-point Kinsey scale (where 0 = "exclusively heterosexual" and 6 = "exclusively homosexual") for three dimensions of sexual orientation: Sexual Fantasy, Romantic Attraction (e.g., "in-love," "crushes"), and Sexual Behavior (sexual acts), for the most recent 12 months.

Sexual History

Participants were asked to provide information about themselves for 5-year periods beginning with age 16–20 (i.e., age 16–20, 21–25, 26–30, 31–35, etc). To facilitate recall, respondents were asked a set of initial orienting questions for each 5-year period (calendar years spanned, primary place of residence, occupation). They were then

asked to indicate "the most appropriate term to describe yourself" (i.e., one of the following categorical labels, heterosexual, bisexual, gay/lesbian, other) for each age period and to rate themselves for the period, using the same 7-point Kinsey scale mentioned above, for each of the three dimensions of sexual orientation (sexual fantasy, romantic attraction, sexual behavior).

While it is obvious that peoples' sexual lives do not change neatly at 5-year intervals, we chose to use discrete time periods in order to make manageable these life-long retrospective reports. Five years was chosen because it was reasoned that a shorter period of inquiry would substantially (and, perhaps, unreasonably) lengthen the time required for participation, while longer periods would increase the likelihood that brief periods of change might not be detected.

Data Analysis

Derivation of Change Scores

To assess change over time, difference scores between consecutive 5-year rating periods were computed (Difference Score1 = Kinsey Rating Age 16–20 minus Kinsey Rating Age 21–25; Difference Score2 = Kinsey Rating Age 21–25 minus Kinsey Rating Age 26–30, etc.). The absolute values of these difference scores were then summed to obtain a total change score. This was done separately for each of the three dimensions of orientation assessed (sexual fantasy, romantic attraction, and sexual behavior).

Total Change Lifespan (TCL)

The primary dependent measure, Total Change Lifespan (TCL), was computed by summing the absolute values of all possible difference scores for each participant ($TCL = |DiffScore1| + |DiffScore2| + |DiffScore3| + \dots + |DiffScore7|$). While this score made maximum use of the available data, an obvious limitation of this approach for assessing change over time was that there was not equal opportunity for change across ages; for older participants, the total change scores were computed from a greater number of difference scores. There are at least two ways of addressing this possible confound: Treating age as a covariate or using age as an independent variable in the analysis. The first approach assumes a linear relationship between age and change as well as equal correlations of the dependent variable with age across gender within each orientation. However, we anticipated the possibility of non-linear effects of age and of an interaction of age

Table II. Means and SDs of Total Change Lifespan Scores For Dimensions of Sexual Orientation By Sex and Current Categorical Sexual Orientation

	Sexual Fantasy		Romantic Attraction		Sexual Behavior	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Heterosexual Men	0.48 _a	1.09	0.26 _a	0.82	0.39 _a	0.88
Heterosexual Women	0.97 _b	1.66	0.58 _b	1.25	0.45 _a	1.01
Bisexual Men	3.42 _a	2.46	3.35 _a	2.78	3.89 _a	2.87
Bisexual Women	2.94 _a	2.06	3.34 _a	2.36	3.83 _a	2.68
Gay Men	1.09 _a	1.82	1.89 _a	2.68	2.37 _a	2.84
Lesbians	3.05 _b	2.91	3.29 _b	3.04	4.10 _b	3.01

Note. For each men-women comparison, means with different subscripts were significantly different from each other ($p < .05$)

with gender or orientation and, therefore, chose to evaluate the effects of age by treating it as an independent variable.

RESULTS

Table II shows the means and *SDs* of Total Change Lifespan (TCL) scores by sex and dimension of sexual orientation. A 2 (Sex) \times 5 (Age Group) \times 3 (Sexual Orientation: Heterosexual, Bisexual, Gay) multivariate analysis of variance (MANOVA) was performed for the Total Change Lifespan (TCL) scores, with the three dimensions of sexual orientation (sexual fantasy, romantic attraction, and sexual behavior) serving as the dependent variables. The results yielded significant multivariate main effects for Sex, $F(3, 732) = 3.00, p < .001$, Age Group, $F(12, 1937) = 4.43, p < .001$, and Sexual Orientation, $F(6, 1464) = 56.35, p < .001$, as well as significant multivariate Age Group \times Sexual Orientation, $F(24, 2122) = 2.84, p < .001$ and Sex \times Sexual Orientation, $F(24, 2122) = 6.78, p < .001$, interactions.

To investigate further the Sex by Sexual Orientation interaction, we examined the main effect of Sex within each Sexual Orientation, while also statistically controlling for the effects of Age and the Age \times Sexual Orientation interaction. To accomplish these objectives, a series of follow-up 2 \times 5 (Sex \times Age Group) MANOVAs were performed within each current Sexual Orientation. Both Age and Sex were included in these post hoc analyses because both variables had significant main effects which could not be ignored when examining either the Age \times Sexual Orientation or the Sex \times Sexual Orientation interactions. These analyses were designed to examine either the Age or Sex interaction effect while also controlling for the significant effects of the other variable (i.e., either Age for the Sex interaction or vice versa). Separate tests, described below, were conducted

for each of the current Sexual Orientation categories (Heterosexual, Bisexual, Gay). The three change scores (sexual fantasy, romantic attraction, sexual behavior) were the dependent variables (see Table II).

Heterosexual Men and Women

Among heterosexuals, a significant multivariate main effect was found for Sex, $F(3, 270) = 3.63, p = .013$, but not for Age Group or for the Sex \times Age Group interaction. The main effect for Sex was in the direction of higher change scores for women. Follow-up univariate tests revealed that there were significant Sex differences in total change for the dimensions of sexual fantasy, $F(1, 270) = 8.68, p = .003$, and romantic attraction, $F(1, 270) = 4.85, p = .028$, with women reporting greater change than men over the lifespan on these dimensions (see Table II). The effect sizes for these differences were in the medium range (Cohen's d for sexual fantasy = 0.36, for romantic attraction = 0.31). There was no significant sex difference for sexual behavior ($F < 1$).

Bisexual Men and Women

Among bisexuals, there was a significant multivariate main effect for Age Group, $F(12, 344) = 3.46, p < .001$, but the Sex main effect and the Sex \times Age Group interaction were not significant. Follow-up univariate tests revealed significant Age Group differences for sexual fantasy, $F(4, 345) = 5.76, p < .001$, romantic attraction, $F(4, 345) = 2.29, p < .01$, and a marginally significant effect for sexual behavior, $F(4, 345) = 3.64, p = .06$. The general trend across all three dimensions was toward higher change scores with increasing age, perhaps (at least in part) as a function of the increasing time over which

change could have taken place for older respondents. Total Change Lifespan (TCL) scores for bisexuals (men and women combined) were as follows: sexual fantasy; for current age 36–40, $M = 2.13$ ($SD = 1.6$), age 41–45, $M = 2.90$ ($SD = 2.1$), age 46–50, $M = 4.04$ ($SD = 2.3$), age 51–55, $M = 4.14$ ($SD = 2.4$); romantic attraction, age 36–40, $M = 2.77$ ($SD = 2.1$), age 41–45, $M = 3.29$ ($SD = 2.7$), age 46–50, $M = 3.71$ ($SD = 2.8$), age 51–55, $M = 4.68$ ($SD = 2.9$); sexual behavior, age 36–40, $M = 3.23$ ($SD = 2.4$), age 41–45, $M = 3.06$ ($SD = 2.5$), age 46–50, $M = 4.06$ ($SD = 2.8$), age 51–55, $M = 5.55$ ($SD = 2.7$).

Gay Men and Women

Among gays, significant multivariate main effects were found for Sex, $F(3, 327) = 23.83$, $p < .001$ and Age Group, $F(12, 865) = 2.82$, $p = .001$, as well as a Sex \times Age Group interaction, $F(12, 865) = 2.15$, $p = .012$. With regard to Sex, lesbians reported greater change than gay men for all three dimensions (see Table II), with the following large effect sizes; sexual fantasy, $d = .82$, romantic attraction, $d = .49$, and sexual behavior, $d = .59$. Follow-up analyses revealed that the Sex \times Age Group interaction was significant only for the dimension of sexual fantasy, $F(4, 865) = 4.71$, $p = .017$. On this dimension, lesbians showed a pattern of relatively high change scores increasing significantly with age, whereas gay men reported relatively low change scores with no significant increase with age. The TCL scores for gays on sexual fantasy were as follows: For men age 36–40, $M = 0.64$ ($SD = 1.3$), age 41–45, $M = 1.24$ ($SD = 1.8$), age 46–50, $M = 1.23$ ($SD = 2.1$), age 51–55, $M = 1.55$ ($SD = 2.2$); for women age 36–40, $M = 1.94$ ($SD = 1.6$), age 41–45, $M = 2.43$ ($SD = 2.3$), age 46–50, $M = 3.33$ ($SD = 2.8$), age 51–55, $M = 5.17$ ($SD = 4.2$).

Dimensional Change: Overview

While many of our participants reported some change on one or more dimensions, it is clear that this in no way implies that sexual orientation is a pervasively fluid, easily altered characteristic. Fully one third of our total sample (66% of heterosexual men, 5% of bisexual men, 33% of gay men, 51% of heterosexual women, 1.5% of bisexual women, 9% of lesbian women) reported *no change ever* for *any* dimension of orientation. Slightly more than half of our participants (93% of heterosexual men, 10% of bisexual men, 48% of gay men, 86% of heterosexual women, 9% of bisexual women, 20% of lesbian women) reported no more than a cumulative one point shift on any dimension over their entire adult lives. Even smaller changes were reported by all groups when orientation was assessed with the more stringent categorical measure (Heterosexual, Bisexual, Gay, see below). Nevertheless, a compelling two-thirds of our participants reported some shift across the three dimensions of orientation.

Changes in Categorical Self-Identification

While the dimensional ratings described above constituted the primary level of analysis for this study, we also examined changes in categorical sexual orientation ratings. As one would expect (Diamond 2000, 2003a), there was less change in this aspect of sexual orientation than in the dimensional ratings. Of the 762 participants, 277 reported one or more transitions in categorical sexual identity over the lifespan: 5 (3%) of 163 currently self-identified heterosexual men, 4 (3%) of 119 heterosexual women, 50 (66%) of 76 bisexual men, 50 (77%) of 65 bisexual women, 69 (39%) of 177 gay men, and 99 (64%) of 154 lesbians. Chi-square analyses of the sex

Table III. Previous Sexual Orientation Self-Labels for Each Current Categorical Sexual Orientation Group

	Heterosexual Only	Bisexual Only	Homosexual Only	Mixed ^a
Heterosexual Men	97%	2%	0%	1%
Heterosexual Women	97%	3%	0%	0%
Bisexual Men	50%	34%	12%	4%
Bisexual Women	63%	23%	6%	8%
Gay Men	11%	19%	61%	9%
Lesbians	39%	10%	35%	16%

^aMixed refers to a combination of the two categories that differ from the individual's current categorical sexual orientation: For current heterosexuals, this refers to those having self-identified as both homosexual and bisexual at different previous time periods; for current bisexuals, this refers to those having identified as homosexual and bisexual at different previous time periods; for current homosexuals, this refers to those having identified as heterosexual and bisexual at different previous time periods.

differences were non-significant for heterosexuals ($\chi^2 < 1$, $df = 1$, ns) and bisexuals ($\chi^2 = 2.20$, $df = 1$, $p > .05$). Lesbians, however, were significantly more likely to have ever changed their categorical sexual self-identity than were gay men ($\chi^2 = 21.10$, $df = 1$, $p < .001$). Table III presents the breakdown, by percentage, of the specific previous categorical self-identifications for each current sexual orientation group.

As can be seen in Table III, only a minority of currently bisexual men (34%) and women (23%) had always self-identified as bisexual. For most current bisexuals of both sexes who had ever changed, the shift that took place was from a prior identification as a heterosexual rather than a homosexual or some combination of both. Consistent with other reports (e.g., Diamond & Savin-Williams, 2003; Rosario et al., 1996), only a minority of currently self-identified lesbians had always seen themselves as lesbians, with most of those who changed having previously identified only as heterosexual. In contrast, the majority (61%) of gay men had always seen themselves as homosexual, with those who had changed having been more likely to previously self-identify as strictly bisexual than as strictly heterosexual.

DISCUSSION

The flexibility over time of sexual orientation in currently gay, straight, and bisexual men and women was evaluated by assessing self-reported change in (1) three dimensions of sexual orientation (sexual fantasy, romantic attraction, and sexual behavior) and (2) orientation category (gay, straight, bi). Sex differences were observed in many, but not all, comparisons made.

There were significant differences in reported change in dimensional orientation over time between gay men and lesbian women and between heterosexual men and heterosexual women, but not between bisexual men and women. However, the pattern of these differences was not the same across the three dimensions of orientation assessed. Specifically, while lesbians reported greater change than gay men did on all three dimensions assessed (sexual fantasy, romantic attraction, and sexual behavior), heterosexual women reported significantly greater change than heterosexual men only for sexual fantasy and romantic attraction (i.e., what little change there had been on the behavior dimension for heterosexuals did not differ by participant sex).

When change in sexual orientation was assessed using the more stringent categorical measure (i.e., heterosexual, bisexual, or gay self-identity), the sex difference was significant only among homosexuals. Specifically, lesbian participants were far more likely than gay men

to report having previously identified as something other than homosexual (39% of gay men, 65% of lesbians). Further, among the currently identified homosexuals who had previously identified as something else, most of the women had previously identified as heterosexual, while for the males, the modal prior identification was as bisexual (rather than heterosexual). In this sense of change too, it could be argued that the women demonstrated greater fluidity (moving from heterosexual to homosexual) than did the men (moving from bisexual to homosexual).

It has been suggested that women's sexual orientation is more contextually embedded, whereas men's sexual orientation transcends context (Brown, 1995; Gonsiorek & Rudolph, 1991; Haldeman, 1994; Harry, 1984; Henderson, 1984; Pillard, 1990). Friedman and Downey (2002) offered a possible biological explanation for such a sex difference. They suggested that prenatal testosterone limits options for sexual fantasy for men much earlier in the life cycle, and to a much greater degree than for women. Alternatively, sex differences in response to context may be primarily related to differences in the way males and females are socialized with regard to sex and love. Henderson (1984) suggested that "girls learn to be sexual in the context of social relationships" (p. 217) and subordinate sex to love, whereas for boys the opposite is true. Such differences in response to contextual influence may yield greater shifts in orientation over the lifespan for women and thus account for the sex differences observed in the present study.

Contrary to our predictions, bisexual men and women did not differ with regard to reported change in sexual orientation over time. Although this finding limits the scope of conclusions that can be drawn regarding sex effects, it is noteworthy in other respects. The lack of sex differences between bisexual men and women in this study, while sex differences were found for heterosexuals and gays/lesbians, may provide modest support for previous assertions that bisexuality (as a social and/or biological phenomenon) may be qualitatively distinct from both heterosexuality and homosexuality (Blumstein & Schwartz, 1976; Harry, 1984; Klein, 1978; McDonald, 1982; Rust, 2001; Zinik, 1985). It is interesting to note that the change scores of both the bisexual men and women were higher than those of all other groups, except the lesbians who showed the greatest dimensional changes among all the groups (see Table II).

Our sex-related findings may help to explain, in part, why most conversion therapy outcome studies suggest that sexual orientation is remarkably stable (Haldeman, 1991, 1994), even in the face of concerted efforts to alter it. Most conversion therapy participants reported in the literature are gay men (Haldeman, 1991, 1994), the non-heterosexual group that, in our study, (a) exhibited the

smallest dimensional changes (see Table II), and (b) the least likely to have ever considered themselves anything but their current orientation category (see Table III).

Methodological Issues

As discussed previously, there is no agreed-upon definition or measurement of sexual orientation. Whether sexual orientation is a categorical construct or exists on a continuum is still debated (e.g., Ellis, Burke, & Ames, 1987; McConaghy, 1987; Van Wyk & Geist, 1984). The central components or dimensions of sexual orientation are likewise an unresolved matter. In this study, sexual orientation was defined as a multidimensional construct comprised of cognitive, behavioral, and affective components. The dimensions of sexual fantasy, romantic attraction, and sexual behavior were selected for analysis, and the 7-point Kinsey scale was employed to represent the continuum of orientation.

The necessity for this multidimensional assessment of orientation was borne out by the pattern of results. That is, a different set or smaller number of dimensions of measurement might not have revealed the differences among heterosexuals, gays and bisexuals in the manifestation of sex differences in orientation.

In this study, flexibility in sexual orientation was defined as change in orientation over time (measured dimensionally and categorically). However, flexibility may be manifested in other ways. For example, flexibility might be regarded as the polarity of Kinsey ratings at a single point in time (Zinik, 1985). That is, someone who is near the middle, "bisexual" range of the Kinsey scale would be considered to be more flexible than someone who is at either extreme end of the Kinsey scale (exclusively heterosexual or homosexual).

The breadth of the spectrum of dimensional self-ratings might also have demonstrated flexibility over time. Those with a more flexible orientation would cover a greater portion of the scale over the lifecourse. Alternatively, flexibility might be demonstrated by openness to a spectrum of future behaviors and attractions, regardless of past experiences (as in Klein, Sepakoff, & Wolfe, 1985). Future research may determine if these or other measures of flexibility yield patterns of results consistent with the current findings.

Given that our principle data are retrospective, memory bias is a potential threat to the findings of this study. How well our participants were able to recall how they felt, thought, and behaved decades ago is open to question. Further, it has been suggested that the recollections of gays and lesbians may be specifically biased toward an essentialist interpretation of past events and feelings (e.g.,

D'Augelli, 1994; Hoult, 1983). That is, gays and lesbians may recall or interpret past experiences and feelings in a way that may be particularly suggestive of an early-determined sexual orientation or a strong developmental continuity between early experiences and adult sexual orientation outcome. If true, it is possible that some participants actually experienced greater change in sexual orientation over their lifespan than was reflected in their reported retrospective ratings. Whether men and women might have been differentially impacted by such potential bias is also unknown.

As described earlier, the choice of a five-year rating period represented a compromise between our desire to identify most of the changes that might have taken place and our concern about discouraging participation because of an unreasonably long questionnaire (particularly for older participants). Certainly, some of our participants could have made one or more changes during any of the five-year periods. As a consequence, they might have had difficulty characterizing themselves during such a period. Further, different participants could have utilized different strategies in trying to make such characterizations. While we recognize the variance that was likely introduced by the rating period choice we made, we also recognize that any alternative rating period would have introduced its own advantages and disadvantages.

In all research that relies on volunteer participants, particularly when response rates cannot be consistently evaluated, there are concerns regarding the representativeness of the research sample in terms of age, social class, and other demographics (e.g., our largely Caucasian, well-educated sample), as well as attitudes and relevant experiences. This concern is particularly appropriate in sexuality research, where volunteers have been found to be more liberal, sex-positive, sexually experienced, and more permissive than those who choose not to participate (Clement, 1990; Strassberg & Lowe, 1995). In this study, that effect might have translated to a greater than representative number of participants whose sexual fantasies, romantic attractions, and/or sexual behaviors were quite varied. Further, differences between participants and non-participants in sexuality research are often more extreme for women than men (Strassberg & Lowe 1995). Thus, the sex differences observed in this study may, at least partially, be accounted for by volunteer bias.

Clinical Implications

Many therapists derive their understanding of gay and lesbian experience, and thus their direction for clinical intervention, from models of homosexual identity formation (e.g., Cass, 1979, 1983; Chapman & Brannock,

1987; Coleman, 1981; McDonald, 1982; Plummer, 1975; Ponce, 1978; Troiden, 1979, 1988). The therapeutic goal implicit or explicit in these models is adoption of a unitary (gay or lesbian) identity. These models typically outline a stage-like process including recognition, uncertainty, acceptance, and integration of a homosexual identity. A central principle of these models, however, is that sexual orientation is an enduring core feature of the individual (Kitzinger & Wilkinson, 1995; Richardson, 1984). While it is likely that these models accurately capture the experience of many gay and lesbian individuals (Cass, 1983; Coleman, 1981), the present study suggests that there are at least some for whom sexual orientation is not a stable characteristic and that this is more likely to be the case for women than men. An alternative therapeutic objective, which focuses on authenticity and recognition of the fluid, dynamic, complex nature of orientation, may be appropriate for some clients, particularly women (Bridges & Croteau, 1994; Coleman, 1987; Diamond, 2003a, 2003c; Golden, 1987; Green & Clunis, 1989; Schuster, 1987).

Directions for Future Research

The specific pattern of sex differences found in this study requires replication and further investigation. It remains to be seen if the pattern across sex, sexual orientation self-identification, and dimensions of orientation is robust with regard to alternative definitions and means of assessment. Further, the data gathered in the current investigation would be richly complimented by the qualitative study of change in sexual orientation (e.g., Charboneau & Lander, 1991; Kitzinger & Wilkinson, 1995), particularly if prospective in nature (e.g., Diamond, 2003a).

Future research should also address in greater detail the relationship among the dimensions of orientation as understood by the individual. If a person views sexual orientation as primarily about emotional attraction and romantic feelings or primarily a function of behavior, are these the dimensions most likely to remain stable? Do men and women differ with regard to the dimension(s) self-perceived as most central to orientation?

Sexual orientation is a dimension of human existence that is fundamentally complex, varied in its expression, and likely to be multidetermined in its etiology. It seems counterintuitive, therefore, to presume uniform stability in orientation across individuals. Findings from this study indicate that sexual orientation is flexible, to some degree, for some individuals and that sex differences exist in flexibility between heterosexual men and women and, to an even greater degree, between gay men and

women. The difference between heterosexuals and gays with regard to dimensions for which there were sex differences reaffirms the importance of multidimensional assessment of orientation. The results of this study have potentially important implications for the understanding of sexual orientation and the flexibility of orientation and suggest strongly that further research in this area is warranted.

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