ABSTRACT

Title of Dissertation: "BORN THAT WAY" AND OTHER
                                         NOTIONS: MEASURING SEXUAL
                                         MINORITY INDIVIDUALS' BELIEFS
                                         ABOUT SEXUAL ORIENTATION

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        The focus of the present study was the creation and initial validation of a measure

of popular beliefs about sexual orientation in a sample of sexual minority (i.e., lesbian,

gay, bisexual, queer, or otherwise same-sex attracted) adults, the Sexual Orientation

Beliefs Scale (SOBS). While drawing from the empirical literature on essentialist beliefs

about social groups, the current project sought to investigate ontological assumptions that

are both essentialist and non-essentialist in nature, specifically including beliefs rooted in

agentic and social constructionist perspectives as yet untested in the empirical literature.

        Participants ($N = 332$) were a national sample of sexual minority adults ranging in

age from 18-74 years. Data was collected using through the use of an internet-based

survey, and exploratory factor analysis was used to investigate the underlying factor

structure of the SOBS. An initial 91 items were reduced to a 35-item scale using a best-fit

four-factor solution that accounted for 35.33% of the obtained variance. Based on their

component items, the four subscales of the SOBS were named Naturalness, Discreteness, Entitativity, and Personal and Social Importance of Sexual Orientation.

Relationships between sexual orientation beliefs and right-wing authoritarianism, need for cognitive structure, collective self-esteem, and sociodemographic characteristics of participants were explored and results of these analyses are presented. Notably, the level of endorsement of specific types of beliefs, as measured by the SOBS subscales, was found to differ significantly according to gender and sexual orientation self-labeling of participants. Results broadly suggest the need for further investigation of popularly-held beliefs about sexual orientation and their correlates. Strengths and limitations of the present study, as well as recommendations for future research with the SOBS, are also discussed.

"BORN THAT WAY" AND OTHER NOTIONS: MEASURING SEXUAL MINORITY
INDIVIDUALS' BELIEFS ABOUT SEXUAL ORIENTATION

By

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CHAPTER 1

Introduction

A perusal of headlines in the popular media makes it clear that people expend great deals of time and energy trying to make sense of sociodemographic variations and identity-based differences. Stories that touch on issues related to sexual orientation in particular receive frequent and energetic attention. The "shock" of athletes' and politicians' coming-out stories, ongoing and virulent debate about same-sex marriage, scrutiny of the legality and ethics—not to mention logic, in a time of war—of restricting military service under a "Don't Ask, Don't Tell" policy: these and other news items hint at the very real (and very public) consequences of common beliefs about diversity and identity. The etiology of social group differences has long been a focus of psychological scholarship, but only recently has attention been given to publicly held beliefs about such differences. In the last decade, a promising body of literature has emerged, documenting and explicating peoples' tendency to "essentialize"—or view as natural and inherent—a great number of social categories.

Psychological essentialism was defined by Medin and Ortony (1989) as the popular belief that members of a social category possess a shared, underlying similarity (an "essence") that defines them. The characteristics produced by this essence are believed to be immutable: internal, persistent, and consistent across time. Empirical work in this domain suggests that many essentialist beliefs emanate from the idea that biologically based differences exist between groups. For example, belief in a "gay gene" is an essentialist way of accounting for real and/or perceived differences between sexual minority and heterosexual people. However, essentialist beliefs do not necessarily require

biological explanations, or any explanation, in fact; rather, these beliefs simply hinge on an understanding of social groups as fundamentally different from one another. A person may believe men and women are *biologically* driven to different roles or behaviors (e.g., "fight or flight" responses attributed to men and "tend and befriend" responses attributed to women), or that they are *socialized* from a young age to behave differently. In either case, the resulting belief is that women and men are fundamentally different.

Existing literature on essentialism suggests that traditionally, essentialist beliefs about a social group are related to stereotype endorsement and negative attitudes toward that group (e.g. Haslam & Levy, 2007; Jayaratne et al., 2006). However, this relationship has been demonstrated to be somewhat more complicated where beliefs about sexual orientation are concerned. Increasing evidence suggests that beliefs in genetic causes of sexuality are linked to affirmative attitudes about lesbian, gay, and bisexual (LGB) people, contrary to the findings for other sociodemographic variables such as race and gender (Hegarty & Pratto, 2001). This is consistent with much current LGB advocacy, which often argues that a biological predisposition to a minority sexual orientation requires conferral of equal protections and rights to LGB people under the law (Fassinger & Arseneau, 2007; for an example, see Human Rights Campaign, 2006). Yet, while some essentialist beliefs may be associated with positive attitudes toward LGB people, recent research has found support for a two-factor structure of essentialist beliefs, where one factor is associated with positive attitudes toward "homosexuality" and the other factor is associated with negative attitudes (Hegarty & Pratto).

It bears noting that the existing essentialism literature largely has been confined to the study of beliefs about social groups that have been oppressed historically (e.g.,

women, African Americans, gay men). Yet, research has not been undertaken to explore lay beliefs held *by* members of historically oppressed groups. Thus, we know little about the nature of beliefs that sexual minority people themselves hold about sexual orientation. It is reasonable to presume that some sexual minority people may have served as participants in prior studies investigating beliefs about sexual orientation; however, the sexual orientation demographic breakdown of study samples has characteristically been unreported, often because the information was not collected in the first place.

The present study sought to contribute to the existing literature on beliefs about social group differences, and specifically sexual orientation, through the creation and initial validation of a new measure of sexual orientation beliefs. This measure and the study within which it is positioned would add to the current body of knowledge is several distinct ways. First, the project moves away from the traditional focus on dominant social group members' beliefs about non-dominant social group members and instead investigates sexual minority people's own beliefs about sexual orientation. In doing so, the present study recognizes that people with minority sexual orientations, who arguably have unique experiences based on their distinct sexual identities (e.g., lesbians), are frequently united under a broader "umbrella" community of lesbian, gay, and bisexual people. Finally, the project proposes to investigate lay ontological assumptions that are other than essentialist in nature. Specifically, agentic and social constructionist perspectives are offered as potential sources of beliefs about social categories, as yet untested in the empirical literature.

CHAPTER 2

Review of the Literature

The overall purpose of the present study was to examine the content(s) and structure(s) of individuals' beliefs about sexual orientation. In this chapter, a review of the relevant literature is provided. First, an overview of psychological essentialism is presented, and recent empirical work on essentialist beliefs about social groups is discussed. Findings general to social identities and particular to sexual orientation are highlighted. Strengths and weaknesses in the current body of essentialist literature are briefly summarized. Subsequently, discussion of other potential sources of sexual orientation beliefs—specifically, social constructionism and constructivist agency—will be offered, along with implications of these particular conceptual frameworks for individual theories of sexual orientation. Finally, established and prospective implications of essentialist, social constructionist, and agentic beliefs about sexual orientation for counseling psychology will be considered.

It is important to note here that any discussion which includes specific naming of sociodemographic categories is fraught: socially acceptable group labels are constantly in flux, and use or misuse of any label brings with it the potential for reification of difference, offense to in-group members and allies, confusion on the part of out-group readers, and inadvertent political commentary. Hence, I would note that for the purposes of this literature review, I have chosen to retain the language (including decisions about capitalization) of the original work even where it may be inconsistent with current professionally preferred or popular usage (e.g., "blacks," "homosexuals"). However, in discussion of the present project, the vocabulary employed will specifically reflect the

positionality of this author in the context of this study.

While the present project centered on beliefs about sexual orientation, there are several reasons for which both gender and sexuality were considered in the planning and execution of this study. First, the empirical research on essentialism is strongest on gender, where we know essentializing begins at least in preschool and continues through adulthood; furthermore, gender frequently has been found to be rated more highly on properties related to essentialism (e.g., naturalness, necessity, immutability, discreteness, and stability; Prentice & Miller, 2006) than other social categories. Thus, a consideration of gender was at times expedient, as it provided a good source for clear examples where data directly related to sexual orientation are lacking. Moreover, many scholars have articulated the popular conflation of gender and sexual orientation that renders difficult a discussion of only one or the other (cf. Fassinger, 2000). For example, public attitudes toward gay men have been found to be more negative than attitudes toward lesbians, with the most negative attitudes being held by heterosexual men about gay men (Herek, 1994). Furthermore, recent work has considered more specifically the interrelationships among biological sex, social gender, sexual orientation or identity, and gender orientation or identity and argues that attempts to distinguish one from another may be futile and artificial (Fassinger & Arseneau, 2007). For the purposes of this study, *sex* is not discussed. *Gender* is used in reference to traditional conceptualizations of individuals as either masculine/male/men or feminine/female/women. *Gender identity* or *orientation* is defined as the constellation of characteristics which may be perceived as "gendered" (e.g., behaviors, appearance) and the recognition of one's self as masculine or feminine. *Sexual orientation* is defined for these purposes as sexual/affectional attractions and

behaviors, and *sexual minority* and *LGB (lesbian, gay, and bisexual)* are used to signify individuals with same-gender directed attractions and behaviors. However, as this study sought in part to investigate the definitions and conceptualizations individuals hold about sexual orientation, these operationalizations were not necessarily expected to transfer beyond the scope of the original proposal.

Psychological Essentialism

Essentialism is not a concept unique to psychology; discussion of whether objects and individuals possess a basic "essence," a fundamental quality that makes them what they are, can be found in various literatures tracing back at least 2,400 years (Gelman & Hirschfeld, 1999). However, psychology's relationship with essentialism has a much briefer history. Allport (1954) introduced the term "essentialism" to the field in his classic work on prejudice approximately fifty years ago when he proposed that belief in a group essence is a fundamental attribute of a prejudiced personality (Demoulin, Leyens, & Yzerbyt, 2006; Haslam, Bastian, Bain, & Kashima, 2006). More recently, Medin and Ortony (1989) are credited with coining the phrase "psychological essentialism," which they defined as the belief among laypeople[1] that many categories have essences. Briefly, they explicated psychological essentialism as a theory of category representation, in which members of an "essentialized" category are believed to possess a shared underlying similarity that defines them; this essence and the characteristics it produces are believed to be immutable. Prentice and Miller (2006), extrapolating from a variety of research studies in this area, illustrate essentialist beliefs using the category "wolf" as an

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[1] A hierarchical differential between psychologists and non-psychologists potentially suggested by this term warrants interrogation; however, "lay" is retained as a descriptor in this writing for clarity and accuracy.

example:

> [A] wolf remains a wolf even if it is wearing sheep's clothing…, even if a doctor
>
> performs an operation that makes it look like a sheep…, and even if it eats
>
> something that turns it into an object resembling a sheep…. Moreover, a wolf will
>
> develop wolflike characteristics even if it grows up in a community of sheep (p.
>
> 129).

Thus, psychological essentialism regards features such as traits and behaviors as intrinsic and consistent over time. As reflected in the above quote, initial work on essentialism focused on "natural kinds," or groupings presumed to be bound by a natural law, such as biological species (Haslam, Bastian, Bain, & Kashima, 2006). Indeed, it has been suggested that for an object to be essentialized, it must be perceived as a natural kind, and vice versa (Medin & Ortony, 1989; Rothbart & Taylor, 1992).

Essentialism and Social Categories

More recently, however, attention has shifted to social categories such as race and ethnicity. Much of the literature in this area is cognitive or developmental in its positioning and focuses on how infants and children come to make sense of the world. For example, research on cognitive essentialism suggests that children as young as three years of age are able to differentiate between physique, as a feature of individuals that has potential to change, and race, as one that does not (Gelman & Hirschfeld, 1999). Interestingly, "human artifacts" (i.e., objects constructed by humans, such as "coffee pot") are not prone to essentialist explanation by children, yet social groups—arguably also human constructions—are (Gelman & Hirschfeld). This research subsequently has given rise to a smaller yet significant body of literature attending to the content, structure,

and correlates of adults' essentialist beliefs about social categories, particularly those

categories in which they do not claim membership (e.g., Bastian & Haslam, 2006;

Demoulin, Leyens, & Yzerbyt, 2006; Hegarty & Pratto, 2004). This latter body of work

provided the basis for the current study. It is important to note that the literature on

essentialist beliefs about social categories typically does not attempt to reveal "truths"

about the essentialized group; rather, it seeks to reveal "truths" that individuals construct

about social categories.

Rothbart and Taylor (1992) expanded upon early work by Medin and Ortony

(1989), who argued that people hold an inaccurate understanding of social categories as

"natural kinds." In their discussion, Rothbart and Taylor highlighted two specific

qualities of essentialist beliefs: inalterability and inductive potential. According to this

view, one of the primary aspects of essentialist beliefs about social categories is that the

essence of that group is perceived as fixed over time and across individuals (e.g., the core

trait[s] of a given ethnic group does not change). The other core aspect is that it is

possible to use knowledge of an individual's membership in a social category to infer

characteristics about that individual (e.g., knowing a person belongs to a certain ethnic

group allows one to "know" other things about that individual). This inductive potential

is bidirectional, such that it also is possible for the attributes of an individual or a few

members of a group to be extrapolated to all members of that group.

Drawing from themes in the essentialist literature as well as that on social

categorization and stereotyping, Yzerbyt, Rocher, and Schadron (1997) provided a

theoretical mapping of potential components of essentialist beliefs. The nine domains

identified by the authors were discreteness, uniformity, informativeness, naturalness,

immutability, stability, inherence, necessity, and exclusivity. The following are brief

definitions of these components (synthesized from Yzerbyt, Rocher, & Schadron [1997]

and Haslam, Rothschild, & Ernst [2000]):

>*Discreteness*: Membership in an essential category is clear-cut; people either
>belong to the category or they do not;
>
>*Uniformity*: Essential categories are comprised of members who are very similar
>to one another;
>
>*Informativeness*: Knowledge of an individual's membership in an essential
>category allows for other judgments to be made about that individual;
>
>*Naturalness*: Essential categories are naturally occurring or bound by a natural
>law; non-essential groupings are comparably artificial;
>
>*Immutability*: Membership in an essential category is difficult to change; members
>cannot easily become non-members, and non-members cannot easily become
>members;
>
>*Stability*: Essential categories are stable across time and have been throughout
>history;
>
>*Inherence*: Essential categories possess an underlying reality; despite surface
>similarities and differences, category members are the same on a core level;
>
>*Necessity*: Essential categories have necessary features, without which it is
>impossible to be a member;
>
>*Exclusivity*: Membership in an essential category may preclude membership in
>any other category; non-essential categories allow membership in multiple groups
>concurrently.

It should be noted that subsequent scholarly attention to essentialist beliefs among adults has been diverse in methodological and disciplinary positioning, from qualitative (e.g., Wren, 2002) to experimental (e.g., Hegarty & Pratto, 2001), and social psychological (e.g., Kalish, 2002) to anthropological (e.g., Gil-White, 2001). Perhaps as a result, the terms articulated above are not common to all work on psychological essentialism.

As a theory of lay beliefs, psychological essentialism does not require that one be able to directly define the "essence" of a category, nor detail which features of a member of the category are produced by that essence. However, biological factors frequently are cited as the cause of essential social classifications. For example, it is commonly held that racial categories are circumscribed by physical attributes such as skin color or facial features. While Medin and Ortony (1989) focused their definition of psychological essentialism on the ideas of laypeople, it is critical to note that essentialist beliefs may be—and frequently are—endorsed by psychologists themselves. For instance, biologically based essentialist explanations form the basis of many social scientific areas of inquiry, such as genetic and endocrine research, sociobiology, and evolutionary psychology (DeLamater & Hyde, 1998). This complicates the discussion of lay essentialist beliefs, which may simultaneously inform and be informed by formal psychological theories or well-established findings. Thus, essentialist epistemologies and lay essentialist beliefs are conceptually different, though perhaps not entirely unrelated. Jayaratne and colleagues (2006) detailed scientific findings that have been popularly assimilated as "genetic lay theories" from the eugenics era to present. Among the most extreme examples, the authors noted that explicit assertions of genetic inferiority were used by Hitler to promote racial hatred toward Jews and as a basis for anti-miscegenation

laws in the United States. While in recent years these beliefs largely have been replaced by more covert forms of anti-Semitism and racism, current debate about the existence of a "gay gene" reminds us that genetic lay theories still are relied upon as a way to understand sociodemographic differences (Haslam, Bastian, Bain, & Kashima, 2006; Hegarty & Pratto, 2001; Jayaratne et al., 2006). Political and other implications associated with essentialist beliefs will be considered later in this chapter.

Psychological essentialism describes traits, attitudes, and/or behaviors as internal, persistent, and consistent across time. Such beliefs do not necessarily require biological explanations. Indeed, popular (and professional) "nature-nurture" debates frequently are tantamount to a rivalry of competing essentialisms. For example, some psychodynamic theories focus on unconscious dynamics between a parent and a child as an explanation for gender differences (e.g., Chodorow, 1978). Additionally, so-called "cultural feminist" approaches account for the social and environmental experiences that produce gender differences (e.g., women's "different voice;" Gilligan, 1982). Though neither of these paradigms cites biological explanations of difference per se, they equally position gender differences as real, based on early experiences, and producing deep-seated within-group similarities (Bohan, 1993; Tavris, 1999). Thus, such "nurture"-oriented theories also may be understood as fundamentally essentialist in character, even as they attend to social or cultural influences.

Why Do Essentialist Beliefs Matter?

Much research on psychological essentialism theoretically or empirically explores the potential relationship between essentialist beliefs and prejudice or discrimination. Frequently these arguments follow Tajfel and Turner's (1986) social identity theory,

which stipulates that people are motivated to differentiate between groups in order to discriminate in favor of the group(s) in which they claim membership (Hegarty & Pratto, 2001). For example, a common finding in the literature is that people who make essentialist attributions about an individual's behavior are judgmental and punitive (Heyman & Giles, 2006). Many of these studies focus specifically on essentialism occurring within the context of the cognitive development of children, who have been found to privilege similarity and even devalue diversity among individuals in a group (Miller, 2004; cf. Gelman & Hirschfeld, 1999; Heyman & Giles, 2006 for more detailed discussion of cognitive essentialism among children).

One recent study (Bastian & Haslam, 2006) sought to investigate empirically the purported link between adults' essentialist beliefs and stereotype endorsement. The researchers administered measures of psychological essentialism along with five other measures of individual differences previously associated with stereotyping (i.e., need for cognitive closure, right-wing authoritarianism, attributional complexity, need to evaluate, and social dominance orientation). The authors also measured participants' knowledge of common stereotypes associated with nine different social groups (e.g., males, Japanese, and lawyers), as well as levels of endorsement of these stereotypes. The researchers found that while essentialist beliefs were not correlated with knowledge of the social group stereotypes, essentialist beliefs were positively associated with endorsement of the stereotypes. Multiple regression analysis revealed essentialist beliefs as the largest independent contributor to stereotype endorsement; among the individual difference scales, only right-wing authoritarianism made an independent contribution. Notably, essentialist beliefs were significantly correlated with endorsement of *both* positive and

negative social group stereotypes.

This last finding converges with a debate in the literature about whether essential beliefs have positive or negative (or neutral or mixed) implications for the individuals who hold them, and for members of the groups targeted by essentialist beliefs. It has been noted, as in the study described above, that social group stereotypes arising from essentialist claims may have positive or negative valence (Bastian & Haslam, 2006; Heyman & Giles, 2006). This is true for biologically based essentialist beliefs as well as those focusing on other sources of difference. For example, Tavris (1999) observes that cultural feminist theories that reinforce gender differences, presumably with the intention of positively reframing the outcomes of a gendered social hierarchy, implicitly or explicitly position women as superior in some capacity (e.g., morality; Gilligan, 1982). Are lay beliefs emanating from such theories positive for the individual who holds them, and/or for the women (and men) they target?

It has been argued that regardless of content, essentialist beliefs may be typically problematic. Bohan (1993), for example, contends that because essentialist beliefs about gender homogenize women and fail to account for individual or cultural differences, they are inherently problematic. She also notes that the "female" attributes prized by cultural or difference feminisms are frequently deferent, and undervalued in a heteropatriarchal culture. Particularizing such traits to women obscures the role of oppression in fostering those traits, thereby allowing it to perpetuate:

> If women's relationality is a product of oppression…then when we cherish our
>
> relationality, are we legitimizing the oppression that created it? This question has
>
> frightening political implications. If the oppressed can be led to value their own

oppression, then liberation becomes impossible (p. 9).

Many others have likewise argued that essentialist beliefs about social groups frequently are used to support existing inequalities based on sociodemographic characteristics such as race or gender, where membership in the dominant group is viewed as inherently conferring preferable skills or qualities (Haslam & Levy, 2007; Mahalingam & Rodriguez, 2003). Others still have expressed concern that endorsement of essentialist beliefs may be linked to motivational helplessness, and moreover could actually reflect faulty reasoning skills, and as such merit examination and potential intervention (Heyman & Giles, 2006). Little empirical work has investigated any of these claims, though some have been theoretically well articulated.

Conversely, essentialist beliefs may be associated with positive outcomes. Heyman and Giles (2006) cite empirical research suggesting that essentialist attributions can be helpful to individuals diagnosed with Asperger's syndrome, in that organic explanations appear to relieve self-blame. Wren (2002) found that parents of transgender adolescents who believed in biological causation of transgenderism held more benign attitudes toward their children. Even in cases where the specific details of an attribution are difficult for an individual to comprehend, it may still provide, to borrow a term from Medin and Ortony (1989), an "essence placeholder" serving a positive purpose. Additionally, it is important to note that essentialist beliefs recently have been used in policy and advocacy work to advance the right of groups for whom an essentialized identity—particularly a biologically based one, if it can be established—may translate into civil protections (Fassinger & Arseneau, 2007; Haslam, Bastian, Bain, & Kashima, 2006; Jayaratne et al., 2006). This is a dramatic shift from prior efforts to legalize

discrimination based on the presumed or "proven" genetic inferiority of some social groups. Much current sexual orientation advocacy, for example, posits that sexuality is an inborn trait that individuals cannot freely choose; as such, sexual minority people should be granted the same protections afforded to racial and ethnic minority people as a "protected class" under the law (e.g., Human Rights Campaign, 2006).

In light of the opposing views on the relative harm or benefit (and to whom) of essentialist beliefs, further study of such beliefs may provide needed contribution to the understanding of the type of influence they exert and potential circumstantial or category-based variation. This understanding may in turn inform educational or clinical interventions designed to address cross-cultural interactions, attitudes and behaviors toward out-group members, and potentially even the individual's sense of personal limitations or opportunities based on social group membership. Furthermore, given the high legal and political stakes sometimes associated with beliefs about social groups, Jayaratne et al. (2006) suggest that for researchers, there is an "urgent need to take into account how [essentialist beliefs] function in social reality" (p. 80).

Empirical Study of Essentialist Beliefs

As noted previously, psychological essentialism (hereafter simply "essentialism") and its relationship to social identities is a young but growing area of study, and the existing scholarship has been conducted in a variety of disciplines from a host of standpoints. As a result, consensus has not been reached about the specific components of essentialist beliefs, nor is there a shared vocabulary for describing these components. Nevertheless, at least one study (Haslam, Rothschild, & Ernst, 2000) sought to investigate essentialist beliefs specifically using the domain areas articulated by Yzerbyt

and colleagues (1997; i.e., discreteness, uniformity, informativeness, naturalness, immutability, stability, inherence, necessity, exclusivity). In this study, the researchers created a general measure of essentialist beliefs about social categories based on these nine qualities. The resulting measure was administered to 40 undergraduate students. Half of the participants were asked to rate 20 social groups, each representing a different identity category (e.g., "Asians," representing ethnic groups; "Catholics," representing religions; "doctors," representing professions) on each of the nine domains, the other half were asked to rate 20 different social groups from the same identity categories (e.g., "Hispanics," "Jews," "blue-collar workers"). Each domain was defined by the researchers and then presented on a 9-point bipolar scale; for example, students read the definition of "uniformity" and then ranked each group on a scale from "diverse, differing" to "uniform, similar." Participants were also asked to rate each social identity on how favorably regarded it is by the general public on a 10-point scale from "low" to "high." Factor analysis of the essentialist beliefs measure created by the researchers suggested that the nine essentialist domains were best described as two factors. The first, comprised of discreteness, naturalness, immutability, stability, and necessity, was named "natural kinds" by the researchers; this factor encompassed essentialist beliefs that most closely related to biological lay theories. The second factor, "entitativity," consisted of uniformity, informativeness, inherence, and exclusivity, beliefs associated with group homogeneity and coherence.

Of the social categories and identities rated, genders, races, and ethnicities had the highest "natural kind" ratings, suggesting they were most viewed as biologically based. The categories and identities rated highest on entitativity were homosexuals, Jews, AIDS

patients, and political groups, suggesting a perceived homogeneity of group members. A significant statistical interaction also was observed such that social identities that were rated high on natural kindness and low on entitativity were perceived as being more socially favored than groups that were rated high on natural kindness *and* entitativity. The authors note that "[c]onsequently, categories that are relatively essentialized on both dimensions—exemplified by the disabilities, ethnic groups, Jews, women, blacks, and AIDS patients—tend to be especially stigmatized (p. 123)."

The two factors observed in the research conducted by Haslam, Rothschild, and Ernst (2000)—natural kinds and entitativity—have been supported by further research investigating essentialist beliefs about specific social groups, including women, African Americans, gay men, and individuals with mental disorders (e.g., Haslam, Rothschild, & Ernst; Haslam & Ernst, 2002). Demoulin, Leyens, and Yzerbyt (2006) further replicated the two-factor structure in their study of twenty-four social groups. While previous work had not addressed why some social groups were seen as predominantly natural and others as predominantly entitative, the authors postulated that the differences may be in perception of whether membership in the given category was "forced" or "chosen." They hypothesized that forced social categories (FSC) would be rated highly natural but moderately entitative, whereas chosen social categories would be rated highly entitative but moderately natural. This consideration marks a notable departure from a strict interpretation of essentialism as related to social categories. Because essentialism was originally defined as the belief in a fundamental and inherent essence driving category membership, the idea that membership in a category can be chosen could be interpreted as being representing a *lack* of endorsement of the essential nature of the category. In

other words, it is possible that the entitativity factor may capture beliefs that are in fact non-essential. However, the researchers did not comment explicitly on this possibility.

In this study, thirty individuals (a Belgian community-based sample) completed a measure compiled by the researches wherein they were asked to rate 24 social categories (12 likely to be seen as forced social categories, 12 likely to be seen as chosen social categories) on 14 dimensions of essentialism. As predicted, results suggested a main effect for essentialism factor (natural kind vs. entitative) and group type (FSC vs. CSC), as well as an interaction effect such that FSC groups were higher on natural kindness and lower on entitativity than CSC groups and vice-versa. These results provide further support to the argument that essentialist beliefs, while comprised of multiple domains, fundamentally fall along two dimensions: natural kinds and entitativity. Furthermore, groups into which an individual is perceived as being born ("forced social groups") are seen as being higher on features consistent with natural kinds, such as a biological basis and immutability. Groups in which a person may choose membership ("chosen social groups") are perceived to be higher on features related entitativity, such as homogeneity of members and informativeness. Regrettably, sexual orientation was not among the categories investigated in this study. It certainly would be possible, based on the current empirical and theoretical literature on sexual orientation and gender identity, to build an argument in favor of either a "forced" or a "chosen" view of these particular social identities.

A small number of empirical studies were located that directly explored essentialist beliefs about sexual orientation. In the first of these, Hegarty and Pratto (2001) sought to assess essentialist beliefs about sexual orientation and their potential

relationship to anti-gay attitudes. A sample of 116 heterosexual college students completed a measure of essentialist beliefs created by the researchers for the study, as well as Herek's (1994) Attitudes Toward Lesbians and Gay Men (ATLG) scale, a 10-item measure on a 9-point scale (where low scores are indicative of tolerance and high scores indicate condemnation). The essentialist belief measure was a 9-item measure tapping four domains: early determinacy (the belief that sexual orientation is determined early in the life-span); essential identity (the belief that sexual orientation is a basic organizing principle of individual psychology); adult fixity (the belief that sexual orientation is fixed once it emerges); and homosexual/heterosexual binary (the belief that people can be divided into two categories based on sexual orientation). On the whole, the language used in the belief scale items addressed sexual orientation broadly rather than homosexuality exclusively, as evidenced by the item, "Sexual orientation is caused by biological factors such as genes and hormones." Two of the items addressed same-sex orientations only; for example, "In all cultures there are people who consider themselves homosexual." One item in the measure specifically referenced bisexuality, "Bisexual people are fooling themselves and should make up their minds." While the authors did not address these language choices expressly, it would appear that the items that were less "neutral" (i.e., focused on sexual minority people specifically rather than all sexual orientations generally) may have been difficult to construct in comprehensible manner that included heterosexuality. For example, it would make little sense to incorporate an item that read, "People of all sexual orientations are fooling themselves and should make up their minds." However, the lack of parallelism in the scale items is notable.

Results revealed two factors in the essentialist belief scale, "immutability"

(consisting of items developed to assess early determinacy and adult fixity) and "fundamentality" (essential identity and homosexual/heterosexual binary items). These factors appeared in many ways to be similar to the "natural kinds" and "entitativity" factors, respectively, obtained in several studies by Haslam and colleagues. The authors further found a significant negative correlation between the two essentialism factors; endorsement of one type of essentialist belief co-occurred with a rejection of the other. Notably, immutability beliefs were negatively correlated with Attitudes Toward Lesbians and Gay Men scores, whereas fundamentality beliefs were positively correlated with ATLG scores. Thus, individuals who perceived sexual orientation to be developed early and fixed across the lifespan indicated greater tolerance of gay men and lesbians, while participants who believed that sexual orientation is a significant and distinguishing aspect of individual identity endorsed attitudes that were more homonegative. The authors interpreted this finding as consistent with popular discussion and emerging evidence suggesting that people who believe homosexuality is inborn hold more benign attitudes than those who believe sexual orientation is a choice or under the control of the individual.

A second study that specifically considered essentialist beliefs about sexual orientation was a focused examination of genetic lay theories (Jayaratne et al., 2006). The researchers investigated the extent to which participants held the belief that genes influence traits, at least partially, in lesbians and gay men, as well as in Blacks. The authors hypothesized that genetic lay theories about Blacks would be associated with negative attitudes, whereas genetic lay theories about gay men and lesbians would be associated with more positive attitudes. In support of their hypotheses, they noted the

different social discourses involving genetic lay theories for these two groups: historically, genes have been cited to reify the supposed racial inferiority of Black Americans, while biological predisposition to homosexuality has been associated with tolerance of sexual minorities. For the purposes of this review, results pertinent to lesbians and gay men (LGs) will be discussed.

A total of 600 White American adults were interviewed by telephone; the protocol included four questions about the influence of genes for Blacks and two questions assessed the role of genes for LGs (i.e., whether the respondent believed genes contributed to differences between heterosexuals and homosexuals, and if so, to what extent). Attitudes toward Blacks and LGs were also assessed through four questions each, created by the researchers (e.g., level of agreement with the statement, "marriage between homosexuals should be illegal.") A sizeable minority of participants endorsed some genetic basis for sexual orientation; furthermore, genetic lay theories were significantly predictive of less discriminatory attitudes toward LGs over and above demographic features of the participants (demographics alone accounted for 31% of the variance, the addition of genetic beliefs accounted for a total 35%). Men, and respondents who were older, more politically conservative, and more religious held greater discriminatory attitudes toward LGs than participants who were female, younger, more liberal, and less religious, respectively. Notably, the researchers specifically dismissed individuals from study who were not White, due to its partial focus on racial prejudice. However, the researchers apparently collected no sexual orientation data from participants, and failed to account for the potential influence of sexual minority participants' data in analysis or discussion.

Haslam and Levy (2007) conducted three studies investigating the level of endorsement of essentialist beliefs about sexual orientation, the factor structure of these beliefs, and the relationship between these beliefs and attitudes toward lesbians and gay men. In the first study, which focused specifically on gay men, a sample of college students completed a researcher-designed 7-item measure of essentialist beliefs on a 6-point scale. An exploratory factor analysis revealed a 3-factor structure. For the second study, items were altered to focus on lesbians, and were administered to a sample of college students along with Herek's (1994) Attitudes Toward Lesbians and Gay Men scale. Confirmatory factor analysis of the essentialist belief measure supported the 3-factor structure found in study 1. These were labeled immutability, universality, and discreteness. Immutability items reflected a belief that sexual orientation is biologically based and fixed early in life, similar to the immutability factor found in previous research on homosexuality (Hegarty & Pratto, 2001). Discreteness items reflected belief in a defining characteristics and a sexual orientation binary, similar to Hegarty and Pratto's (2001) fundamentality factor. The third factor, universality, was comprised of items suggesting a belief that homosexuality is culturally and historically invariant; no similar factor had been obtained in prior research on homosexuality or other social categories. The immutability and universality factors were correlated with positive attitudes toward LGs, whereas the discreteness factor was correlated with negative attitudes toward LGs. However, the authors acknowledged that the measure had too few items to reliably support claims of a 3-factor structure. The third study was conducted with a community sample and included an expanded 15-item measure of essentialist beliefs about sexual orientation generally (with some exceptions for clarity as in Hegarty and Pratto [2001]);

this was administered with measures of right-wing authoritarianism, social dominance orientation, and political conservatism. Three factors were again obtained: discreteness, immutability, and universality. Regression analysis indicated that the discreteness factor was most predictive of scores on the Attitudes Toward Lesbians and Gay Men scale, followed by right-wing authoritarianism, and then the immutability factor. Thus, essentialist beliefs about sexual orientation make a strong contribution to the prediction of antigay attitudes.

In sum, the extant research on essentialist beliefs about sexual orientation suggests that essentialist beliefs about sexual orientation are significantly related to attitudes toward lesbians and gay men, independent of other individual differences previously associated with stereotyping and prejudice (e.g., social dominance orientation and right-wing authoritarianism). Evidence suggests that beliefs about sexual orientation, like beliefs about many other social categories, may fall on two factors: immutability and entitativity. However, recent studies finding a 3-factor structure make additional investigation of the structure of essentialist beliefs advisable. Researchers have been somewhat successful in assessing beliefs about sexual orientation broadly rather than focusing narrowly on beliefs about lesbians and gay men; this has important implications for assessing the beliefs of sexual minority individuals about sexual orientation, as will be discussed in a later section of this proposal.

Strengths and Weaknesses of Research on Essentialist Beliefs

The emerging scholarship on essentialist beliefs is characterized by both strengths and weaknesses that may inform future work in this area. The multidisciplinary, cross-cultural nature of the research provides a richly varied base of knowledge upon which to

draw. Additionally, a broad range of social categories have been the subject of study, and findings have largely converged on a similar two-factor structure with empirically supported relationship to attitudes and stereotype endorsement. The real-world applicability is high, with potential extension of results to education, advocacy, and eventually, perhaps to therapy.

However, weaknesses in the existing empirical literature on essentialist beliefs also may be noted. For example, quantitative research frequently has utilized small samples of college students that may reflect a restricted range of essentialist beliefs or otherwise limit the generalizability of the findings. Furthermore, new measures typically have been constructed for each study that draw only partially or not at all on prior work. Additionally, the literature to date has focused either on the beliefs of dominant groups about non-dominant groups (e.g., White Americans' beliefs about Black Americans; Jayaratne et al., 2006) or has failed to account for the influence of participant demographics on findings (e.g., Haslam, Rothschild, & Ernst, 2001). In the case of empirical studies investigating sexual orientation beliefs, either the sexual orientation of participants has not been collected or reported, or non-heterosexual participants were dropped from analysis (e.g., Haslam & Levy, 2007; Hegarty & Pratto, 2001; Jayaratne et al., 2006). To date, it appears that no studies examining the essentialist beliefs of non-dominant group members about their own social category have been conducted. More specific to the focus of the current project, no studies were located which investigated the sexual orientation beliefs of lesbian, gay, or bisexual individuals.

Recent empirical work by Kalish (2002) suggests an additional limitation of the literature on essentialist beliefs about social categories. The author notes that the body of

essentialist research tends to position lay individuals as "all-or-nothing" essentialists who invariably treat category membership as absolute. A series of studies conducted by Kalish, as well as some of the studies described in this review (e.g., Haslam, Rothschild, & Ernst, 2000; Hegarty & Pratto, 2004) do not support this assumption. Rather, he suggests that individuals may be "partial essentialists," or exhibit an "essentialism of degree." Overall, participants in Kalish's studies assigned ratings to categories that indicated only a moderate degree of essentialism, and levels of essentialism varied across categories. While these studies examined natural kinds rather than social categories, similar results have been obtained in studies of essentialist beliefs about social groups (Haslam, Bastian, Bain, & Kashima, 2006). It is important to consider the implications of "partial essentialism" for individuals' beliefs about social categories. If beliefs about social categories are not completely accounted for by essentialism, it seems reasonable to presume that there may be other sources of beliefs about social categories. Two such potential sources were considered for the present study.

Alternatives to Essentialist Beliefs About Social Categories

The current project sought to investigate sexual minority beliefs about sexual orientation. The existing literature provided a foundation for an expanded exploration of essentialist beliefs about these social categories. Empirical research (and practical experience) suggests that while essentialism may account for many beliefs about social groups, essentialist constructs may not capture the full spectrum of popular beliefs about sociodemographic categories such as sexual orientation. In other words, it may be possible to hold sexual orientation beliefs that are not constrained by features such as universality, immutability, discreteness, naturalness, or informativeness.

Social constructionism traditionally has been positioned as oppositional to essentialism in the psychological literature. To date, however, it has not been explored as a source of lay beliefs. A brief review of the major themes of social constructionism generally, and specific to discussion of sexual orientation and gender identity, is presented. Following this, the notable absence of personal choice and agency in essentialist and "strong constructionist" paradigms is considered. Beliefs emphasizing individual agency may be situated in a constructivist epistemology that has the potential to further illuminate the diversity of lay beliefs about sexual orientation and gender identity.

Social Constructionism

Haslam, Rothschild, and Ernst (2000) observed that essentialism recently has been of increasing popularity in the social science literature. While some increased attention is due to theoretical and empirical advances in the understanding of essentialist beliefs, the authors also noted that much of the consideration of essentialism is connected to critiques of theories focused on sociodemographic identity or categorization. Essentialist epistemologies have been criticized for claiming or emphasizing that social group distinctions have biological underpinnings, possess sharp boundaries, and are naturally occurring rather than socioculturally shaped; "this critique of essentialist positions is often carried out in the name of social constructivism (Haslam, Rothschild, & Ernst, p. 114)."

As noted previously, the distinction between lay beliefs and psychological theories can be difficult to draw. Essentialist lay beliefs may simultaneously inform and be informed by essentialist epistemologies or disciplines, such as beliefs in a "gay gene;"

likewise, lay beliefs rooted in social constructionism would likely be informed by social constructionist theories. A key difference between essentialism and social constructionism, however, may be their relative popularity or accessibility. While many tenets of essentialism are basic and comprehensible—and in fact essentialism does not require that the lay individual be able to pinpoint an "essence"—tenets of social constructionism may be considerably more abstract. Additionally, the literatures supporting these two systems of ideas likely reflect the epistemological positioning of the theories supporting them (i.e., positivist/post-positivist vs. critical) and are therefore highly uneven. For example, while essentialist beliefs have been the subject of increasing empirical investigation, particularly of a quantitative nature, the social constructionist literature is largely theoretical and interrogative of "mainstream" psychological methods and discussion. Thus, it would be difficult to present a review of the literature on "social constructionist lay beliefs about sexual orientation" here, as such a literature does not exist per se. Rather, significant themes emerging from a review of social constructionist theory are highlighted and their potential translation to lay beliefs is offered. These themes include social constructionism's focus on unrealness, contextuality, fluidity, plurality, and power. While for the purposes of this discussion social constructionism is presented as a singular unified theory, it bears mentioning that many different types of social constructionisms exist and not all social constructionists ascribe to or emphasize each of these themes equally.

Un-"real"-ness. Whereas essentialism posits that social categories are biologically based and difficult to change, social constructionism observes that aspects of "reality," including demographic categories such as sexual orientation and gender, are

socially constituted (Haslam & Levy, 2007). Thus, according to social constructionism, what an individual perceives to be real is actually an account of reality produced collaboratively, particularly through language (Marecek, Crawford, & Popp, 2004). As a result, social categories exist not because of a true underlying essence which gives rise to them, but because linguistic agreements have been organized around those ideas. For example, social constructionism postulates that there is no such thing as "homosexuality" in the absence of conversation about it; likewise, it would be possible to completely reconstruct "sexual orientation" as a category if it were collectively decided that this term referred to something other than the sex of one's intimate partner(s). As but one example, sexual orientation could signify preferences in partner height or weight rather than sex or gender. Furthermore, if no language or social convention had been built around the idea of "sexual orientation," the social category would not exist at all.

Thus, language not only provides an account of how we perceive the world, but precedes and is constitutive of the world itself (DeLamater & Hyde, 1998). Therefore, social constructionist lay beliefs informed by the tenet of "unrealness" are more likely to observe a lack of fundamental significance to social group labels (e.g., "lesbians") and are more likely to focus on the artifice of such terminology. For example, important recent work by Savin-Williams (2005) suggests that today's "new gay teenagers" may frequently eschew self-labeling based on sexual orientation, not out of shame or internalized heterosexism, but because the traditional labels hold little meaning for them.

Contextuality. Following from a rejection of an absolute reality, social constructionism typically foregrounds contextual variables, which may be overlooked or downplayed in essentialist theories. Traits and behaviors are recognized as varying across

settings and interactions rather than possessing a singular underlying reality. Social constructionism argues that essentialist beliefs falsely universalize, and in doing so foster stereotypic thinking. For example, Tavris (1999) notes that there is little evidence to support the belief that women feel more emotion than men; however, social norms related to the expression of emotion serve to support that idea. Lay beliefs informed by social constructionism therefore may move away from generalizations of group members, be more likely to focus on within-group differences (e.g., intersecting sociodemographic variables) than between-group differences, or otherwise attend to the significance of context. Also, because of the possibility of different social agreements and language at the universal and specific group levels (DeLamater & Hyde, 1998), social constructionism allows for the possibility of language conventions within subcommunities that differ from those that exist in the dominant culture. For example, Greene (1997) notes that the labels "gay" and "lesbian" may be perceived as thoroughly informed by White experiences. As a result, it has been suggested that people of color may use different criteria for self-labeling than White people.

Fluidity. Social constructionism helps to break the habit of polarizing opposites, particularly where gender is concerned. Much writing on social constructionism is found in feminist scholarship and therefore is dedicated specifically to examining the way gender has been organized around masculine and feminine "halves." Feminist psychology in particular recognizes all traits and behaviors as universally human, rather than as objectively "masculine" and "feminine." Individuals may manifest different traits or behaviors in different situations, though socialization and oppression work to stunt the development of a full range of ways of being actually required for optimal health (Tavris,

1999). Thus, lay beliefs about gender informed by social constructionism may echo writings that position gender as something one *does* rather than something one *has* (Marecek, Crawford, & Popp, 2004).

The concept of fluidity can be extrapolated fairly easily to sexual orientation beliefs as well. Essentialist belief measures typically have positioned heterosexuality and homosexuality as opposites, with little to no mention of bisexuality or other less traditional sexual minority self-labels (e.g., queer, pansexual; see Fassinger & Arseneau, 2007). Within the sexual orientation literature, there is evidence to suggest that sexual minority individuals, particularly women, may endorse multiple sexual orientation self-labels concurrently (e.g., lesbian *and* bisexual), and that sexuality may be perceived as fluid and changing over time (Rust, 2000). Tavris (1999) nicely captures this distinction made by social constructionism in noting, "essentialism confuses snapshots with blueprints (p. 5)." Thus, while essentialist beliefs focus on the fixity of sexual orientation, social constructionist beliefs are likely to focus on fluidity and discontinuity.

Plurality. Social constructionism takes issue with the very idea that social categorization represents any core aspect of individual identity. Where essentialism locates attributes completely or mostly within the individual, social constructionism often locates that attribute in the social interactions of that individual. For example, Bohan (1993) provides the useful example that an essentialist attribution may be that a given person is "friendly," while a social constructionist attribution might be that a particular conversation that same individual has with another person is "friendly." Strong social constructionism views the individual and social group as indissoluble (Marecek, Crawford, & Popp, 2004). To that end, some social constructionists prefer not to use the

word "self" because they consider it a fallacy.

By extension, social constructionist beliefs about sexual orientation would likely eschew the use of this social identity to provide meaningful information about an individual. If sexual orientation exists outside the self (or if the self does not even exist), then sexual orientation labels would be more appropriately applied to relationships (e.g., "a same-gender partnership") rather than individuals (e.g., "a bisexual man"). This stands in contrast to essentialist beliefs that describe social categories as "informative" about the individual group member.

Focus on power. Significantly, social constructionism attends to issues of power and hierarchy. This emanates from the view that shared constructions frequently become institutionalized to the benefit of some and detriment to others (DeLamater & Hyde, 1998). Thus, social constructionist inquiry about a given construct (e.g., "sexuality"), frequently attends to an articulation of whose accounts are marginalized or subjugated, and whose are dominant, within that literature (Marecek, Crawford, & Popp, 2004). Furthermore, social constructionism focuses on the material differences that often result from these constructed power differentials. For example, Landrine (1998) noted that the cultural constructions of gender perpetuate and validate the existing social hierarchy favoring men; this translates concretely into wage differences between men and women, as but one example.

In contrast with social constructionism, essentialist beliefs conflate social categorization with circumstance, and tend to naturalize historical or social conditions. Mahalingam and Rodriguez (2003) observed that "power differentials and social hierarchy influence our *beliefs* about gender (p.160, emphasis added)," and result in the

attribution of essential psychological characteristics to women, such as nurturing and cooperativeness, that are institutionally devalued and disempowered. Tavris (1999) further cited evidence suggesting that many reported gender differences would all but disappear if relative social power were controlled for; this brings her to observe that purported (and popularly disseminated) "women's ways of knowing" are, in reality, the ways of knowing of the powerless.

Social constructionist beliefs about demographic categories would likely acknowledge that social power is not equally split between groups, nor among group members. Thus, a sexual minority orientation would be recognized as less socially powerful than heterosexuality. Lay social constructionist beliefs might also stipulate intra-group differences in power *within* the LGB community based on sexual orientation (e.g., lesbians have less power than gay men, bisexual men and women have less power than lesbians). As another example, while lay essentialist beliefs might dictate that same-sex couples will less frequently be involved in childrearing because of the biological "incompatibility" of reproduction and homosexuality, social constructionist lay beliefs might interrogate the socially prescribed roles dictating that a child is optimally raised in a two-parent, other-sex household, and the power that this confers upon heterosexuals.

Weak social constructionism as essentialism. A final point to be made about social constructionism relates to the distinction between those who claim that social constructionism is concerned with the social causes of difference ("weak social constructionists;" e.g., cultural or difference feminism) and those who argue that such supposed differences are themselves social constructions ("strong social constructionists"). Many (e.g., Bohan, 1993; DeLamater & Hyde, 1998; Kitzinger, 1995;

Tavris, 1999) have noted that what sometimes passes for social constructionism is actually better understood as a social essentialism. Indeed, Tavris (1999) argues that the primary difference between essentialism and social constructionism is not that essentialists believe the basis of an individual's gender is biological and social constructionists think it is social. Rather, she states that social constructionism contends that "there is no essence of masculinity and femininity" (p. 6). Strong social constructionism re-locates gender outside of the individual altogether and recognizes it as a product of social conventions and agreements that resides in the interactions individuals have with one another. For some, this means gender exists outside the body; others have claimed that social constructionists do not have to "deny that genes, hormones, and brain physiology may have effects on behavior and morphology. However, their interest lies in the accounts that people give about sexual bodies" (Marecek, Crawford, & Popp, 2004, p. 205).

For the purposes of the current project, "weak" social constructionist beliefs were conceptualized as essentialist beliefs. Theories that emphasize rather than diminish differences between groups—even if the differences are claimed to be socially rather than biologically produced—serve to reinforce beliefs that differences are deep-seated, develop early, and give rise to features that are persistent over time. These characteristics are all core features of essentialism.

Finally, Kitzinger (1995) argues that essentialism includes a primary belief that things are knowable; as a result essentialism is easily amenable to the pursuit of scientific evidence against which theories can be judged. The strongest forms of social constructionism defy both of these characteristics. According to these theorists, social

science itself is a construction. Clearly, this is not—and cannot be—the position of the current project. Rather, the present study sought to explore the potential social constructionist beliefs that individuals hold about sexual orientation in a manner equivalent to and methodologically built upon the preexisting exploration of lay essentialist beliefs.

Summary. Social constructionism posits that social categories are, in the words of Hansell (2000), "fictive, contingent, performative" (p. 772). Several social constructionist themes with potential applicability to lay beliefs about sexual orientation and gender identity have been presented in this section. These themes describe the process of creating and reinforcing social groupings as characterized by unrealness, contextuality, fluidity, plurality, and a focus on power.

While social constructionism often has taken essentialism as its subject, it bears noting that the objective here is not to establish that social constructionism is "right" and essentialism is "wrong." Indeed, social constructionism has many of its own criticisms, not the least of which is that social constructionism, in being positioned so frequently and so strongly in opposition to essentialism, runs the risk of becoming established as its opposite pole in a new (essential) dichotomy (Hansell, 2000). Lyddon (1998) further offers an excellent critique that the social constructionist lens is rarely used by social constructionists to deconstruct social constructionism itself, implicitly (or purposefully) affording it a similar "privileged" status to the one it seeks to dismantle in other theories.

The Role of Agency

Essentialism dictates that social categories are natural, fixed, and give rise to important characteristics in individual group members. Social constructionism argues that

social categories are neither real nor individually based and possess no core "essence." While these particular epistemologies allow for an abundance of lay ontological assumptions about social groups, for the purposes of the present study it was important to consider whether other popular beliefs about sexual orientation might exist outside of these two categories.

In public debate about the etiology of homosexuality, there typically have been two predominant viewpoints, often presented as mutually exclusive and oppositional: sexual orientation is either inborn, or it is a choice. Though the political ramifications of both of these views have changed over time, presently, arguments in favor of a biological basis for sexual orientation commonly are advanced by advocates and allies. Conversely, the idea that sexual orientation is an individual choice (possibly reflecting a person's very morality) tends to be claimed by those who would oppose civil rights for—and the "normalizing" of—sexual minority individuals, couples, and families (Jayaratne et al., 2006). Currently, personal choice in sexual orientation frequently is emphasized by organizations created expressly to support an individual's right to choose to be *heterosexual*, such as so-called "ex-gay" groups (for an example, see PATH, "Change is possible"). Thus, the idea that individuals have a choice about sexual orientation group membership could easily be considered a lay belief—and a fairly common one at that— about these social identities.

However, neither essentialist nor social constructionist theories truly account for an agentic lay theory of sexual orientation. Essentialist beliefs would seemingly reject the possibility of choice in social group membership, as membership is driven by a fundamental essence, and therefore would be difficult to change regardless of any

personal preference. Social constructionism does not directly reject the notion of choice in social group membership; however, it typically seeks to deconstruct the legitimacy of the social category itself. Social constructionism locates the origin of sociodemographic groups in social exchange, with only indirect comment on individual capacities for choosing or rejecting membership in these categories. For example, the social constructionist theme of "fluidity" described above allows for discontinuity and multiplicity in sexual orientation endorsement, which appears to leave room for personal choice without explicitly foregrounding the role of agency. Thus, despite the fact that agentic capacity is not well accommodated by essentialism or social constructionism, consideration of the claimed existence of choice was deemed important for this study, given its centrality in popular discussions of sexuality. Were this study to have investigated lay beliefs about a different social grouping with a disparate social discourse (for example, race), attention to agency may not have been as vital. Nevertheless, because the purpose of this project was in part to expand the previous examination of lay beliefs about sexual orientation beyond essentialism, it was determined that agentic beliefs would be incorporated as a third possible type of belief about sexuality.

Beliefs about individual choice in sexual orientation could be construed as positioned within a constructivist epistemology. Though cognitive constructivism was originally presented as a theory of learning and development, more recently, constructivist approaches have been found in the counseling psychology literature, particularly as related to vocational psychology (Fouad, 2007). Constructivism holds that realty is constructed within the mind of the individual; thus, neither is there one objective reality, nor is reality solely a construction based on social agreement (Martin &

Sugarman, 1997). Unlike strong social constructionist readings, constructivist viewpoints specifically center the role of the individual in building her or his own lived experience, and highlight the ongoing possibility of personal agency across one's life. Indeed, just as social constructionism is frequently offered as a response to essentialism, constructivist views defy a strong social constructionist argument that reality exists only as a function of social convention. To this point, Martin and Sugarman noted:

> The power of social and linguistic structures and conventions derives not from their manipulation of passive human organisms, but from their use by human agents who actively adopt and interpret them in light of their own lives and circumstances (p. 376).

Thus, constructivist psychologists focus on a subjective reality that includes social input but foregrounds individual choice, agency, and interpretation.

Likewise, agentic beliefs about sexual orientation may be tied to a social cognitive theory of agency advanced by Bandura (1989; 2001; 2006). According to this theory, human agency consists of four core properties: intentionality, forethought, self-reactiveness, and self-reflectiveness. Intentionality is comprised of a plan of action or strategy for realizing an identified self-interest. Forethought refers to people's ability to anticipate a variety of possible outcomes of prospective actions, and to use these to guide and motivate their efforts. The third agentic property, self-reactiveness, relates to the individual's ability to self-motivate and regulate execution of action plans derived from intentionality and forethought. Finally, self-reflectiveness is a metacognitive process by which individuals use self-awareness to reflect upon their actions, thoughts, intentions, outcomes, and "the meaning of their pursuits" (p. 165). In his description of agentic

capacity, Bandura notes that there is no complete agency; all beings operate in social environments which provide both influences and restraints. However, he also notes that "the capacity to exercise control over the nature and quality of one's life is the essence of humanness" (2001, p. 1). Thus, the author acknowledges the power and import of the social milieu, as do social constructionists, but he argues that these take a back seat to the individual's ability to prefer, plan, choose, and be.

In his articulations of an agentic perspective, Bandura (2006) also attends to what he terms an extensive "genetization" of human behavior, and the increasing pull to reduce all human action to biological predisposition. This is particularly applicable to discussions of sexual orientation and preoccupation with the possibility of a "gay gene." In responding to this tendency toward genetization, he distinguishes between biological determinism and biological potentialism:

> Biological determinists support a conservative view of society that emphasizes the rule of nature, inherent constraints, and limitations. … Biological potentialists…emphasize human possibilities and how to realize them. People have changed little genetically over the past millennium, but they have changed markedly in their beliefs, mores, social and occupational roles, cohabitating arrangements, family practices, and styles of behavior in diverse spheres of life (p. 173).

Thus, an agentic theory of social group membership need not disregard or dismiss the possibility of biological contributions. However, the potentialist nature of the theory foregrounds choice over evolution or genetics, in much the same way that it foregrounds choice over social or environmental influence.

The attention to the role of personal choice in popular discussion of sexual orientation is apparent. The work on essentialist beliefs conducted by Demoulin and colleagues (2006), which examined forced versus chosen social categories, provides further support for the potential significance of choice in discussions of category membership. While the authors framed their research in terms of essentialist theory, it is arguable whether chosen social groups are essential groups, according to the basic tenets of psychological essentialism. Nevertheless, at least one prior study examining beliefs about social groups has considered the contributing effect of perceived choice in category membership, though this study did not consider sexual orientation among its categories. For the purposes of the present study, agentic beliefs about sexual orientation were considered in addition to essentialist and social constructionist beliefs about this sociodemographic category.

<div align="center">*Summary and Statement of the Problem*</div>

Over the past decade, a literature has emerged which focuses on the lay essentialist beliefs that individual adults hold about social groups. Some of the empirical work in this domain has sought to compare the nature and structure of lay essentialist beliefs across social groups; other work has focused exclusively on essentialist beliefs about a single social identity category, as in the case of sexual orientation.

The extant literature provided a solid basis for the continued investigation of essentialist beliefs about sexual orientation. Measures of essentialist beliefs used in previous research have been fairly abbreviated and may not have explored fully the range of theoretical constructs that undergird psychological essentialism. Furthermore, these measures typically have been administered to a heterosexual population, leaving

essentialist beliefs about sexual orientation held by sexual minorities people uninvestigated. The present study was designed to begin addressing the lack of attention to non-dominant group members' lay beliefs in the current essentialist literature.

Additionally, the existing research on lay beliefs about sexual orientation examines essentialist attributions in the absence of any other type of meaning-making, at least explicitly. Though one study (Demoulin et al., 2006) did acknowledge that perceived choice in group membership may lead to different outcomes, the authors failed to comment on whether this may reflect a non-essentialist (or at least, differently essentialist) belief structure. Given popular and sexual minority community-based discussions about the nature of sexual orientation, and the very real consequences that may emanate from advocacy and policy work related to these conversations (i.e., civil rights), the case could be made for studying essentialist beliefs in the presence of other lay theories.

Thus, the present study had as its focus the creation and initial validation of a measure of sexual orientation and beliefs that expands upon prior empirical work in two distinct ways. First, the project identified a population of interest (i.e., the LGB community) that has not been the focus of previous study in this domain. This represented an expansion of the existing literature in that the lay beliefs of sexual minority people had not been a focus of prior study. Moreover, the essentialist literature generally has examined the beliefs of dominant populations much more frequently than non-dominant populations (e.g., White people's beliefs about race). Mahalingam (2003) argued that it is important for research in this domain to study populations that implicitly reject essentialist views through transgression. It was hoped that this study might begin to

move the study of essentialist beliefs in that direction. Furthermore, the current study explored possible sources of lay beliefs not rooted in essentialism that were not (or were not explicitly) examined in the preexisting literature; specifically, beliefs rooted in social constructionism and a focus on individual agentic capacity.

Hypotheses and Research Questions

The preceding review of the literature outlined the existing base of empirical knowledge about lay essentialist beliefs. This growing body of scholarship provided a foundation for the present study. No prior empirical literature existed regarding lay beliefs about social categories that may stem from non-essentialist standpoints, such as beliefs about agency in sexual orientation identification, or beliefs rooted in social constructionism. As such, formal hypotheses were most readily offered for the essentialist beliefs included within this expanded measure, the Sexual Orientation Beliefs Scale (SOBS). The SOBS was conceptualized as a single, unified measure of beliefs about sexual orientation, which was expected to consist of subscales at the level of the factors produced in analysis. Scale scores were expected to be at the level of the subscale. Given the lack of prior empirical research on beliefs about sexual orientation in a sexual minority population, as well as the lack of research on social constructionist and agentic beliefs, it was difficult to reasonably hypothesize patterns of responses on the social constructionist or agentic items included in the new measure. Therefore, the behavior of social constructionist and agentic items within the SOBS was initially the focus of research questions rather than formal hypotheses. However, after extensive conversation with members of the examination committee at the time of the proposal, it was determined that formal hypotheses were more suitable to the present project and thus

additional hypotheses about the non-essentialist belief items were articulated. The hypotheses and research questions that eventually guided the present inquiry are outlined below.

The current study examined the following hypotheses:

Reliability

Hypothesis 1: A Sexual Orientation Beliefs Scale (SOBS) can be created that will produce adequate estimates of internal consistency reliability as measured by Cronbach's alpha at the levels of the individual subscales.

Factor Structure

Hypothesis 2: The SOBS will be a unified but multidimensional measure comprised of essentialist, social constructionist, and agentic beliefs about sexual orientation.

The pre-existing work on essentialist beliefs about social groups has largely supported the idea that such beliefs are comprised of two distinct factors (e.g., Haslam, Bastian, Bain, & Kashima, 2006; Haslam, Rothschild, & Ernst, 2000; Hegarty & Pratto, 2001). Though variously named, these factors share basic features and can be understood as reflecting the domains of natural kindness and entitativity. While a recent study (Haslam & Levy, 2007) did obtain a three-factor structure, this finding represents an anomaly within the literature to date. The present project sought to extend the pre-existing literature and included social constructionist and agentic beliefs. No prior empirical study of such beliefs was located, and as such there was no basis for hypothesizing a factor structure of these beliefs. Thus, it was hypothesized that the SOBS would reveal multiple factors reflecting a unified, multidimensional construct.

Exploratory Research Questions

This study also investigated the following research questions:

Research Question 1: What is the relationship between beliefs about sexual orientation and right-wing authoritarianism?

Right wing authoritarianism, as conceptualized and measured by Altemeyer (2006) in a series of studies spanning over two decades, is a personality style characterized by a high degree of submission to the established authorities in one's society, high levels of aggression in the name of that authority, and a high level of conventionalism. Right wing authoritarianism has been shown to correlate with political conservatism, racial-ethnic prejudice, sexism, heterosexism, and a host of other prejudicial attitudes; essentialist beliefs have likewise been correlated with prejudicial attitudes and stereotype endorsement.

In previous research, conservatism, authoritarianism, and fundamentalism have been demonstrated to correlate (Herek, 1994; Pratto, Sidanius, Stallworth, & Malle, 1994). Furthermore, each of these constructs has been empirically linked to attitudes about homosexuality (Bastian & Haslam, 2006; Pratto et al.). In their study, Bastian and Haslam examined the relationship between essentialist beliefs, several individual difference factors including right-wing authoritarianism, and stereotype endorsement. They found that essentialist beliefs were most predictive of stereotype endorsement. Among the individual difference scales only right-wing authoritarianism independently and significantly made a unique predictive contribution. Given mounting evidence suggesting a relationship between essentialist beliefs and attitudes about social groups (Haslam, Rothschild, & Ernst, 2000), and the well-established connection between RWA

and attitudes about social groups (Altemeyer, 2006), it is important to explore the relationship between this new measure of sexual orientation beliefs and an established measure of authoritarianism.

Research Question 2: What is the relationship between beliefs about sexual orientation and need for cognitive structure?

In a recent study, Bastian and Haslam (2006) found that the level of endorsement of essentialist beliefs (the "essentialist index") was the single largest predictor of endorsement of stereotypes about social groups. Several other individual difference constructs previously hypothesized as relating to stereotyping, including the need for cognitive closure, did not add any predictive power over and above essentialism; however, results of the relationship between essentialist beliefs and need for cognitive closure in this study were unreported. The need for structure has been argued to be conceptually undistinguishable from the need for closure (Neuberg, Judice, & West, 1997). The need for structure, measured by the Personal Need for Structure scale (PNS; Thompson, Naccarato, & Parker, 1989), has been defined by Neuberg and Newsom (1993) as an individual's use of abstract and overgeneralized representations, such as stereotypes, as a way of managing cognitive load. Because the need for structure thereby focuses on an individual's propensity toward attending to the information in an efficient and simplified manner, it would seem to be similar in function to adherence to essentialist beliefs, which provide clear-cut and cognitively simple ontological explanations for social groups. Social constructionism, on the other hand, is a collection of arguably abstract themes that challenge representations of what is "real" (DeLamater & Hyde, 1998). Social constructionist themes tend to be expansive rather than reductive, and work

against efforts to reduce cognitive load by stereotyping. In other words, it is argued here that essentialist beliefs may tend toward simple or stereotypic, while social constructionist beliefs may tend to be higher in cognitive complexity. Thus, the relationship between beliefs about sexual orientation and the need for structure are the focus of a research question in the present study.

Research Question 3: What is the relationship between beliefs about sexual orientation and collective self esteem?

Prior research on essentialist beliefs about sexual orientation has found that these beliefs are predictive of attitudes toward lesbians and gay men (Haslam & Levy, 2007). Specifically, high levels of endorsement of immutability beliefs (e.g., a biological basis of sexuality) have been found to be associated with more positive attitudes toward gay men and lesbians, whereas high levels of endorsement of entitativity beliefs have been found to be associated with more negative attitudes about gay men and lesbians. One of the instruments most frequently used to assess heterosexuals' attitudes about sexual minority people is Herek's (1994) Attitudes Toward Lesbians and Gay Men (ATLG) scale (Worthington, Dillon, & Becker-Shutte, 2005). Review of this instrument reveals that it may not be appropriate for use with a non-heterosexual sample population, as many of the items convey an explicit or implicit out-group orientation. For example, there may be a restricted range of responses to the item "lesbians are sick" among LGBT respondents. Thus, the utility of this measure is potentially diminished in the present study. Furthermore, recognizing that research is an intervention in participants' lives, it is crucial to consider the potential impact upon respondents of a measure containing multiple, overtly homonegative items such as "male homosexuality is a perversion."

Nevertheless, the prior research on essentialist beliefs establishes a significant and compelling link between beliefs about social categories and attitudes. The current project, however, required a measure that would effectively assess introjected attitudes, that is, attitudes that sexual minority individuals hold about sexual minority people, identities, and communities. Luhtanen and Crocker's (1992) Collective Self-Esteem Scale (CSES) has been utilized with a variety of populations, including minority populations, to assess such attitudes (Utsey & Constantine, 2006). Thus, relationships between the SOBS and the CSES were explored in the present study.

Research Question 4: What is the relationship between demographic variables of participants and scores in the SOBS?

CHAPTER 3

Methodology

The present study drew from prior empirical and theoretical work on essentialist beliefs about social groups in order to create an expanded measure of lay beliefs about sexual orientation, while also integrating additional key concepts from the theoretical work on social constructionism as well as popular attention to individual choice. The project was further designed to examine these beliefs in a sample of sexual minority people, as previous work on beliefs about social groups has tended to rather narrowly address majority group members' beliefs about non-dominant groups. In this chapter, information on participants and procedures from the current study is provided. This information is offered in two parts. The first section details the procedures, including a pilot study, utilized in development of the scale that was tested in the main study. The second section outlines the main study itself, in which hypotheses were tested and research questions were explored.

Part I: Initial Scale Development

The first phase of this project involved the design of a prospective measure of sexual orientation beliefs. Best practices in and recommendations for scale development in counseling psychology (e.g., Dawis, 1987; Worthington & Whittaker, 2006) guided this portion of the project.

Preliminary Item Construction

A research team of eight graduate students conducting sexual minority research and conversant in issues related to the psychology of sexuality participated in the initial item construction process intended to form the foundation of a Sexual Orientation Beliefs

Scale (SOBS). Several members of the team additionally were versed in other topics of

relevance to the current project, such as cultural studies, survey design, religious studies,

and policy/advocacy. Team members were diverse in terms of their own sexual

orientation self-labeling, and collectively represented lesbian, gay, bisexual, queer, and

straight identifications.

For the first phase of item generation, team members were asked to brainstorm

individual lists of "beliefs about sexual orientation" that they or others may hold. These

individual lists of beliefs were then discussed as a group and a master list was prepared.

Redundant items were deleted and supplemental items that emerged through discussion

were added. Subsequently, team members were informed of the major themes described

in the preceding review of the literature which were identified as being of particular

relevance to the present study. Specifically, the themes presented to the research team

included: the essentialist domains of discreteness, uniformity, informativeness,

naturalness, immutability, stability, inherence, necessity, and exclusivity; the social

constructionist domains labeled by this investigator as unrealness, contextuality, fluidity,

plurality, and focus on power; and the domain of individual agency, characterized by

personal choice and self-construction. Team members were asked to generate any

additional beliefs they or others might hold about sexual orientation that were rooted in

these themes. Approximately twenty beliefs were articulated through this team process.

In the second phase of item generation, this researcher re-wrote the beliefs

produced by the research team as prospective items on a fully-anchored, 5-point, Likert-

type scale ranging from "*1 = strongly disagree*" to "*5 = strongly agree*" (following

Haslam & Levy, 2007). Additional items were subsequently generated in order to attempt

to ensure that each domain area of the construct was fully tapped, consistent with recommendations for maximizing content validity (Hoyt, Warbasse, & Chu, 2006). Finally, relevant items utilized in previous measures of essentialist beliefs were reviewed for potential applicability to the present measure (see Appendix A). Some of these formed the basis for new potential items for the SOBS, after being revised for clarity and content. A total of 84 items were produced through this process for expert review (see Appendix B for the initial pool of items provided to experts).

Subsequently, three advanced graduate students in counseling/clinical psychology and two counseling psychologists known to the researcher with knowledge of sexual minority issues were solicited to serve as expert auditors of these initial items. These experts were all female, heterosexual or straight identified, and White/Caucasian. The experts were charged with two primary tasks. First, they were asked to review the pool of items for maximally inclusive language, clarity, and phrasing. Secondly, experts were asked to consider whether the individual items reflected the intended domain areas (e.g., inherence, focused on power, agency) based on brief definitions of these terms synthesized from the preceding review of the literature and provided to them. Consistent with the recommendations for scale development, reviewers were also invited to submit additional items reflecting beliefs about sexual orientation that they thought were not well reflected in the pool of prospective items in order to improve construct validity (Anastasi, 1998). Reviewers provided extensive feedback which was subsequently integrated by this researcher with the assistance of the faculty advisor. Items which were deemed by the experts to be confusing or unclear, double-barreled, or unrepresentative of the appropriate domain were altered or omitted. Suggestions for new items were also taken into account.

The expert vetting process ultimately yielded a total of 91 items assessing beliefs about sexual orientation for the pilot study (see Appendix C for the list of piloted items).

Pilot Study

Prior to formal data collection, a small pilot study ($N = 17$) was conducted. A pilot measure consisting of the 91 prospective items arranged in random order was administered to participants via a secured Internet site (i.e., *SurveyMonkey*). Pilot participants included sexual minority individuals known to the researcher who were solicited by email for the purpose of the pilot study. In order to both increase the number of pilot participants and to decrease the likelihood that participants would be easily identifiable based on their responses, solicited individuals were asked to share the pilot invitation with one other sexual minority person known to them. The pilot study consisted of the demographic questionnaire planned for use for in the main study (see Appendix D), the pilot version of the Sexual Orientation Beliefs Scale, and the measures planned for use in the main study for establishing concurrent, discriminant, and predictive validity (i.e., Personal Need for Structure scale; Right Wing Authoritarianism scale, and the Collective Self Esteem Scale). These latter validity measures were included in the pilot simply to gauge the amount of time required to complete the survey in its entirety, and pilot participants were asked to track the amount of time required to complete various sections of the survey. This information would later be used to determine whether retaining all of the prospective measures would be feasible in the main study. Pilot participants were also provided an opportunity at the end of the measure to offer feedback to this researcher about any and all parts of the survey.

Pilot participants included 11 women and 6 men, none of whom identified as

transgender. Participants ranged in age from 22 to 56 ($\bar{x}$ = 32.4, *sd* = 8.5). Four pilot

participants (three women and one man) identified as bisexual, three men identified as

gay, seven women identified as lesbians, one man identified as queer, and two individuals

(one woman and one man) identified as "other" (i.e., "queer hetero" and "mostly

hetero"). Thirteen participants identified as White/Caucasian, three participants identified

as Hispanic/Latino/Chicano and one participant identified as East Asian American. Pilot

participants on the whole were highly educated, with five individuals reporting their

highest level of education as a doctoral degree, five reporting a master's degree, one

reporting some graduate/professional schooling, one reporting a bachelor's degree, and

one reporting some undergraduate schooling. Pilot participants were predominantly urban

(*n* = 10), with six living in a suburban area and one living in a rural area. These

individuals lived in the Southeast (*n* = 7), Northeast (*n* = 5), Midwest (*n* = 4) and West

(*n* = 1) of the United States. Respondents reported their self perceived socioeconomic

status using a variation on the MacArthur Subjective Status Scale (SSS; Adler, Epel,

Castellazzo, & Ickovics, 2000). The SSS allows participants to rank their relative social

status on a 10-point scale where "*1 = lowest*" and "*10 = highest.*" Members of this study

sample reported social status ranging from 4 to 10 ($\bar{x}$ = 6.6, *sd* = 1.6).

Based on a review of the responses obtained in the pilot study (e.g., mean scores,

score ranges, and standard deviations), as well as feedback offered by pilot participants,

the final items for inclusion in the validation study of the Sexual Orientation Beliefs scale

were selected. One of the most significant decisions that emerged as a result of the pilot

study was to change the wording of items so that all items in the prospective scale were

positively valenced. This decision was made for multiple reasons. The first is that

feedback suggested that in some places the prospective measure felt highly redundant. When this was explored more specifically, it was noted that some statements written as positive items for one category were similar to reverse-coded items in other categories. For example, the pilot items "Sexual orientation can change over time" and "A person's sexual orientation cannot change" were originally written to address two separate constructs (i.e., social constructionist fluidity and essentialist immutability, respectively). However, in reviewing the scoring of the pilot data, it became clear that it could equally be argued that these items should be treated as inversely coded items tapping the same construct. Rather than make presumptive assumptions about the actual relationship between these constructs, such as that they represent oppositional beliefs, it was determined that using positively valenced items only in the main study would better allow such relationships to emerge during data analysis. Thus, items were altered following the pilot study so that high levels of endorsement of an item in the main study would uniformly reflect high levels of endorsement of the related construct. Therefore, level of agreement with the item, "A person's sexual orientation cannot change" would be scored as endorsement of immutability. No reverse coded items were used in the main study. As a result of this decision, statistical analyses on pilot data were confined to the descriptive statistics already noted.

Additionally, based on feedback from pilot participants, this researcher and the faculty advisor engaged in a conversation about some items that could be construed as highly negative by participants in the main study. Because this researcher subscribes to a belief that research is an intervention (Ponterotto, 2005), prospective items that could be viewed as reinforcing of negative stereotypes or otherwise assaultive of participants'

sexual minority identities were closely examined and either revised or discarded. For example, the pilot item, "Particularly difficult or traumatic experiences may cause a change in an individual's sexual orientation," while potentially reflective of commonly held beliefs, is deeply rooted in a problematic homonegativity that links same-gender attraction to unhealthy situations or abnormal development. It was determined that items reinforcing of historically harmful belief structures, while perhaps consistent with the letter of this project, were not in keeping with the spirit of the study as envisioned by this researcher and the faculty advisor. As a result of the pilot testing, the number of items in the emerging Sexual Orientation Belief Scale was reduced by 20, from 91 to 71 items.

Finally, pilot data suggested that the amount of time required for completion of the full survey ranged from 12 minutes to 45 minutes ($\bar{x}$ = 27.7, *sd* = 11.1). One participant provided feedback that her time of 45 minutes was partially due to a reading disability, and she cautioned the researchers not to "be alarmed" by this amount of time, as she typically plans for extra time in tasks such as these. It was determined that the time required to complete the series of measures was not unreasonable, and also would be reduced slightly by the deletion of 20 items on the prospective measure. Thus, the decision was made to retain all measures planned for use in exploring the validity of the SOBS.

Part II: Hypothesis Testing and Exploration of Research Questions

This section outlines the procedures utilized in the main study, as well as instrumentation and analyses conducted. It further describes the sample of individuals who served as participants in this study.

Participants

Participants in this study were sexual minority adults; that is, individuals who self-identify as same-gender attracted or oriented (e.g., lesbians, gay men, bisexual men and women) who may or may not also be gender nonconforming (e.g., transsexual, transgender). While an attraction to or orientation toward same-gender individuals was listed as a criterion for participation in the study, individuals whose sexual orientation self-labeling may have been other than lesbian, gay or bisexual—for example, individuals who self-identify as pansexual, queer, bi-curious, or questioning—were explicitly recruited and included in the pool of participants.

A total of 804 individuals consented to participate in the survey. Respondents who failed to complete at least 75% of the total survey (i.e., demographics form, prospective Sexual Orientation Beliefs Scale, and the validity measures) were removed from the sample ($N =151$, or 18.8% of initial participant pool), yielding 653 data sets for analysis.

Given the large number of participants who responded to the study and met criteria for inclusion, the feasibility of splitting the data set was considered. Recommendations for determining the minimum sample size necessary for exploratory factor analysis (EFA) vary. One common guideline suggests that absolute sample size of 300 or more is typically sufficient for EFA (Costello & Osborne, 2005). Another frequently cited rule suggests that a 5:1 participant-item ratio represents a sufficient sample size for EFA (Tabachnick & Fidell, 2001), which in the case of this preliminary measure consisting of 71 items, would suggest a minimum sample size of 355 participants. Interestingly, however, in their recent content analysis of scale development

studies appearing in the *Journal of Counseling Psychology*, Worthington and Whittaker

(2006) found participant-item ratios varying from 2:1 to 35:1, with a modal ratio of 3:1.

Tinsley and Tinsley (1987) suggested that the participant-item ratio becomes less

essential with increasing sample sizes, and noted that the ratio guidelines become less

essential in samples larger than 300. Thus, the decision was made to randomly split the

data set into two portions, expecting that half of the collected data would provide an

adequate pool for EFA and other anticipated analyses. The first portion of the data set (*N*

= 332) was utilized for the EFA and all other analyses conducted in the present

investigation (henceforth referred to as the study sample). This sample size was in excess

of the generally suggested 300 participants and approached a 5:1 participant-item ratio

(specifically, it represented a 4.5:1 ratio). The remaining portion of the dataset (*N* = 321)

was reserved for further work on this instrument in the future. Unless otherwise noted, all

percentages provided in the description of participants below refer back to the total study

sample of 332 individuals.

Demographics of the study sample are provided in Table 1. Of the 322

participants, 200 (60.2%) indicated they were born female or assigned female gender at

birth, and 132 (39.8%) indicated they were born male or assigned male gender at birth.

Twenty-six individuals (7.8%) indicated that they were transgender or presently living a

gender other than the one assigned at birth. Of these participants, 19 (5.7%) were

genetically female and seven (2.1%) were genetically male. Transgender or gender

nontraditional participants were provided the opportunity to self-label their gender

identity in the study; the 16 individual responses given varied greatly, with

"genderqueer" being the most popular and representing 7 participants (2.1% of the study

sample). While these data are challenging to report in a manner that is simultaneously accurate and concise, they reveal how many individuals may be inaccurately or incompletely labeled using the more traditional method of indicating gender on a demographic form (e.g., 1 = male, 2 = female).

Table 1

Demographic Characteristics of Study Sample (N = 332)

Characteristic	n	$\%$
Gender assigned at birth		
Female	200	60.2
Transgender	*19*	*5.7*
Non-transgender	*181*	*56.2*
Male	132	39.8
Transgender	*7*	*2.1*
Non-transgender	*125*	*37.7*
Sexual orientation		
Bisexual	55	16.6
Gay	113	34.0
Lesbian	104	31.3
Queer	43	13.0
Questioning/Uncertain	7	2.1
Other	10	3.0

Age

18-24	100	30.1
25-34	91	27.4
35-44	53	16.0
45-54	43	13.0
55-64	33	9.9
65-74	12	3.6

Race

African American/Black	15	4.5
East/South Asian American	11	3.3
American Indian/Native American	3	0.9
Biracial/Multiracial	12	3.6
Hispanic/Latino	21	6.3
White/Caucasian	252	78.9
Other/Refused	8	2.4

Highest education level

High school/GED	5	1.5
Some college	70	21.1
Associate or technical degree	10	3.0
Undergraduate degree	54	16.3
Some graduate/professional school	30	9.0
Master's degree	88	26.5
Doctoral degree	74	22.3

Geographic location

Rural area	33	9.9
Suburban area	112	3.7
Urban area	179	53.9
Other	8	2.4

Region

Canada	4	1.2
Puerto Rico	1	0.3
United States:		
Midwest	100	30.1
Northeast	85	25.6
Southeast	80	24.1
Southwest	16	4.8
West	46	13.9

Subjective social status (lowest to highest)

1	1	0.3
2	1	0.3
3	13	3.9
4	29	8.7
5	56	16.9
6	65	19.6
7	85	25.6
8	62	18.7

9	17	5.1
10	3	0.9

Likewise, sexual orientation data provided by this sample were both rich and complex. Respondents were asked to choose one sexual orientation label from a list of 6 options consisting of bisexual, gay, lesbian, queer, questioning/uncertain, and other. Individuals who selected "other" had the opportunity to type in their own label. (Participants were also invited to separately indicate the word(s) they typically use to self-label their sexuality; however, responses to that item were not analyzed for the present study and are beyond the scope of this discussion). As but one example of the within-group differences in sexual orientation, endorsement of the label "bisexual" will be considered in detail. A total of 55 participants in the study sample (16.6%) selected the label bisexual. Of these, three people (0.9%) were genetically male and transgender or gender nontraditional. No genetically female transgender (e.g., FTM) individuals endorsed this label. Eleven (3.3%) bisexual respondents were non-transgender men, and 41 bisexual respondents (12.3%) were non-transgender women. These data are more precise in that they consider the intersection of sexual orientation and gender identity, but it should be noted that they do not describe other within group variations among bisexual participants based on, for example, age or race. This reflects standard issues of balancing parsimony with specificity in reporting. Thus, participant data for the remaining sexual orientation labels is provided solely at the group level. One hundred thirteen participants in the study sample (34.0%) were gay, 104 participants (31.3%) were lesbian, 43 participants (13.0%) identified as queer, seven (2.1%) were questioning/uncertain, and

ten individuals (3.0%) listed their sexual orientation as "other."

Participants ranged in age from 18 to 74 ($\bar{x}$ = 35.1, *sd* = 14.1). Almost a third (*n* = 100, 30.1%) of the participants were aged 18-24. Proportion of participants decreased progressively in ascending age groups: 91 respondents (27.4%) were aged 25-34; 53 (16.0%) were aged 35-44; 43 (13.0%) were aged 45-54; 33 (9.9%) were aged 55-64; and 12 (3.6%) were aged 65-74. The majority of participants in the study sample (*n* = 252, 78.9%) identified as White/Caucasian, 21 (6.3%) were Latino/a, 15 (4.5%) identified as African American/Black, 11 (3.3%) were East or South Asian American, three (.9%) identified as American Indian/Native American, 12 (3.6%) were biracial or multiracial, and eight (2.4%) described their race/ethnicity as "other" or did not identify their race/ethnicity. In terms of educational attainment, five study participants (1.5%) had a high school degree/GED, 70 (21.1%) participants had completed some college, 10 (3.0%) had completed an associate or technical degree, 54 (16.3%) had a bachelor's degree, 30 (9.0%) had completed some graduate or professional schooling, 88 (26.5%) had a master's degree, and 74 (22.3%) had a doctoral degree.

Just over half of the participants in the study sample (*n* = 179, 53.9%) lived in urban areas, 112 (33.7%) lived in suburban areas, 33 (9.9%) lived in rural areas, and 8 participants (2.4%) selected "other." Nearly one-third of the respondents in this sample (*n* = 100, 30.1%) were from the Midwestern United States, 25.6% (*n* = 85) were from the Northeastern states, 24.1% (*n* = 80), were from the Southeastern U.S., 13.9% (*n* = 46) were from Western states, and 4.8% (*n* = 16) were from the Southwestern U.S. Four participants (1.2%) were from Canadian provinces, and one respondent (0.3%) was from Puerto Rico. Study participants reported their socioeconomic or social class status using

the modified version of the MacArthur Subjective Status Scale used in the pilot study

(SSS; Adler, Epel, Castellazzo, & Ickovics, 2000) on a 10-point scale where "*1 =*

lowest" and "*10 = highest*." Responses ranged from 1 to 10, with a mean of 6.3 (*sd =*

1.6), and a modal response of seven endorsed by 25.6% of the sample.

Instrumentation

  Demographic questionnaire. All participants were provided a demographic

questionnaire constructed by the researcher for the purposes of this study. Respondents

were asked to indicate the sex assigned to them at birth; the gender identity in which they

presently live; sexual orientation (two means of assessing this were used); age;

race/ethnicity; state and geographical area (i.e., rural, suburban, urban) of residence;

highest level of education completed, and socioeconomic status (see Appendix D).

  Personal Need for Structure scale (PNS; Thompson, Naccarato, & Parker, 1989).

Convergent validity for the Sexual Orientation and Gender Identity Beliefs Scale (SOBS)

would be established by comparison with a measure of need for cognitive structure (see

Appendix E). The PNS is a measure of a person's dispositional motivation to cognitively

structure the surrounding world in simple and unambiguous ways. The PNS is a 12-item

measure loading on two factors: an individual's need to structure the world in simple

ways (four items; e.g., "I find that a consistent routine enables me to enjoy life more"),

and that individual's reactions to a lack of structure (seven items; e.g., "I hate to change

my plans at the last minute"). The measure utilizes a 6–point scale from "*1 = strongly*

disagree" to "*5 = strongly disagree*." High scores indicate greater need for simple

structure. In six initial validation studies conducted by Neuberg and Newsom (1993), the

authors reported alpha coefficients for the total scale ranging from .76 to .86; for the

individual factors, the median alpha value was .77. Test-retest reliability after a 12-week

period was reported as $r = .76$ overall, .84 for factor 1, and .79 for factor 2. The PNS has

been found to be distinct from measures of authoritarianism, dogmatism, intolerance of

ambiguity, and an uncertainty orientation (Neuberg & Newsom, 1993). Furthermore,

there is evidence that scores on the PNS are not influenced by social desirability. In the

present study, an internal reliability coefficient of .85 was obtained for the total scale.

The alpha values for both factor 1 (Desire for Structure) and factor 2 (Response to Lack

of Structure) in the present sample were .78.

Right-Wing Authoritarianism scale (RWA; Altemeyer, 2006)*.* Discriminant

validity for the SOBS scale would be explored by comparison with a measure of right-

wing authoritarianism (see Appendix E). Right-wing authoritarianism was measured by

Altemeyer's RWA scale. This version of the RWA is a recent modification of a scale

originally devised by Altemeyer in 1973 and periodically revised. In the thirty years since

its debut, the RWA scale has been translated into languages other than English (e.g.,

Swedish), modified, updated, and shortened. Recently, Altemeyer (2006) authored a book

about authoritarianism written for a general audience and made the full text available.

The version of the RWA that appears in that text was selected for this study because it

represents a recent revision written in accessible language for an English-speaking

audience.

The version of the RWA used in the present study is comprised of 20 items,

which are rated from "*-4 = very strongly disagree*" to "*4 = very strongly agree*." The

scale is a unidimensional measure of three attitude clusters: authoritarian submission,

authoritarian aggression, and conventionalism. Higher scores indicate higher levels of

authoritarianism. A recent review of 16 studies that employed this version of the RWA

reported alpha ranges from a low of .73 to a high of .93 (Sibley, Robertson, & Wilson,

2006). A sample item from this scale is "obedience is the most important virtue children

should learn." The Right-Wing Authoritarianism scale has been demonstrated to

adequately differentiate from a social dominance orientation and religious

fundamentalism (Altemeyer, 2006; Altemeyer & Hunsberger, 1992). The internal

reliability coefficient for the RWA obtained in this study sample was .88.

Collective Self Esteem Scale (CSES; Luhtanen & Crocker, 1992). Predictive

validity for the SOBS scale would be established using a measure of collective self-

esteem (see Appendix E). The 16-item CSES is comprised of four subscales of four items

each. The Private Collective Self-Esteem subscale assesses the extent to which

individuals feel positively about their social groups; for example, "I am a worthy member

of the group I belong to." The Public Collective Self-Esteem subscale measures the

degree to which individuals believe that others feel positively about their social groups,

as exemplified by the item, "I feel good about the social groups I belong to." The

Membership Collective Self-Esteem subscale assesses the extent to which individuals

believe that they are good members of their social groups (e.g., "I am a cooperative

participant in the social groups I belong to"), and the Importance to Identity Collective

Self-Esteem subscale measures the degree to which individuals believe their social

groups are an important part of their self-concept (e.g., "The social groups I belong to are

an important reflection of who I am"). Factor loadings in a large validation study ranged

from .54 to .83, and the four-factor solution accounted for 60.7% of the variance.

Responses are provided on a scale from "*1 = strongly disagree"* to *"7 = strongly agree*,"

with higher scores indicating higher collective self-esteem. The CSES has been found to have good internal consistency, with alpha coefficients for the total scale ranging from .83 to .88 in the validation studies. Validity for this measure was established through positive correlations with personal self-esteem (typically found to range from $r = .20$ to .40; Utsey & Constantine, 2006) and collectivism. Additionally, 6-week test-retest reliability for the CSES has been reported as .68 for the total scale (Liang & Fassinger, 2008). In the present study, internal reliability of the total scale was .84. Alpha values for the individual factors were .82 for Membership CSE, .81 for Private CSE, .78 for Public CSE, and .81 for Importance to Identity.

Procedures

Participants were recruited for this project through distribution of e-mail announcements over a four-week period in the spring of 2008. Announcement of the study was made via email to the listserv of Division 44 of the American Psychological Association (Society for the Psychological Study of Lesbian, Gay, and Bisexual Issues); LGBT student groups at colleges and universities; a variety of community organizations and educational groups for sexual minority people; sexual minority faith-based groups (e.g., Metropolitan Community Church, Dignity); LGBT advocacy groups; and other relevant listservs and websites. In selecting electronic venues for announcement of the study, specific efforts were made to recruit participants for the study who were diverse in age, disability status, racial/ethnic identity, educational attainment, and religion. Additionally, recruitment e-mails were sent to personal and professional contacts of the principal investigator (see Appendix F). In the solicitation emails, prospective participants were informed that the study had been approved by the Institutional Research

Board (IRB) at The University of Maryland, College Park and were provided contact

information for questions regarding the study. Furthermore, in each of these

announcements, recipients were encouraged to forward along the survey web address to

other individuals or organizations known to them. Multiple methods such as these have

been recommended to reduce bias associated with reliance upon a single recruitment

strategy, including in research with sexual minorities (Konik & Stewart, 2004). However,

the snowball recruitment approach also renders it impossible to calculate a response rate

for this study.

The survey was administered on the Internet via a secured web site meeting

suggested guidelines for accessibility for people with disabilities

(www.surveymonkey.com). On-line research has become an important tool in gathering

high-quality psychological data in recent years, and it provides greater anonymity than

traditional paper-and-pencil methods, which may be especially important in conducting

research with sexual minority individuals who may not be out in all areas of their lives

(Barak & English, 2002). One limitation of Internet based research is that participants can

submit completed surveys more than once. Additionally, web-based research is

susceptible to malicious reporting by individuals seeking to undermine the research

project, an issue of specific concern in LGBT-related research. As an attempt to partially

offset these concerns, a conservative approach to data screening (i.e., elimination of data

suggestive of deceit) was prepared, as has been used in previous research (e.g.,

Worthington, Dillon, & Becker-Shutte, 2005). Because surveys may be identified by

date, time, and Internet protocol (IP) address, these were carefully reviewed to be sure

that no duplicate surveys (i.e., identical response sets from the same IP address) appeared

to be submitted accidentally. No such identical response sets or repeat IP addresses were found in the data. Additionally, periodic internet searches were conducted to track the "travel" of the survey announcement. The request for participants was located on several LGB-related websites or weblogs, but not on any sites or blogs that would be suggestive of widespread contamination of data.

In the recruitment announcement, potential participants were asked to complete an online survey about their beliefs about sexual orientation. The web address of the survey was provided in the recruitment e-mail. Upon accessing the website, participants were provided an electronic informed consent form detailing eligibility requirements, basic information about the purpose of the study, a statement of confidentiality, potential risks and benefits to participants, and contact information for the researchers and the University of Maryland Institutional Review Board (see Appendix G). Participants had the option of printing a copy of the informed consent form. Individuals who indicated consent were directed to the survey, which was estimated to take approximately 20-30 minutes to complete. Participants first completed the Demographic Questionnaire. Next, participants completed the SOBS, followed by the PNS, the CSES, and lastly, the RWA. After completing the survey, participants were given space to provide feedback on the study and were offered the opportunity to enter an email address if they were interested in participating in the lottery drawing for one of five $20 gift cards. Finally, participants were directed to the debriefing page, which could be printed and retained (see Appendix H). Any individual who did not indicate consent to the study was directed immediately to the debriefing page. Of the original 804 individuals who accessed the survey, 34.6% ($n =$ 238) provided feedback via the survey itself, and an additional 33 people have contacted

this investigator privately to request additional information or a summary of the study results. Slightly more than half of the total number of participants (56.1%) asked to be included in the lottery drawing.

CHAPTER 4

Results

This chapter presents the results of statistical analyses conducted in the present study. First, the initial exploratory factor analysis (EFA) of the initial Sexual Orientation Beliefs Scale (SOBS) produced through the item generation and vetting process described in the preceding chapter is presented. Use of this initial EFA for item deletion to further hone the SOBS is discussed and results of a subsequent EFA are provided. Additionally, assessment of the validity of the SOBS utilizing measures of authoritarianism, need for cognitive structure, and collective self-esteem is described. Finally, results of several exploratory research questions are reported.

Hypotheses 1 and 2

Hypothesis 1: A Sexual Orientation Beliefs Scale (SOBS) can be created that will produce adequate estimates of internal consistency reliability as measured by Cronbach's alpha at the levels of the individual subscales.

Hypothesis 2: The SOBS will be a unified but multidimensional measure comprised of essentialist, social constructionist, and agentic beliefs about sexual orientation.

Hypotheses 1 and 2 jointly addressed the reliability and factor structure of the SOBS. In order to test these hypotheses, exploratory factor analysis was conducted. Best practice recommendations regarding the use of factor analysis in counseling psychology research were reviewed and employed with respect to factor extraction, factor retention, approximation of simple structure, and meaningful interpretation of the factors (e.g., Kahn, 2006; Tinsley & Tinsley, 1987; Worthington & Whittaker, 2006).

Preliminary Analyses

Before testing the appropriateness of factor analysis with the 71-item SOBS,

missing values were analyzed for each item. Less than 1% of cases were missing data for

any one item; that is, no more than 4 out of 332 participants failed to respond to any

single item. As there was no apparent pattern to the missing data, it was determined that

pairwise analyses would be utilized. Subsequently, the factorability of the data set was

evaluated using Bartlett's (1950) test of sphericity and the Kaiser-Meyer-Olkin (KMO)

test of sampling adequacy. Bartlett's test was used to determine whether the data

constituted a representative sample of the normal population. A significant chi-square test

indicates that the correlations in the correlation matrix are different from zero and

provides support for the appropriateness of factor analysis (Tinsley & Tinsley, 1987).

Results of this test were significant, χ^2 (df 4485, $N = 332$) = 8734.43, $p < .001$, suggesting

that the data were appropriate to submit to factor analysis. The KMO test of sampling

adequacy estimates the likelihood that the correlation matrix actually contains factors

rather than chance correlations. A KMO score above .60 is generally required for factor

analysis (Tabachnick & Fidell, 2001; Worthington & Whittaker, 2006). The KMO

statistic in the present study was .85, further providing support for the factorability of the

data set. Thus, an initial EFA was conducted.

Initial EFA

Principal Axis Factoring (PAF) was selected as the method of factor extraction,

and a Promax rotation of extracted factors was utilized. PAF and principal components

analysis (PCA) represent two of the most frequently utilized factor extraction methods;

however, PCA is better understood as a data reduction strategy and is not a factor analytic

strategy per se (Kahn, 2006; Tabachnick & Fidell, 2001; Worthington & Whittaker,

2006). True factor analytic techniques have been described both as more appropriate to

the goals of scale development, where the goal is to understand the interrelationships

among measured variables in terms of a smaller number of latent constructs (Kahn).

Additionally, factor analysis is more likely than PCA to produce results that are

generalizable to a confirmatory factor analysis, which frequently is a next step in the

scale development and refinement process (Worthington & Whittaker). Thus, an actual

factor analytic strategy was preferred and PAF was selected as the factor extraction

method for the current project. A rotation of extracted factors was deemed desirable

because rotated solutions tend to increase the interpretability of factors without

fundamentally altering the mathematical solution obtained during factor extraction

(Kahn, 2006). Factor rotations are of two types: orthogonal and oblique. Orthogonal

rotations (e.g., Varimax) assume uncorrelated factors while oblique rotations (e.g.,

Promax) allow for factors to be intercorrelated. It is reasonable to expect that beliefs

about sexual orientation may be intercorrelated and are therefore appropriate to an

oblique rotation; furthermore, it is considered a best practice to conduct an oblique

rotation when lacking empirical evidence that factors are independent of one another

(Worthington & Whittaker). A Promax rotation "starts with an orthogonal rotation and

then finesses the solution with an oblique rotation" (Kahn, 2006, p. 697) so that if the

factors were in fact to be uncorrelated, the rotation would remain orthogonal. Thus a

Promax rotation was deemed to be an optimal choice for the current study.

The initial PAF with Promax rotation was conducted. Initial communality

estimates based on squared multiple correlations for SOBS items ranged from $\hat{h} = .30$ to

$\hat{h} = .74$, ($\bar{x} = .47$). These communalities are within the appropriate range for factor

analysis (Worthington & Whittaker, 2006) and can be found in Table 2.

Table 2

Initial Communality Estimates for 71-item SOBS

People who have the same sexual orientation are very similar to one another.	.436
Sexual orientation is innate.	.661
In all cultures there are people who are attracted to members of the same sex.	.409
Terms like "lesbian," "gay," "bisexual," and "heterosexual" mean different things to different people.	.390
Individuals choose their sexual orientation.	.529
People can experience either privilege or discrimination based on their sexual orientation.	.310
Most people are probably naturally bisexual.	.345
If people weren't interested in discussing sexual orientation, it wouldn't exist.	.397
Sexual orientation is a category with clear boundaries: A person is either heterosexual or not.	.586
Sexual orientation is set early on in life.	.506
Knowing a person's sexual orientation tells you a lot about them.	.467
People may reasonably identify as two sexual orientations at the same time.	.478
Family influence is the main basis of an individual's sexual orientation.	.419
Sexual orientation is an important characteristic of people.	.612
We know what it means when a person tells us his or her sexual orientation.	.449
People with different sexual orientations have different goals in life.	.368
Queer is a sexual orientation that is different from lesbian, gay, bisexual, or heterosexual.	.331
It is usually possible to know a person's sexual orientation even without being told.	.404

There are more similarities than differences among people who have the same sexual orientation.	.429
Sexual orientation is caused by biological factors such as genes or hormones.	.679
People with different sexual orientations probably have existed throughout history.	.315
If you don't know a person's sexual orientation, you can't really say that you know that person.	.354
A person's sexual orientation can change over time.	.663
Most people view their sexual orientation as important to them.	.411
People may have different sexual orientations in different contexts.	.548
The term "sexual orientation" is easy to define.	.415
People select the sexual orientation that best fits the life they want to live.	.488
The idea that individuals possess a sexual orientation is not based in reality.	.525
People have access to different amounts of social power depending upon their sexual orientation.	.337
Sexual orientation is a category with clear boundaries: A person is either gay/lesbian, bisexual, or heterosexual.	.688
Sexual orientation cannot be changed by treatments and therapies.	.332
People who have the same sexual orientation interact frequently with one another.	.368
Biology is the main basis of an individual's sexual orientation.	.743
People with the same sexual orientation share a necessary or defining characteristic, without which they would not belong to that group.	.417
People with the same sexual orientation share a common fate.	.381
People tend to have a sense of group belonging based on their sexual orientation.	.443
People with different sexual orientations are fundamentally different.	.447
There is a "gay gene."	.478
The percentages of people in different sexual orientation groups are roughly the same all over the world.	.427

Your sexual orientation can change depending on who you are with or where you are.	.601
It is possible to know about many aspects of a person once you know her or his sexual orientation.	.428
Personal preference is the main basis of an individual's sexual orientation.	.400
The idea that individuals have a "sexual orientation" is a social invention.	.547
Sexual orientation is a category with distinct boundaries: A person is either gay/lesbian or heterosexual.	.664
People probably choose sexual orientation labels for themselves in part based on how that group is viewed by others.	.342
An individual's sexual orientation does not change.	.717
A person's sexual orientation is an important attribute.	.589
Sexual orientation does not exist outside of a person's relationship(s).	.376
People who share the same sexual orientation pursue common goals.	.420
Difficult or traumatic experiences have no effect on sexual orientation.	.396
Individuals with the same sexual orientation seem to be connected to one another by some invisible link.	.485
Same-sex relationships are fundamentally different from heterosexual relationships.	.413
A person has only one true sexual orientation.	.687
It's useful to group people according to their sexual orientation.	.468
Although people with the same sexual orientation have some differences on the surface, underneath they are basically the same.	.357
The existence of different sexual orientations is natural.	.454
Using terms like "lesbian," "gay," "bisexual," and "heterosexual" only reinforces stereotypes.	.487
People have control over changing or keeping their sexual orientation.	.577
It is possible to be "partially" or "somewhat" gay or straight.	.450
People with different sexual orientations are destined to have different life paths.	.443

People who identify as bisexual are confused about their true sexual orientation.	.569
All people have a sexual orientation.	.414
A person may claim a given sexual orientation for political reasons.	.297
Groupings like "gay" and "straight" are pretty artificial.	.479
It is impossible to truly change one's sexual orientation.	.507
Social and environmental factors are the main basis of an individual's sexual orientation.	.502
People with different sexual orientations do not tend to interact with one another.	.336
If someone comes out as gay or lesbian they were probably attracted to the same sex all along.	.556
Something deep inside of a person determines her or his sexual orientation.	.518
A person's sexual orientation is revealed by their sexual relationships.	.425
A person's sexual orientation reflects how God or a divine being made that person.	.303

The use of multiple criteria is recommended in determining the number of factors to extract during EFA (Costello & Osborne, 2005; Kahn, 2006; Worthington & Whittaker, 2006), and this recommendation was followed in the current study. Cattell's scree test involves examining the scree plot, a graphical representation of eigenvalues (i.e., the amount of variance accounted for) by number of factors, to determine the location at which the graph "flattens out" (Kahn, 2006). Factors *above* the point where the scree line flattens out should be retained. Unfortunately, the scree test is highly subjective and depending on the data involved a specific "break" or "elbow" in the line may be difficult to identify. In such a case, the scree test may provide a suggestion as to several possible solutions that must be considered in greater detail. In the present study, the scree test appears to suggest an optimal solution of four or five factors (see Figure 1).

It should be noted that Kaiser's criterion (i.e., retaining all factors with eigenvalues greater than one), was not utilized in the present study. Kahn notes that it is statistically incorrect to apply this criterion with any factor extraction method other than PCA, and further typically results in retention of too many factors.

The overarching goal in determining number of factors to retain is to approximate simple structure (Worthington & Whittaker, 2006). A factor pattern has approximated simple structure if the individual items load strongly on only one factor, and have small correlations (or cross-loadings) with other factors in the structure. Thus, another means of assessing the best number of factors to retain in addition to the scree test is to consider item loadings and cross-loadings provided in the individual pattern matrices for each possible solution. For example, factors should contain items which load at least at the .32 level, and cross-loadings of greater than .15 are typically to be avoided (Costello & Osborne, 2005). Furthermore, factors comprised of fewer than three items typically are not retained, as these are considered poorly defined and are unlikely to hold up in future analysis (Tabachnick & Fidell, 2001). Nevertheless, deletion of such factors, if comprised of items that are highly intercorrelated and relatively uncorrelated with other variables, may result in the loss of important information (Worthington & Whittaker). Finally, a factor solution is only useful to the extent that it has explanatory power, and so the interpretability of each potential factor solution must be considered as well. Ultimately, it is often suggested that researchers explore solutions with at least one more and one less factor than they initially believe to be optimal based on the scree test (Tinsley & Tinsley, 1987). Thus, for the purposes of the present study, two, three, four, five and six-factor solutions for the SOBS were examined for approximate simple structure and for

interpretability.

      In order to assess the relative merit and utility of the factor solutions, pattern coefficients for each solution were examined. The six factor structure solution was ruled out due to few items loading on several of the factors, moderate factor loadings, and a lack of clear interpretability. The five factor solution provided better overall factor loadings but the fifth factor had moderate factor loadings and was limited to five items that collectively were difficult to interpret. The three and two factor solutions had an increased number of crossloadings and seemed to be overly reductive according to the information suggested by the scree plot.
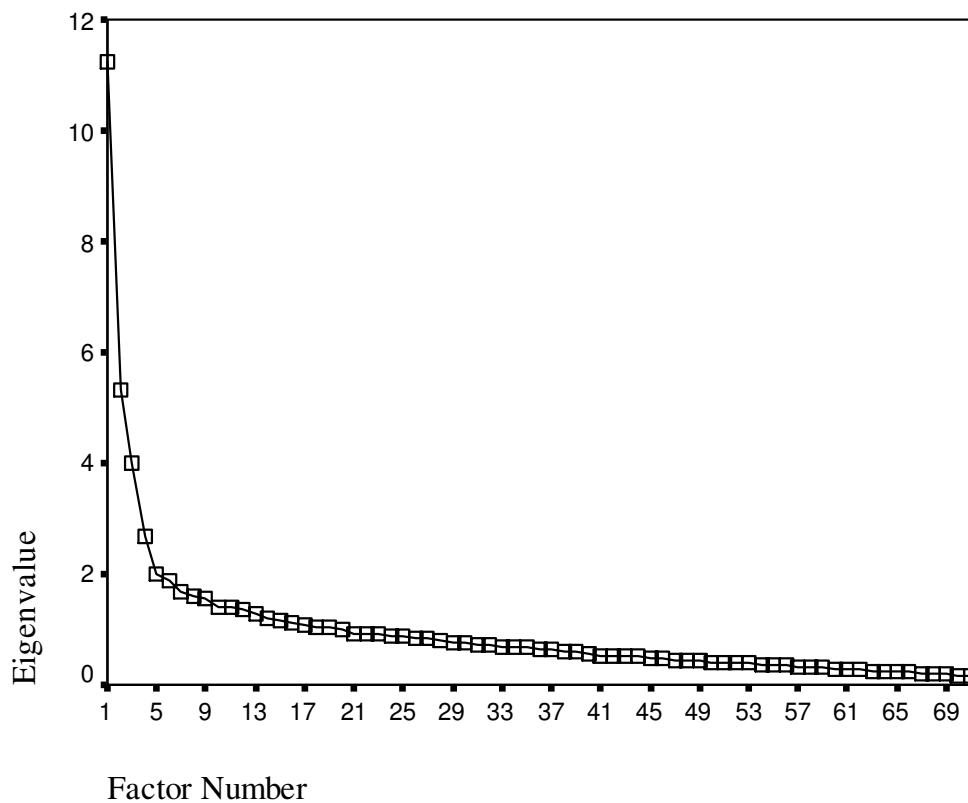

Figure 1. Scree Plot for Initial EFA

The four factor solution had the best overall statistical properties: reasonable

factor loadings, adequate items per factor, and few crossloadings. Twenty-two items

loaded on factor 1 above the minimum suggested .3, and ten of these loaded above .5.

Fifteen items loaded on factor 2 above .3, with nine loading above .5. On factor 3, 16

items loaded above .3, of which 2 loaded above .5, and on factor 4, nine items loaded

above .3 with three of these loading above .5. Furthermore, the four factor solution had

the initial appearance of interpretability. While pattern coefficients indicate the

relationship between a variables and a factor controlling for the other factors, structure

coefficients do not control for the other factors and have been suggested as more useful in

the naming of factors (Kahn, 2006). Thus, structure coefficients were examined to assess

the potential interpretability of the four factor structure. Tentative factor labels were

noted at this time: naturalness, discreteness, entitativity, and personal and social

importance. These labels were considered tentative, because a secondary objective of the

initial EFA was to utilize the data to optimize the length of the SOBS through deletion of

items, a common goal in scale development (Kahn). It was hoped that the SOBS could be

reduced in length significantly from the original 71 items tested to increase the likelihood

and ease of future use.

Final EFA

Drawing again from recommendations in the literature, items were considered for

deletion from the SOBS which had less than the minimum rotated factor loading of .30

(Kahn, 2006) and cross-loaded at or below .15 (Worthington & Whittaker, 2006). The

scale was modified through an iterative process of deleting the weakest items in the

solution and then conducting a new factor analysis with the remaining items and

assessing items based on the new solution (Kahn, 2006). Additionally, internal

consistency reliability of each factor was assessed using Cronbach's coefficient alpha and

this provided additional useful information when evaluating items for deletion.

Through this process, the prospective SOBS scale containing 71 items was

reduced to a 35-item measure reflecting four factors. This four factor model accounted

for a total of 35.33% of the variance in SOBS scores. The Pearson product-moment

correlation matrix for the obtained four-factor solution appears in Table 3. Results reveal

small or nonsignificant correlations between most of the factors of the SOBS. However,

medium correlations were found between the Naturalness and Discreteness factors of the

SOBS ($r = .38$, $p < .001$), and also between the Discreteness and Entitativity factors ($r =$

$.33$, $p < .001$). The pattern matrix produced in the final EFA for the 35-item SOBS can be

found in Table 4. This pattern matrix reflects the factor loadings for each item,

controlling for the other factors in the solution.

Table 3

Intercorrelations Among SOBS Factors

Factor	Naturalness	Discreteness	Entitativity	Importance
1	1.000			
2	.38**	1.000		
3	.23**	.33**	1.000	
4	.11	.13*	.23**	1.000

** Correlation is significant at the .001 level.
* Correlation is significant at the .01 level.

Table 4

Structure Coefficients for the 35-item SOBS

	Naturalness	Discreteness	Entitativity	Importance
Biology is the main basis of an individual's sexual orientation.	.775			
Sexual orientation is innate.	.753			
Individuals choose their sexual orientation.	-.652			
Social and environmental factors are the main basis of an individual's sexual orientation.	-.638			
People have control over changing or keeping their sexual orientation.	-.638			
Something deep inside of a person determines her or his sexual orientation.	.637			
The existence of different sexual orientations is natural.	.562			
If someone comes out as gay or lesbian they were probably attracted to the same sex all along.	.526			
The percentages of people in different sexual orientation groups are roughly the same all over the world.	.514			
It is impossible to truly change one's sexual orientation.	.511			
The idea that individuals have a "sexual orientation" is a social invention.	-.491			
Sexual orientation is set early on in life.	.454			
Sexual orientation is a category with distinct boundaries: A person is either gay/lesbian or heterosexual.		.788		
Sexual orientation is a category with clear boundaries: A person is either gay/lesbian, bisexual, or heterosexual.		.752		

People who identify as bisexual are confused about their true sexual orientation.	.646		
A person has only one true sexual orientation.	.606		
It is possible to be "partially" or "somewhat" gay or straight.	-.536		
People may reasonably identify as two sexual orientations at the same time.	-.466		
Individuals with the same sexual orientation seem to be connected to one another by some invisible link.		.635	
People who have the same sexual orientation are very similar to one another.		.571	
There are more similarities than differences among people who have the same sexual orientation.		.552	
It is possible to know about many aspects of a person once you know her or his sexual orientation.		.528	
It is usually possible to know a person's sexual orientation even without being told.		.446	
People tend to have a sense of group belonging based on their sexual orientation.		.445	
People who share the same sexual orientation pursue common goals.		.426	
Knowing a person's sexual orientation tells you a lot about them.		.425	
People who have the same sexual orientation interact frequently with one another.		.421	
People with the same sexual orientation share a common fate.		.364	
Sexual orientation is an important characteristic of people.			.809

A person's sexual orientation is an important attribute.	.719
Using terms like "lesbian," "gay," "bisexual," and "heterosexual" only reinforces stereotypes.	-.486
If you don't know a person's sexual orientation, you can't really say that you know that person.	.374
Most people view their sexual orientation as important to them.	.337
It's useful to group people according to their sexual orientation.	.315
People have access to different amounts of social power depending upon their sexual orientation.	.310

Note: Coefficients less than .30 are suppressed in this table.

Factor 1: Naturalness. Factor 1 of the four-factor solution described above

consisted of 12 items. These items reflect four basic themes: a belief that sexual

orientation is innate and biologically based (e.g., "Biology is the main basis of an

individual's sexual orientation"), that sexual orientation is characterized by early fixity

(e.g., "If someone comes out as gay or lesbian they were probably attracted to the same

sex all along"), that sexual orientation is immutable (e.g., "It is impossible to truly change

one's sexual orientation"), and that sexual orientation is a characteristic that is stable

across cultures (e.g., "The percentages of people in different sexual orientation groups are

roughly the same all over the world"). Eight of these items were generated explicitly to

represent essentialist sub-themes as defined in prior empirical work, such as naturalness

and immutability, and all had positive factor loadings. Notably, two of these items were

designed to reflect social constructionist concepts (i.e., unrealness and contextuality),

such as the item, "The idea that individuals have a 'sexual orientation' is a social

invention." These loaded negatively on the factor. The two final items reflected agency-related beliefs (e.g., "Individuals choose their sexual orientation") and these also loaded negatively on this factor. Factor 1 was labeled Naturalness in order to reflect the collection of beliefs that define sexual orientation as organic and unchanging and *not* chosen or socially constructed. Factor loadings ranged from .45 to .78. Obtained scores on factor 1 ranged from 20 to 60, out of a possible range of 12 to 60. The mean score was 44.73 (*sd* = 7.87). The internal consistency reliability coefficient (Cronbach's alpha) for the Naturalness factor the SOBS was .87. This factor accounted for 17.22% of the total variance.

Factor 2: Discreteness. The second factor in the four-factor solution contained six items. These items reflect beliefs that sexual orientation is characterized by clear boundaries between category groupings (e.g., Sexual orientation is a category with distinct boundaries: A person is either gay/lesbian or heterosexual"), and that an individual may only claim membership in *one* category grouping (e.g., "A person has only one true sexual orientation"). Four of the items that loaded on factor 2 were intended to reflect the essentialist constructs of discreteness and exclusivity, two were written to address the social constructionist factor of fluidity (e.g., "It is possible to be 'partially' or 'somewhat' gay or straight"). These latter two items loaded negatively on the identified factor. Loadings on the Discreteness factor ranged from .47 to .79. Scores in the study sample for factor 2 ranged from 6 to 28 out of a possible range of 6 to 30 for this factor. The mean score for factor 2 was 12.49 (*sd* = 4.08), and the internal reliability was .75. This factor accounted for 8.20% of the total variance.

Factor 3: Entitativity. The third factor produced in this EFA was comprised of ten

items. General themes encompassed by these items include belief in an interconnectedness among sexual orientation group members (e.g., "Individuals with the same sexual orientation seem to be connected to one another by some invisible link"), uniformity of category members (e.g., "There are more similarities than differences among people who have the same sexual orientation"), and informativeness of the category (e.g., "Knowing a person's sexual orientation tells you a lot about them"). All of the ten items loading on this factor were generated to reflect essentialist themes previously outlined in the literature, such as groupness and informativeness. No social constructionist or agentic items loaded on this factor. The Entitativity factor revealed factor loadings of .36 to .63. Factor 3 scores ranged from 11 to 39 out of a possible range of 10 to 50 for this factor. The mean score in the current sample was 24.72 (*sd* = 4.82), and the internal reliability coefficient was .81. This factor accounted for 6.02% of the total variance in scores.

Factor 4: Personal and social importance. The fourth factor in the four-factor solution produced by principal axis factoring contained seven items. The items in this factor address the relative importance of sexual orientation, either intrapersonally (e.g., "A person's sexual orientation is an important attribute") or interpersonally (e.g., "If you don't know a person's sexual orientation, you can't really say that you know that person"). Attention to social importance is also represented in this factor, such as in the item, "Using terms like 'lesbian,' 'gay,' 'bisexual,' and 'heterosexual' only reinforces stereotypes." Five of the items loading on this factor were intended to reflect the essentialist themes of importance and informativeness. Two items were intended to reflect social constructionist themes addressing the importance of context and power. One

item (the item intended to address contextuality) loaded negatively on the factor.

Loadings on the Personal and Social Importance factor (hereafter referred to more simply

as the Importance factor) ranged from .31 to .81. Factor 4 scores ranged from 11 to 32 out

of a possible range of 7 to 35. The mean score of this factor was 23.62 ($sd = 3.79$), and

the internal reliability was .67. This factor accounted for 3.89% of the total variance.

Summary

Results of the exploratory factor analysis provided support for Hypothesis 1,

which posited that a Sexual Orientation Beliefs Scale (SOBS) with adequate estimates of

internal consistency reliability at the level of the individual subscales could be created.

Hypothesis 2 suggested that the SOBS would be a unified but multidimensional measure

of beliefs of sexual orientation. Exploratory factor analysis suggested that a four-factor

solution optimally characterized the structure of the SOBS. The four discrete,

intercorrelated factors obtained through EFA provided support for Hypothesis 2.

Research Questions

Research Question 1 explored the relationship between sexual orientation beliefs

and right-wing authoritarianism. Relationships between scores on the subscales of the

SOBS and scores on the Right Wing Authoritarianism (RWA) scale were examined using

Pearson product-moment correlations (see Appendix M). Significant correlations were

not obtained between the RWA and the Naturalness factor (Factor 1; $r = -.06$) or the

Entitativity factor (Factor 3; $r = .08$) of the SOBS. There was a significant, positive

correlation between scores on the RWA and scores on the Discreteness scale (Factor 2) of

the SOBS ($r = .28$, $p < .01$). There was a significant, negative relationship between RWA

and Importance (Factor 4) scores ($r = -.18$, $p < .01$). The significant relationships found

were less than .30, reflective of a small relationship between the RWA and these SOBS

subscales (Cohen, 1988). Thus, overall, low to moderate relationships were found

between the four factors of the SOBS and the RWA.

Research Question 2 sought to explore the relationship between sexual orientation

beliefs and the need for cognitive structure. Correlations between the Personal Need for

Structure scale (PNS) and extracted factors of the SOBS were conducted and examined

(Appendix M). Three correlations were significant at the .05 level: between the total PNS

and the Importance factor ($r = .12$), between the Desire for Structure factor of the PNS

and the Importance factor of the SOBS ($r = .13$), and between the Response to Lack of

Structure factor of the PNS and the Entitativity factor of the SOBS ($r = .11$). These

relationships were positive but small. Thus, little to no relationship was found between

the sexual orientation beliefs as measured by the SOBS and a need for cognitive structure

as measured by the PNS.

Research Question 3 explored the relationship between sexual orientation beliefs

and collective self esteem. This relationship was investigated by examining correlations

between the SOBS subscales and the Collective Self Esteem Scale (CSES).

The total scale scores for the CSES failed to correlate significantly ($r = .05$) with

the Naturalness factor (see Appendix M). A significant, positive correlation was obtained

between total CSES scores and the Entitativity factor ($r = .12$, $p < .05$); however, this

relationship was quite small. Furthermore, a moderate, positive relationship ($r = .32$, $p <$

.01) between the total CSES score and the Importance factor was found. When the

relationships between SOBS subscales and CSES subscales were examined, several

additional significant relationships were revealed. Specifically, these were between the

CSES Membership subscale and the SOBS Naturalness ($r = .14$, $p < .05$) and Importance

($r = .25$, $p < .01$) factors; between the CSES Private scale and the SOBS Importance

subscale ($r= .19$, $p < .01$); between the CSES Public scale and the SOBS Entitativity ($r=$

$.14$, $p < .05$) and Importance ($r= -.11$, $p < .05$) scales; and between the CSES Identity

subscale and the SOBS Entitativity ($r= .12$, $p < .05$) and Importance ($r= .49$, $p < .01$)

subscales. Notably, only the latter is a reasonably strong correlation. Thus, collective self

esteem was found to be most strongly related to the beliefs about the personal and social

importance of sexual orientation.

The fourth and final research question sought to investigate the relationship

between demographic variables of participants and scores on the SOBS. Results of

analyses related to this research question are presented below.

Potential gender differences in SOBS subscale scores were explored. For the

purposes of this analysis, transgender-identified individuals were omitted from the

sample. Independent samples t-tests were conducted. Scores for women and men differed

significantly on each of the SOBS subscales (see Table 5). For all factors, women's mean

scores were significantly lower than men's. The effect sizes of the differences ranged

from .02 to .13. The effect sizes for the Discreteness, Entitativity, and Importance factors

were small; only the Naturalness factor difference demonstrated a medium effect size.

The relationships between sexual orientation self-labeling and scores on the

SOBS were also explored. Individuals who self-labeled as "questioning/uncertain" or

"other" were excluded from this analysis. A one-way between-groups analysis of

variance was conducted. There were statistically significant differences found for three of

the four subscales; only the Importance factor did not reveal statistically significant

Table 5

Gender Differences in SOBS Subscale Scores

	t	df	Sig. (2-tailed)	Mean Difference (Women-Men)	η^2
Naturalness	-6.57	293	.000	-5.45	.13
Discreteness	-3.61	301	.000	-1.69	.04
Entitativity	-2.72	296	.007	-1.54	.02
Importance	-3.52	299	.000	-1.57	.04

differences. Statistically significant differences at the $p < .05$ level were found between individuals who self identified as gay ($\bar{x} = 25.5$, $sd = 5.1$) and those who self identified as queer ($\bar{x} = 23.0$, $sd = 4.1$) on the Entitativity factor of the SOBS [$F(3, 303) = 3.01$, $p = .03$]. Despite reaching statistical significance, however, the actual difference in mean scores on this factor was small, as indicated by the calculated effect size ($\eta^2 = .03$). Significant differences were also found between sexual orientation groups on both the Naturalness [$F(3, 300) = 34.52$, $p < .001$] and Discreteness [$F(3, 308) = 32.34$, $p < .001$] factors. Effect sizes for these differences were calculated (Naturalness $\eta^2 = .26$, Discreteness $\eta^2 = .24$) and found to be large (Cohen, 1988). Means and standard deviations for each group on these two factors appear in Table 6. On the Naturalness factor, gay participants had significantly higher mean scores than bisexual, lesbian, or queer participants ($p < .001$); lesbian participants had significantly higher scores than queer participants ($p < .001$); and bisexual participants had significantly higher scores than queer participants ($p = .016$). On the Discreteness factor, gay respondents had significantly higher mean scores than bisexual or queer respondents ($p < .001$) and

lesbian respondents had significantly higher scores than bisexual or queer respondents (p

< .001).

Table 6

Scores on Naturalness and Discreteness Subscales by Sexual Orientation Group

	Naturalness			Discreteness		
	n	Mean	SD	n	Mean	SD
Bisexual	51	41.69	7.57	55	10.27	2.11
Gay	112	49.09	6.03	111	14.32	4.31
Lesbian	99	44.75	6.60	103	13.55	3.87
Queer	42	37.43	8.32	43	9.09	1.90
Total	304	44.82	7.89	312	12.63	4.10

Pearson product moment correlations were also conducted between scores on the

SOBS subscales and age. Age was significantly correlated with scores on three of the

four factors of the SOBS (Naturalness, Discreteness, and Importance). Each of these

correlations was less than .30, which is indicative of a small relationship (Cohen, 1988).

Intercorrelations between the SOBS subscales and self-reported SES were also examined;

only the Importance factor was found to significantly correlate ($r = .11$, $p < .05$), albeit

with a very small value. Table 7 provides the alpha values for age and SES as related to

the SOBS subscales.

Table 7

Correlation Matrix: SOBS Subscales, Age, and SES

		Naturalness	Discreteness	Entitativity	Importance
Age	*r*	.21**	.21**	.006	.21**
	n	321	329	323	327
SES	*r*	.07	.07	-.03	.11*
	n	321	329	323	327

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

The relationships between highest level of education and scores on the SOBS subscales were assessed through a one-way analysis of variance. For the purposes of this analysis, educational attainment was recoded into four groups: high school or some college; undergraduate degree (associate's or bachelor's); some graduate school or master's degree; and doctoral degree. Statistically significant between-group differences were found only on the Importance factor of the SOBS [F (3, 322) = 16.90, $p < .001$]. The effect size was calculated and found to be large ($\eta^2 = .14$). Examination of mean differences revealed progressively higher means on this factor with increasing level of education, and differences that were statistically significant between each tier and its adjacent tier(s).

The potential relationships between geographic area of residence (i.e., suburban, urban, rural) and scores on the factors of the SOBS were examined utilizing a one-way analysis of variance. No significant differences in SOBS scores were revealed among participants residing in differing geographic settings.

Chapter 5

Discussion

The purpose of the present study was to create a measure of sexual orientation beliefs that would build upon an existing literature of essentialist beliefs about social groups, integrate key constructs from a social constructionist literature, and incorporate agentic themes. In this chapter, results for each of the hypotheses and exploratory research questions are discussed. Subsequently, the relative strengths and weaknesses of the present investigation are outlined. Finally, potential implications of this study for future research, practice, and advocacy are addressed.

Dimensional Structure of the SOBS

Hypothesis 1: A Sexual Orientation Beliefs Scale (SOBS) can be created that will produce adequate estimates of internal consistency reliability as measured by Cronbach's alpha at the levels of the individual subscales.

Hypothesis 2: The SOBS will be a unified but multidimensional measure comprised of essentialist, social constructionist, and agentic beliefs about sexual orientation.

The dimensional structure of the SOBS was evaluated according to the recommendations of experts in factor analysis in counseling psychology research (e.g., Kahn, 2006; Tinsley & Tinsley, 1987; Worthington & Whittaker, 2006). Based on comparisons of the item loadings and relative interpretability of several competing multidimensional models for this measure, a four-dimensional structure was found to provide the best fit for the data. Based on review of the individual items and the structure matrix generated through exploratory factor analysis using Principal Axis Factoring with

Promax rotation, the obtained factors were named Naturalness, Discreteness, Entitativity, and Personal and Social Importance. These individual factors were characterized by good internal consistency reliability (with alpha values ranging from .67 to .87), providing support for Hypothesis 1. Hypothesis 2 was also supported, because the named factors reflected discrete but intercorrelated beliefs about sexual orientation. The vast majority of retained items on the 35-item SOBS reflected essentialist constructs; however, items generated to be reflective of other "types" of sexual orientation beliefs (i.e., social constructionist and agentic) were found to load along with essentialist items on certain factors.

Naturalness

The first factor of the SOBS, Naturalness, encompassed beliefs that sexual orientation is innate and biologically based, determined and fixed early in life, unable to be changed or chosen, and historically and culturally universal. The Naturalness subscale of the SOBS is similar to the immutability factor in the two-factor structure of sexual orientation beliefs described by Hegarty and Pratto (2001), which contained items reflecting early determinacy and adult fixity of sexual orientation. This factor of the SOBS also is similar to the immutability factor that Haslam and Levy (2007), in their work on sexual orientation beliefs, characterized as representing beliefs that sexual orientation is biologically based and fixed early in life. Furthermore, the Naturalness factor of the SOBS relates to the natural kinds factors found in other work examining essentialist beliefs about social groups generally (i.e., not sexual orientation in particular; e.g., Haslam, Rothschild, & Ernst, 2000). Thus, the Naturalness factor of the SOBS relates closely to prior findings in the literature. For this factor, the label "Naturalness"

was chosen over "immutability" as used in prior work (Haslam & Levy; Hegarty & Pratto), because it was believed to better account for the range of beliefs reflected in the items, including those addressing the cultural and temporal universality of sexual orientation.

It is notable that the Naturalness factor consisted not only of essentialist items, but also of two items generated to reflect social constructionist beliefs (e.g., "Social and environmental factors are the main basis of an individual's sexual orientation") and two items intended to reflect agentic beliefs about sexual orientation (e.g., "People have control over changing or keeping their sexual orientation"). These items had an inverse relationship to the other items on the scale, suggesting that these beliefs function as oppositional to the essentialist beliefs. In other words, greater endorsement of social influence or personal choice in sexual orientation is related to lower levels of belief in its innateness, and vice-versa. Though social constructionism and essentialism frequently are treated as opposite ends of a philosophical or epistemological spectrum (Hansell, 2000), this study sought to investigate a variety of belief types without postulating potential relationships between them a priori. Interestingly, though, these results provide preliminary empirical support for the idea that at least some social constructionist and essentialist lay beliefs may effectively be "opposites." Likewise, the negative relationship between agentic beliefs and essentialist beliefs in this factor suggest that at the level of individual lay beliefs, sexual orientation may tend to be perceived as either a forced or chosen social category (as postulated in the work of Demoulin, Leyens, & Yzerbyt, [2006]).

Discreteness

The second factor of the SOBS, Discreteness, was comprised of items reflecting beliefs that sexual orientation groupings (e.g., gay, heterosexual) are unique, non-overlapping categories, wherein an individual's membership is restricted to only one group. In prior empirical work on sexual orientation beliefs, items related to the essentialist construct of discreteness have been found to load on the same factor as the items related to entitativity or groupness (Haslam & Levy, 2007; Hegarty & Pratto, 2001). In the present study, however, these items were found to load on a distinct factor. In addition to items generated specifically to reflect essentialist beliefs related to discreteness, this factor also was comprised of items intended to consider the social constructionist concept of fluidity. As was the case in the Naturalness factor, the social constructionist items loaded negatively on the Discreteness factor. This again points to the possibility that some lay social constructionist beliefs run counter to popular essentialist beliefs. While at the item level this can be fairly intuitive—that is, it is not surprising that level of endorsement of the item, "A person has only one true sexual orientation" would be negatively related to level of endorsement of the item, "People may reasonably identify as two sexual orientations at the same time"—it points to a potentially larger relationship between essentialist and social constructionist beliefs that is suggested in the theoretical literature but lacking in empirical evidence.

Another point to be made related to this factor concerns the implicit working conceptualizations of discreteness in prior studies on sexual orientation beliefs. In these studies, discreteness was defined as reflective of a belief in two distinct (and perhaps opposite) sexualities, "homosexual" and "heterosexual." This particular idea is not unlike

essentialist beliefs about gender that group individuals in one of two opposite-sexed

categories. However, it is possible that lay beliefs in the discreteness of sexual orientation

do not *necessarily* require belief in a binary. For example, essentialist beliefs about race

may dictate that a person belongs to one, clearly-defined racial group; however, such

beliefs do not inherently require the assertion that only two racial groups exist. Rather, an

individual may adhere to essentialist ideas about racial categories and be able to identify

three, four, five or more racial groups as potentially real and distinct. Likewise, when

extrapolating to research on sexual orientation, it is interesting to note that the prior

studies did not allow for the possibility that people may endorse three rather than two

discrete sexual orientation groupings: homosexual (or gay/lesbian), bisexual, and

heterosexual. While this may seem a small semantic point, it may also be reflective of a

common bias that conceptualizes bisexuality as "half gay, half straight" or a transitional

midpoint on the way to one's "real" sexual orientation (Rust, 2000). In the present study,

this issue was explored by providing participants with three separate but related items.

Each item began with an identical stem, "Sexual orientation is a category with distinct

boundaries," followed by three different endings: one that specified a three-group view of

sexual orientation (i.e., "a person is either gay/lesbian, bisexual, or heterosexual"), one

that specified a two-group view of sexual orientation (i.e., "a person is either gay/lesbian

or heterosexual"), and one that did not specify a number of groups but used the dominant

identification as a referent (i.e., "a person is either heterosexual or not"). Interestingly,

these items were differentially endorsed by participants. It was noted that the three-group

item had the highest level of endorsement among participants ($\bar{x}$ = 1.86, sd = 1.02),

followed by the two-group item ($\bar{x}$ = 1.70, sd = .88), and finally, the heterosexual-only

item ($\bar{x}$ = 1.55, *sd* = .81). In the final 35-item version of the SOBS, the first two of these

items were retained and had similarly high loadings on the Discreteness factor (.79 and

.75). Future work on beliefs about sexual orientation would benefit from increased

attention to the varying conceptualizations of the groupings of sexual orientation and

particularly to attitudes and beliefs about bisexuality. Indeed, useful information about

sexual orientation beliefs may be lost when researchers implicitly reinforce a sexual

orientation binary, particularly those endorsed by individuals who self-label as bisexual

or queer (see also the discussion of within-group differences in beliefs related to sexual

orientation below).

Entitativity

The third factor of the SOBS, Entitativity, included beliefs in the "groupness" of

sexual orientation categories (i.e., the interconnectedness of members), as well as the

informativeness of the category label for knowing or understanding the individual

member, or what Rothbart and Taylor (1992) termed "inductive potential." No social

constructionist or agentic items loaded on this factor.

As noted previously, in their work on essentialist beliefs about sexual orientation,

Hegarty and Pratto (2001) described a "fundamentality" factor that included beliefs about

discreteness as well as the informativeness of the sexual orientation label. Haslam and

Levy (2007) likewise obtained a factor in their studies that reflected both discreteness

beliefs and informativeness beliefs (a factor they labeled "discreteness"). Thus, while

entitativity beliefs have been discussed in prior work on lay theories of sexual orientation,

these typically have loaded on the same factor as discreteness beliefs. This suggests a

potential difference of the present study results from prior findings. Results in the present

study suggested that the Entitativity factor was best conceptualized as distinct from Discreteness items, in contrast to prior work on sexual orientation beliefs, in which these constructs formed one factor. One possibility is that the greater length of the present measure allowed an important distinction between these factors to emerge.

Social and Personal Importance

The fourth factor of the SOBS was labeled personal and social importance. The items loading on this factor appeared to converge around beliefs in the relative significance of the sexual orientation group membership, either for the individual on a personal level or for the individual in her or his social interactions. Most of the items in this subscale were written to reflect essentialist themes, including that of importance. Two items were intended to reflect social constructionist themes attending to the significance of context and issues of power related to sexual orientation self-labeling. One of these items (i.e., "Using terms like 'lesbian,' 'gay,' 'bisexual,' and 'heterosexual' only reinforces stereotypes") loaded negatively on the factor. The issue of social and personal importance of group membership can be interpreted in a variety of ways. For example, one could hold a belief that sexual orientation is important because it is a fundamental attribute of a human being (an essentialist viewpoint). Quite differently, one could have a belief that sexual orientation is important because it is utilized as a tool of social oppression (a social constructionist belief). Alternatively, one could endorse a belief that sexual orientation is important because self-labeling reflects a process of self-construction that highlights personal power and choice (an agentic belief). Consideration of the items on the scale and their factor loadings may reflect this potential divide. The first two items in the subscale, which simply reflect a general belief that sexual

orientation is important without stipulation about how or why, were found to have notably higher loadings on the factor than the remaining items, which asserted the importance of sexual orientation for knowing people, grouping people, or conferring social power to people. It would be beneficial for future work in this domain to attend more closely to these different ways of finding importance in sexual orientation and to attempt to differentiate between them. In the absence of that information, the Importance remains difficult to adequately interpret.

Social Constructionist and Agentic Beliefs within the SOBS

While the present study was designed to incorporate and evaluate potential non-essentialist beliefs about social groups, ultimately, few social constructionist and agentic belief items are reflected in the final 35-item SOBS measure. Moreover, where these items appear in the current measure, they largely function as oppositional to essentialist beliefs and serve as reverse coded items for the factors on which they load. Many of the social constructionist items generated for this study were found to be confusing or complicated by the expert reviewers, and the social constructionist items tested in the main study frequently had poorer psychometric qualities than the essentialist belief items. Furthermore, the retained social constructionist items do not reflect the full range of social constructionist themes outlined in the preceding review of the literature (e.g., plurality). Thus, while the present study investigated a broader range of beliefs about sexual orientation than previous studies that addressed essentialist beliefs exclusively, results may suggest that some social constructionist themes are conceptually unrelated to essentialist beliefs or do not function as lay beliefs in predictable patterns with respect to essentialist beliefs.

Research Questions

Research Question 1: What is the relationship between beliefs about sexual orientation and right-wing authoritarianism?

Research Question 2: What is the relationship between beliefs about sexual orientation and need for cognitive structure?

Research Question 3: What is the relationship between beliefs about sexual orientation and collective self esteem?

Research Question 4: What is the relationship between demographic variables of participants and scores in the SOBS?

Analyses conducted in the present study revealed a low to moderate relationship between the right wing authoritarianism scale (RWA; Altemeyer, 2006) and the subscales of the SOBS. This finding suggests that the created measure is not simply a new measure of authoritarianism. The largest relationship between the SOBS subscales and the RWA was a significant, positive correlation between RWA and scores on the Discreteness scale of the SOBS ($r = .28$, $p < .01$). This finding may be understood in terms of the cognitive requirements of authoritarianism. That is, authoritarianism requires the mental dividing of people into groups in order to confer a privileged status upon one and a denigrated status upon the other(s). Therefore, it is unsurprising that higher levels of right-wing authoritarianism were related to higher levels of endorsement in the discreteness of sexual orientation.

Small correlations were also found between the subscales of the SOBS and the Personal Need for Structure scale (PNS; Thompson, Naccarato, & Parker, 1989) scale. All relationships were positive and significant at the .05 level. The relationship between

sexual orientation beliefs and the need for cognitive structure was examined because

different types of beliefs may provide a relatively more or less simple structure for

understanding the differences between social groups. It is interesting to note that for the

present sample, desire for structure and endorsement of essentialist beliefs were not

found to be highly interrelated. One potential explanation for this finding may relate to

the ways in which one arrives at beliefs about an in-group as opposed to an out-group.

Previous studies have focused on heterosexual people's beliefs about sexual orientation,

which may largely be informed by stereotypes about sexual minority people that are

cognitively simple. However, the present study sampled sexual minority individuals, who

may be less apt to engage in cognitively reductive strategies for explicating sexual

orientation, and draw instead on personal experiences and relationships that are

cognitively more complex. Thus, endorsement of essentialist beliefs about sexuality by a

sexual minority individual may be less apt to reflect a need for cognitive structure than

would endorsement of the same belief by a sexual majority group member.

Research Question 3 considered the relationship between sexual orientation

beliefs and collective self esteem as measured by the Collective Self Esteem Scale

(CSES; Luhtanen and Crocker, 1992). Even where statistically significant correlations

were found, these were largely quite small. Two moderate, positive relationships were

revealed, however: between the total CSES score and the Importance factor of the SOBS

($r = .32, p < .01$), and between the CSES Identity subscale and the SOBS Importance

subscale ($r = .49, p < .01$). Collective self esteem considers the extent to which people feel

positively about their social groups. This positive feeling may relate to the individual's

appreciation of her or his social groups, and/or the individual's sense of herself or himself

as a member of those social groups. In the present study, participants were specifically

directed to consider their sexual orientation group membership in responding to the

items. Thus, the relationship between the total CSES score and the Personal and Social

Importance scale of the SOBS is understandable because it suggests that those who

believe that sexual orientation is a socially meaningful attribute are more likely to have

positive feelings about their sexual orientation group membership. The CSES Identity

subscale specifically focuses on the importance of one's social group memberships to

one's self concept, and so the significant relationship between scores on this subscale and

the Importance factor of the SOBS are likewise unsurprising.

Research Question 4 explored the possible relationships between

sociodemographic characteristics of respondents and beliefs about sexual orientation.

Differences related to participant gender, sexual orientation, and other demographic

variables are discussed below

Gender Differences

For all factors on the SOBS, scores for women and men differed significantly,

with women's mean scores lower than men's on all factors. While these differences were

statistically significant, only the differences on the Naturalness factor demonstrated a

medium effect size ($\eta^2 = .13$; Cohen, 1988). Thus, women in the present study sample

were less likely than men to identify sexual orientation as biologically based, immutable,

and fixed early in life. This is consistent with other findings in the literature. For

example, Rust (2000) noted that women are more likely than men to endorse multiple

sexual orientation labels concurrently, to report changes in their sexual orientation self-

labeling over time, and to emphasize choice in sexual orientation. Thus, it follows

naturally that women may be less apt to view sexual orientation as innate and unchanging than do men, as such a belief may be less consistent, or inconsistent, with their personal experiences of sexuality.

Sexual Orientation Differences

Potential relationships between sexual orientation self-labeling and scores on the SOBS were investigated. No statistically significant differences were found for the Importance factor. That is, participants were no more (nor less) likely to endorse the personal or social importance of sexual orientation based on their own membership in a specific sexual orientation category. Differences in mean scores were found on the Entitativity factor of the SOBS, with gay-identified participants having higher mean scores than queer-identified participants; however, the effect size of this finding was very small. Thus, there was some indication that gay individuals attribute greater similarity and informativeness to sexual orientation groupings than do queer individuals; however, this finding may lack in practical significance.

More sizable differences were found between sexual orientation groups on the Naturalness and Discreteness factors. Specifically, on the Naturalness factor, gay respondents had significantly higher mean scores than bisexual, lesbian, or queer participants ($p < .001$); lesbian participants had significantly higher scores than queer participants ($p < .001$); and bisexual participants had significantly higher scores than queer participants ($p = .016$). On the Discreteness factor, gay respondents had significantly higher mean scores than bisexual or queer participants ($p < .001$), and lesbian participants had significantly higher scores than bisexual or queer participants ($p < .001$). Taken collectively, these findings suggest a trend whereby gay and lesbian

participants had higher mean endorsement of Naturalness and Discreteness beliefs than did bisexual or queer participants. That queer and bisexual identified individuals may be less likely to endorse essentialist beliefs about sexual orientation is consistent with empirical and theoretical work suggesting that the very claiming of bisexual and queer labels is personally and socially more difficult than self-identifying as lesbian or gay (e.g., Rust, 2002; 2000). Binegative attitudes both in and out of the sexual minority community confer a dubious status on bisexually-identified individuals. Specifically, bisexuality is often described as transitional, temporary, or reflective of confusion or dishonesty on the part of its claimant (and therefore not Natural, nor Discrete). To accept a bisexual self-label requires the rejection of this binegative discourse, and perhaps concomitantly, lower adherence to sexual orientation beliefs most closely associated with that discourse. Likewise, some individuals embrace the self-label "queer" to convey a refusal to organize their experiences within traditional, confining conceptualizations of sexuality that do not match their personal experiences (Fassinger & Arseneau, 2007). This rejection of normative ideas about sexuality could in turn relate to a lower likelihood of endorsing sexual orientation beliefs focused on immutability, inherence, and discreteness.

Other Demographic Differences

Relationship between age, SES, education, and geographic area or residence (i.e., suburban, urban, rural) were explored.

Subjective self-assessment of social class was provided by participants on a 10-point scale; these ratings were correlated with SOBS scores. One significant correlation was found for the Importance factor; however, this relationship was found to be small

and significant only at the .05 level. Thus, social class/SES appears to have little influence on endorsement of lay beliefs about sexual orientation. For example, social standing alone was not significantly related to individual beliefs that sexual orientation is innate or biologically driven. Furthermore, no significant differences in SOBS scores were revealed among participants residing in differing geographic settings (i.e., rural, suburban, urban). Recently, some of the influences of "gay ghettos" on the lived experiences of sexual minority individuals have been described in the literature, and attention has been given to unique challenges of sexual minority individuals living in small towns and rural areas who may have difficulty accessing a community (e.g., Mills et al., 2001). It is therefore interesting to note that sexual orientation beliefs did not appear to vary according to geographic area of residence in the present study.

Correlational analysis was also conducted between scores on the SOBS subscales and age. Age was significantly correlated with scores on three of the four factors of the SOBS (Naturalness, Discreteness, and Importance), though these relationships were found to be small. Nevertheless, some evidence was provided that beliefs about sexual orientation may differ between older and younger sexual minority people, in that older individuals perceived sexual orientation as more inherent, immutable, distinct, and important than did younger sexual minority people. In considering age-related differences with sexual minority people, the potential significance of cohort effects must be considered (Fassinger & Arseneau, 2007). Social attitudes about sexual orientation have changed dramatically in the past decades and older sexual minority individuals may have experienced greater stigma than their younger counterparts. Savin-Williams (2005) recently found that sexual minority youth are less likely to embrace sexual orientation

labels used by older sexual minority individuals, and are generally less interested in self-labeling based on sexual orientation. This provides some support for the idea that sexual orientation beliefs may reflect cohort attitudes, and specifically, that younger people may hold less essentialist views of sexual orientation and may view sexuality as less personally or socially important. No empirical literature was located which specifically examined age or cohort effects on essentialist beliefs about social groups.

Finally, the relationships between highest level of education and scores on the SOBS subscales were assessed. A statistically significant difference reflective of a large effect size ($\eta^2 = .14$) was revealed on the Importance factor, such that higher levels of education were associated with progressively higher means on this factor. The increasing endorsement of social and personal importance of sexual orientation with increasing levels of education is difficult to account for, and again points to questions about the ultimate interpretability and utility of the Importance factor as obtained in this study.

Limitations of the Present Study

The present study is characterized by several limitations which must be considered in evaluating its overall merit, generalizability of findings, and potential utility for future counseling psychology research and practice. Significant limitations of this project are detailed in this section. Where relevant, unique strengths of the current project are also noted.

Several limitations, as well as some strengths, may be found in issues related to sampling procedures and the eventual sample obtained in the study. This project sought to investigate beliefs about sexual orientation held by sexual minority individuals; in doing so, it expanded the literature on essentialist beliefs in what may be an important

direction. Centering the experience of traditionally marginalized groups is an important aspect of multicultural research that may both inform psychologists about the lives of nondominant group members and also give rise to new perspectives in work with dominant (or mixed) populations. Thus, the focus on sexual orientation beliefs held by sexual minority individuals could be viewed as a unique strength of this project. Nevertheless, as frequently is the case in psychological research generally and in online research specifically, the obtained sample was predominantly White and highly educated. This may limit the generalizability of the current results to the broader population of same-gender attracted individuals, and raises the issue of potential sociodemographic-related confounds in the data. Of course, Worthington and Whittaker (2006) make the important point that in research with LGBT people, it is difficult to assess representativeness of a sample or make claims about generalizability because attributes of the actual population remain unknown, due to the oppression of this minority group. Although specific efforts were made to recruit a diverse sample that would be more racially/ethnically diverse, people of color represented just over 20% over the study sample. A largely White and highly educated sample may produce a range restriction on variables of interest in the project, which ultimately could compromise the findings.

The sampling procedures appear to have been reasonably effective at obtaining a sample that was diverse with respect to demographic characteristics such as age, geographic location, and sexual orientation self-labeling. In this latter category the characteristics of the sample are particularly noteworthy, in that over 16% percent of the participants labeled as bisexual and 13% self-described as queer. Both the recruitment materials with language specifically recruiting "same-gender attracted people" rather than

"LGB people" may have helped in this regard, along with the demographic questionnaire which somewhat atypically allowed for self labeling as queer. (Indeed, this researcher was pleased to receive positive feedback from participants about the sexual orientation and gender identity questions on the demographics form, which when constructed in a more traditional manner can serve to marginalize and inaccurately represent individuals.) Ultimately, results obtained in the present study should be extrapolated with caution to a larger sexual minority population. Moreover, it remains to be seen whether the created SOBS will have utility in assessing the beliefs of sexual majority individuals.

In addition, it should be noted that the use of exploratory factor analysis (EFA) has several limitations. EFA frequently has been described in the literature as a process which runs the risk of being characterized by "garbage in, garbage out" (Tabachnick & Fidell, 2001). This expression refers to the fact that factors are determined by and depend on the quality of the items created. A lengthy scale constructed of poor items still may produce psychometrically reasonable factors through this analytic technique. To attempt to offset this potential—and significant—problem, several best practice recommendations were followed during the item generation phase of measure development to ensure that the items subjected to factor analysis were of reasonable quality and representative of content validity.

Furthermore, the process selecting the number of factors to extract and the naming of factors are highly subjective in exploratory factor analysis. Though guidelines certainly exist for factor retention (e.g., Kahn, 2006; Tinsley & Tinsley, 1987; Worthington & Whittaker, 2006), ultimately, the four factor solution described in this document represents *a* solution of the data rather than *the* solution. Likewise, factor

names, while informed by their component items as well as constructs derived from the literature, invariably reflect the particular viewpoint of the researcher. Furthermore, the use of a single sample to explore the factor structure of a new scale, without replicating the factor structure on a confirmation sample, allows for the possibility that findings were obtained by chance or that the described factor structure is unstable. Consequently, this study should be viewed as exploratory and its results as prospective.

An additional limitation of the present study relates to the need for establishment of concurrent, discriminant, and predictive validity of the new measure. While item generation and vetting processes were utilized following recommendations for maximizing content validity in scale development (Kahn, 2006; Tinsley & Tinsley, 1987; Worthington & Whittaker, 2006), claims of the construct validity of the SOBS would need additional support. Some support for the discriminant validity of the SOBS was found with an established measure of right wing authoritarianism (Altemeyer, 2006). However, predictive and concurrent validity were not assessed in the current project based. Interpretation of the present results should attend to this limitation, and future work will benefit from reconsideration of these validity issues.

Implications for Research and Practice

Consideration of the implications of the present study for counseling psychology is important to assessing its ultimate utility and merit. In this section, potential future directions for research and professional practice are presented.

First, it is recommended that future research be conducted to further evaluate the psychometric properties of the Sexual Orientation Beliefs Scale (SOBS). A next initial step in this process may be a confirmatory factor analysis (CFA) on a new sample to test

the stability of the factor structure. CFA is a measurement tool used to confirm that a hypothesized factor structure, specified a priori, provides a good fit to a given data set (Kahn, 2006). In CFA, hypotheses are derived from a theory postulating the relationships among constructs and observed variables.

Future research in this domain would also benefit from consideration of potential correlates of the sexual orientation belief factors obtained in the SOBS. A measure is useful to the extent that it predicts relationships with or differentiates between other constructs of interest. The potential relationship of sexual orientation beliefs to political conservatism, religious fundamentalism, personal self-esteem, or social activism could be fruitful areas of investigation.

Finally, the social constructionist constructs articulated in the current project were not well represented in the final measure. It is possible that these concepts were poorly reduced to Likert-type items in a quantitative project. Many of these themes were found to be complex even by expert reviewers. Qualitative methodologies might provide a better means of investigating the level and type of endorsement of social constructionist views about sexual orientation held by sexual minority people.

It would be difficult to argue that there are immediate implications for practice from the present study, as support for the validity of the developed measure would first need to be established through additional research. However, continued research on sexual orientation beliefs and the further refinement and testing of the SOBS may ultimately link to professional practice issues. For example, Reynolds and Hanjorgiris (2000) have noted that sexual minority individuals seek therapy in greater numbers than their heterosexual counterparts. Lay beliefs about sexual orientation may be related to

individual sexual minority clients' self concepts or personal self-esteem. Having an appropriate knowledge of issues that impinge upon healthy identity development for sexual minority individuals is critical to providing affirmative and ethical services. Research that delineates group-related beliefs could provide counselors with a tool with which to engage the identity-related experiences of sexual minority individuals. Furthermore, in couples or family practice, an understanding of personal differences in beliefs about sexual orientation may facilitate a therapeutic dialogue about individual assumptions, and enable practitioners to assist in the bridging of interpersonal gaps between clients. Additionally, exploration of therapist-client match on belief structures could yield new information relevant to maximizing therapeutic outcomes. Finally, whereas much recent social policy and advocacy work on behalf of sexual minority individuals draws explicitly or implicitly on lay beliefs about sexual orientation, a more thorough understanding of the nature and function of these beliefs could eventually provide needed support to those psychologists and activists working to advance a social justice agenda.

Conclusion

The purpose of this study was to explore the nature of lay beliefs about sexual orientation held by sexual minority individuals through creation of the Sexual Orientation Beliefs Scale (SOBS). Essentialist, social constructionist, and agentic theory and research were utilized to inform the scale development process. The final 35-item SOBS consisted of four factors which were named by the researcher as reflecting beliefs about Naturalness, Discreteness, Entitativity, and Personal and Social Importance of sexual orientation. Results suggested that variations may exist in the types and levels of beliefs

endorsed by sexual minority adults based on the gender and sexual orientation self-labeling of the individual. Continued empirical research in this area is needed to further illuminate the nature and correlates of such beliefs, and perhaps ultimately to help bridge the gap between beliefs about sexual orientation and the pressing psychological, social, and legal issues to which they are connected.

APPENDIX A

Items from Prior Studies for Review in Item Generation

Items Specifically Focused on Sexual Orientation

From Haslam & Levy, 2007:
1. Sexual orientations are categories with clear and sharp boundaries: People are either homosexual or heterosexual.
2. Homosexual people a necessary or defining characteristic, without which they would not be homosexual.
3. Heterosexual and homosexual people are not fundamentally different. (R)
4. Bisexual people are fooling themselves and should make up their minds.
5. Knowing that someone is homosexual or heterosexual tells you a lot about them.
6. Sexual orientation is caused by biological factors.
7. Whether a person is homosexual or heterosexual is pretty much set early on in childhood.
8. People cannot change their sexual orientation. (R)
9. Homosexuality and heterosexuality are innate, genetically based tendencies.
10. Doctors and psychologists can help people change their sexual orientation. (R)
11. Homosexuals probably only exist in certain cultures. (R)
12. Homosexuals have probably existed throughout human history.
13. In all cultures there are people who consider themselves homosexual.
14. The proportion of the population that is homosexual is roughly the same all over the world.
15. It is only in the last century that homosexuals have appeared in large numbers. (R)

From Hegarty & Pratto, 2001:
1. Sexual orientation is caused by biological factors such as genes and hormones.
2. Whether a person is homosexual or heterosexual is pretty much set early on in childhood.
3. If you didn't know a person's sexual orientation you couldn't really say that you know that person.
4. Homosexual relationships are fundamentally different from heterosexual relationships.
5. Regardless of their past experience some people can choose to change their sexual orientation.
6. Doctors and psychologists can help people change their sexual orientation.
7. If someone comes out as gay or lesbian they were probably attracted to the same sex all along.
8. Bisexual people are fooling themselves and should make up their minds.
9. In all cultures there are people who consider themselves homosexual.

Items from Other Studies of Essentialist Beliefs

From Bastian & Haslam, 2006:
1. The kind of person someone is can be largely attributed to their genetic inheritance.
2. Very few traits that people exhibit can be traced back to their biology. (R)
3. I think that genetic predispositions have little influence on the kind of person someone is. (R)
4. Whether someone is one kind of person or another is determined by their biological make-up.
5. There are different types of people and with enough scientific knowledge these different 'types' can be traced back to genetic causes.
6. A person's attributes are something that can't be attributed to their biology. (R)
7. With enough scientific knowledge, the basic qualities that a person has could be traced back to, and explained by, their biological make-up.
8. A person's traits are never determined by their genes. (R)
9. The kind of person someone is, is clearly defined; they either are a certain kind of person or they are not.
10. People can behave in ways that seem ambiguous, but the central aspects of their character are clear-cut.
11. A person's basic qualities exist in varying degrees, and are never easily categorized. (R)
12. Everyone is either a certain type of person or they are not.
13. A person's basic character is never easily defined. (R)
14. A person either has a certain attribute or they do not.
15. No matter what qualities a person has, those qualities are always indefinite and difficult to define. (R)
16. People can have many attributes and are never completely defined by any particular one. (R)
17. When getting to know a person it is possible to get a picture of the kind of person they are very quickly.
17. It is possible to know about many aspects of a person once you become familiar with a few of their basic traits.
18. A person's behavior in a select number of contexts can never tell you a lot about the kind of person they are. (R)
19. Although a person may have some basic identifiable traits, it is never easy to make accurate judgments about how they will behave in different situations. (R)
20. Generally speaking, once you know someone in one or two contexts it is possible to predict how they will behave in most other contexts.
21. It is never possible to judge how someone will react in new social situations. (R)
22. There are different 'types' of people and it is possible to know what 'type' of person someone is relatively quickly.

From Demoulin et al., 2006:
1. Some categories can qualify as 'groups,' some categories qualify to a lesser extent.
2. In some categories, people interact very much with one another. In some, there is almost no interaction between members of the category.

3. Some categories are very important in the eyes of the people that are part of it. Some have no importance at all in their eyes.
4. In some categories, members of the category share with one another common fate. In some categories, members are not linked by a common fate.
5. In some categories, members of the category pursue common goals. In some categories, members are not linked by any common goals.
6. Some categories allow people to make many judgments about their members; knowing that someone belongs to the category tells us a lot about that person. Other categories only allow a few judgments about their members; knowledge of membership is not very informative.
7. Some categories contain members who are very similar to one another; they have many things in common. Other categories contain members who differ greatly from one another, and don't share many characteristics.
8. Some categories have sharper boundaries than others. For some, membership is clear-cut, definite, and of 'either/or' variety; people belong to the category or they do not. For others, membership is more 'fuzzy'; people belong to the category in varying degrees.
9. Some categories are more natural than others, whereas others are more artificial.
10. Membership in some categories is easy to change; it is easy for group members to become non-members. Membership in other categories is relatively immutable; it is difficult for category members to become non-members.
11. Some categories are more stable over time than others; they have always existed and their characteristics have not changed much throughout history. Other categories are less stable; their characteristics have changed substantially over time, and they may not always have existed.
12. Some categories have necessary features or characteristics; without these characteristics someone cannot be a category member. Other categories have many similarities but no features or characteristics are necessary for membership.
13. Some categories have an underlying reality. Although members have similarities and differences on the surface, underneath they are basically the same. Other categories also have many similarities and differences on the surface, but do not correspond to an underlying reality.
14. In some cases, we feel that members of a category all possess something that convincingly explains membership in the category even if it is rather abstract. In some other cases, explaining membership in the category does not seem that easy.
15. Membership in some categories seems to be due to some immaterial thing that, even if it is hard to say what, is at the same time very real. For some other categories, we don't have the impression that we can spot some immaterial thing that explains membership in the category.
16. Some categories have an explanative power. Something deep inside categories' members explains membership of these individuals in the category. For other categories, nothing deep inside the members can explain membership in the category.
17. For some categories, members seem to be linked with each other by some invisible thing. For other categories, nothing seems to link members with each other.

From Haslam, Rothschild, & Ernst, 2000:

1. Some categories have sharper boundaries than others. For some, membership is clear-cut, definite, and of an "either-or" variety; people either belong to the category or they do not. For others, membership is more "fuzzy"; people belong to the category in varying degrees.

2. Some categories contain members who are very similar to one another; they have many things in common. Members of these categories are relatively uniform. Other categories contain members who differ greatly from one another, and don't share many characteristics.

3. Some categories allow people to make many judgments about their members; knowing that someone belongs to the category tells us a lot about that person. Other categories only allow a few judgments about their members; knowledge of membership is not very informative.

4. Some categories are more natural than others, whereas others are more artificial.

APPENDIX B

Initial Item Pool Reviewed by Experts

1. Sexual orientations are categories with clear boundaries: A person is either heterosexual or not.
2. Sexual orientations are categories with distinct boundaries: A person is either lesbian/gay, bisexual, or heterosexual.
3. Sexual orientations are categories with distinct boundaries: A person is either gay/lesbian or heterosexual.
4. There are no distinct boundaries between sexual orientation groups.
5. People belong to sexual orientation categories in varying degrees.
6. Sexual orientation categories have "fuzzy" boundaries.
7. It is possible to be "partially" or "somewhat" gay or lesbian.
8. People who claim to be bisexual are fooling themselves and should make up their minds.
9. People who identify as bisexual are confused about their true sexual orientation.
10. Bisexual people eventually choose between being straight and being gay/lesbian.
11. People with different sexual orientations are not fundamentally different.
12. People who have the same sexual orientation are very similar to one another.
13. People with the same sexual orientation differ greatly from one another.
14. There are more differences than similarities among people who label themselves lesbian, gay, or bisexual.
15. There are more differences than similarities among people who call themselves lesbian.
16. There are more differences than similarities among people who call themselves gay.
17. Knowing a person's sexual orientation tells you a lot about them.
18. If you didn't know a person's sexual orientation you couldn't really say that you know that person.
19. It is possible to know about many aspects of a person once you know her or his sexual orientation.
20. Sexual orientation is innate and genetically based.
21. Sexual orientation is innate and biologically based.
22. Sexual orientation is caused by biological factors such as genes and hormones.
23. There is a "gay gene."
24. Variation in sexual orientation is natural.
25. Groupings like "gay" and "straight" are pretty artificial.
26. Eventually it will be possible for scientific knowledge to explain the existence of different sexual orientations.
27. With enough scientific knowledge, the sexual orientation that a person has could be traced back to, and explained by, their biological make-up.
28. Diversity in sexual orientation can be found in animals other than humans.
29. All people have a sexual orientation.
30. A person's sexual orientation is pretty much set early on in childhood.
31. From the day you are born/early in life/early childhood your sexual orientation is exactly the way it will always be.

32. Treatments and therapies exist that can successfully change people's sexual orientation.
33. People cannot change their sexual orientation.
34. It is impossible to truly change one's sexual orientation
35. People who are unhappy with their sexual orientation may successfully change it.
36. People who are unhappy with their sexual orientation should make efforts to change it.
37. If someone comes out as gay or lesbian they were probably attracted to the same sex all along.
38. If someone comes out as gay, lesbian, or bisexual they were probably attracted to the same sex all along.
39. People with/of different sexual orientations exist in all cultures.
40. Different sexual orientations probably only exist in certain cultures.
41. In all cultures there are people who are attracted to members of the same sex.
42. People with/of different sex orientations have probably existed throughout history.
43. The proportions of the population made up by different sexual orientation groups is roughly the same all over the world.
44. It is only in the last century that differences in sexual orientation have appeared.
45. Same-sex relationships are fundamentally different from heterosexual relationships.
46. Although people with the same sexual orientation have some similarities and differences on the surface, underneath they are basically the same.
47. People with the same sexual orientation share a necessary or defining characteristic, without which they would not belong to that group.
48. A person has only one true sexual orientation.
49. People who have the same sexual orientation choose to interact frequently with one another.
50. Sexual orientation is an important personal characteristic.
51. Sexual orientation is an important characteristic of lesbian, gay, and bisexual people.
52. People with the same sexual orientation have similar life paths.
53. People who share the same sexual orientation pursue common goals.
54. The term sexual orientation is easy to define.
55. It is usually possible to know a person's sexual orientation even without being told.
56. Something deep inside of a person determines her or his sexual orientation.
57. If people weren't interested in discussing sexual orientation it wouldn't exist.
58. Sexual orientation labels are meaningful.
59. Labels for sexual orientations change over time but the specific categories the labels represent do not.
60. The idea that individuals have a "sexual orientation" is a social invention.
61. People tend to/may identify their sexual orientation differently in different contexts.
62. Terms like "lesbian," "gay," "bisexual," and "heterosexual" mean different things to different people.
63. People may have different sexual orientations in different contexts.
64. Using terms like "lesbian," "gay," "bisexual," and "heterosexual" does little more than foster stereotypes.
65. An individual's sexual orientation is fluid and constantly changing.
66. People may reasonably identify as two sexual orientations at the same time.

67. Most people are probably naturally bisexual.
68. Sexual orientation can change over time.
69. "Queer" is a sexual orientation that is different from lesbian, gay, bisexual, or heterosexual.
70. Sexual orientation does not exist outside of a person's relationship(s).
71. A person's sexual behavior and true sexual orientation should match.
72. People have access to different amounts of social power depending upon their sexual orientation.
73. Lesbian, gay, and bisexual people experience equal discrimination.
74. People probably choose sexual orientation labels for themselves in part based on how that group is viewed by others.
75. Bisexual people have more social power than lesbian or gay people.
76. An individual may choose a given sexual orientation for political reasons.
77. Individuals choose their sexual orientation.
78. People have no choice in their sexual orientation.
79. Sexual orientation is at least in part a matter personal of preference.
80. Other things may have some influence, but personal choice is the biggest reason for an individual's sexual orientation.
81. Other factors may have some influence, but biology is the biggest reason for an individual's sexual orientation.
82. Other factors may have some influence, but social and family factors are the biggest reason for an individual's sexual orientation.
83. A person's sexual orientation is caused by how he or she was raised.
84. A person's sexual orientation reflects how God made that person.

APPENDIX C

Pilot Study Items

1. People who have the same sexual orientation are very similar to one another.
2. Sexual orientation is a category with clear boundaries: A person is either heterosexual or not.
3. It is possible to be "partially" or "somewhat" gay or lesbian.
4. There are more similarities than differences among people who call themselves heterosexual.
5. Sexual orientation is caused by biological factors such as genes or hormones.
6. Diversity in sexual orientation can be found in animals other than humans.
7. It is impossible to truly change one's sexual orientation.
8. In all cultures there are people who are attracted to members of the same sex.
9. Although people with the same sexual orientation have some differences on the surface, underneath they are basically the same.
10. People who have the same sexual orientation interact frequently with one another.
11. People with different sexual orientations are destined to have different life paths.
12. Even if it's hard to explain, we know what it means when a person tells us his or her sexual orientation.
13. Individuals with the same sexual orientation seem to be connected to one another by some invisible link.
14. People may identify their sexual orientation differently in different contexts.
15. No matter where you are or who you are with, your sexual orientation stays the same.
16. A person's sexual orientation can change over time.
17. A person's sexual behavior should match his or her true sexual orientation.
18. Bisexual people have more social power than lesbian or gay people.
19. Other things may have some influence, but personal choice is the biggest reason for an individual's sexual orientation.
20. A person's sexual orientation is determined by the attitudes or values of his or her parent(s).
21. It's possible for a person to belong more or less strongly to a given sexual orientation.
22. Groupings like "gay" and "straight" are pretty artificial.
23. Sexual orientation is not an important attribute.
24. The idea that individuals have a "sexual orientation" is a social invention.
25. Other factors may have some influence, but social and family factors are the biggest reason for an individual's sexual orientation.
26. People probably choose sexual orientation labels for themselves in part based on how that group is viewed by others.
27. Particularly difficult or traumatic experiences may cause a change in an individual's sexual orientation.
28. Sexual orientation is at least in part a matter personal of preference.
29. An individual may choose a given sexual orientation for political reasons.
30. Lesbian, gay, and bisexual people experience equal discrimination.
31. Sexual orientation does not exist outside of a person's relationship(s).
32. Using terms like "lesbian," "gay," "bisexual," and "heterosexual" only reinforces

stereotypes.

33. Sexual orientation categories are meaningful.
34. If people weren't interested in discussing sexual orientation, it wouldn't exist.
35. The term "sexual orientation" is easy to define.
36. People who share the same sexual orientation pursue common goals.
37. Sexual orientation is an important characteristic of lesbian, gay, and bisexual people.
38. People tend to have a sense of community or group belonging based on their sexual orientation.
39. A person has only one true sexual orientation.
40. Same-sex relationships are fundamentally different from heterosexual relationships.
41. People with different sexual orientations have probably existed throughout history.
42. If someone comes out as gay or lesbian they were probably attracted to the same sex all along.
43. Treatments and therapies exist that can successfully change people's sexual orientation.
44. A person's sexual orientation is pretty much set early on in childhood.
45. There are more similarities than differences among people who label themselves lesbian, gay, or bisexual.
46. People who identify as bisexual are confused about their true sexual orientation.
47. Sexual orientation is a category with clear boundaries: A person is either lesbian/gay, bisexual, or heterosexual.
48. People who claim to be bisexual are fooling themselves and should make up their minds.
49. There are more similarities than differences among people who call themselves lesbians.
50. Knowing a person's sexual orientation tells you a lot about them.
51. Sexual orientation is innate.
52. The existence of different sexual orientations is natural.
53. People who are unhappy with their sexual orientation may successfully change it.
54. All people have a sexual orientation.
55. It is only in the last century that differences in sexual orientation have appeared.
56. Sexual orientation helps group people in important ways.
57. Most people don't view their sexual orientation as important to them.
58. People with different sexual orientations have different goals in life.
59. Labels for sexual orientation may change over time but the specific categories the labels represent do not.
60. People may have different sexual orientations in different contexts.
61. Most people are probably naturally bisexual.
62. "Queer" is a sexual orientation that is different from lesbian, gay, bisexual, or heterosexual.
63. People have no choice in their sexual orientation.
64. Other factors may have some influence, but biology is the biggest reason for an individual's sexual orientation.
65. Something deep inside of a person determines her or his sexual orientation.
66. People with different sexual orientations probably only exist in certain cultures.
67. Sexual orientation is a category with distinct boundaries: A person is either

gay/lesbian or heterosexual.
68. Bisexual people eventually choose between being straight and being gay/lesbian.
69. People with the same sexual orientation differ greatly from one another.
70. If you don't know a person's sexual orientation, you can't really say that you know that person.
71. There is a "gay gene."
72. From early in life your sexual orientation is exactly the way it will always be.
73. The proportions of the population made up by different sexual orientation groups is roughly the same all over the world.
74. People with the same sexual orientation share a necessary or defining characteristic, without which they would not belong to that group.
75. Sexual orientation is an important characteristic of people.
76. People with the same sexual orientation share a common fate.
77. It is usually possible to know a person's sexual orientation even without being told.
78. Terms like "lesbian," "gay," "bisexual," and "heterosexual" mean different things to different people.
79. A person's sexual orientation is fluid and can change.
80. People may reasonably identify as two sexual orientations at the same time.
81. People have access to different amounts of social power depending upon their sexual orientation.
82. Sexual orientation is something that is chosen by people.
83. There are no distinct boundaries or dividing lines between different sexual orientations.
84. People with different sexual orientations are not fundamentally different.
85. It is possible to know about many aspects of a person once you know her or his sexual orientation.
86. People who are unhappy with their sexual orientation should make efforts to change it.
87. There are more similarities than differences among people who call themselves gay.
88. Eventually it will be possible for scientific knowledge to explain the existence of different sexual orientations.
89. People with different sexual orientations do not tend to interact with one another.
90. An individual's sexual orientation doesn't change.
91. A person's sexual orientation reflects how God made that person.

APPENDIX D

Sexual Orientation Belief Items Administered in the Main Study

1. People who have the same sexual orientation are very similar to one another.
2. Sexual orientation is innate.
3. In all cultures there are people who are attracted to members of the same sex.
4. Terms like "lesbian," "gay," "bisexual," and "heterosexual" mean different things to different people.
5. Individuals choose their sexual orientation.
6. People can experience either privilege or discrimination based on their sexual orientation.
7. Most people are probably naturally bisexual.
8. If people weren't interested in discussing sexual orientation, it wouldn't exist.
9. Sexual orientation is a category with clear boundaries: A person is either heterosexual or not.
10. Sexual orientation is set early on in life.
11. Knowing a person's sexual orientation tells you a lot about them.
12. People may reasonably identify as two sexual orientations at the same time.
13. Family influence is the main basis of an individual's sexual orientation.
14. Sexual orientation is an important characteristic of people.
15. We know what it means when a person tells us his or her sexual orientation.
16. People with different sexual orientations have different goals in life.
17. Queer is a sexual orientation that is different from lesbian, gay, bisexual, or heterosexual.
18. It is usually possible to know a person's sexual orientation even without being told.
19. There are more similarities than differences among people who have the same sexual orientation.
20. Sexual orientation is caused by biological factors such as genes or hormones.
21. People with different sexual orientations probably have existed throughout history.
22. If you don't know a person's sexual orientation, you can't really say that you know that person.
23. A person's sexual orientation can change over time.
24. Most people view their sexual orientation as important to them.
25. People may have different sexual orientations in different contexts.
26. The term "sexual orientation" is easy to define.
27. People select the sexual orientation that best fits the life they want to live.
28. The idea that individuals possess a sexual orientation is not based in reality.
29. People have access to different amounts of social power depending upon their sexual orientation.
30. Sexual orientation is a category with clear boundaries: A person is either gay/lesbian, bisexual, or heterosexual.
31. Sexual orientation cannot be changed by treatments and therapies.
32. People who have the same sexual orientation interact frequently with one another.
33. Biology is the main basis of an individual's sexual orientation.

34. People with the same sexual orientation share a necessary or defining characteristic, without which they would not belong to that group.
35. People with the same sexual orientation share a common fate.
36. People tend to have a sense of group belonging based on their sexual orientation.
37. People with different sexual orientations are fundamentally different.
38. There is a "gay gene."
39. The percentages of people in different sexual orientation groups are roughly the same all over the world.
40. Your sexual orientation can change depending on who you are with or where you are.
41. It is possible to know about many aspects of a person once you know her or his sexual orientation.
42. Personal preference is the main basis of an individual's sexual orientation.
43. The idea that individuals have a "sexual orientation" is a social invention.
44. Sexual orientation is a category with distinct boundaries: A person is either gay/lesbian or heterosexual.
45. People probably choose sexual orientation labels for themselves in part based on how that group is viewed by others.
46. An individual's sexual orientation does not change.
47. A person's sexual orientation is an important attribute.
48. Sexual orientation does not exist outside of a person's relationship(s).
49. People who share the same sexual orientation pursue common goals.
50. Difficult or traumatic experiences have no effect on sexual orientation.
51. Individuals with the same sexual orientation seem to be connected to one another by some invisible link.
52. Same-sex relationships are fundamentally different from heterosexual relationships.
53. A person has only one true sexual orientation.
54. It's useful to group people according to their sexual orientation.
55. Although people with the same sexual orientation have some differences on the surface, underneath they are basically the same.
56. The existence of different sexual orientations is natural.
57. Using terms like "lesbian," "gay," "bisexual," and "heterosexual" only reinforces stereotypes.
58. People have control over changing or keeping their sexual orientation.
59. It is possible to be "partially" or "somewhat" gay or straight.
60. People with different sexual orientations are destined to have different life paths.
61. People who identify as bisexual are confused about their true sexual orientation.
62. All people have a sexual orientation.
63. A person may claim a given sexual orientation for political reasons.
64. Groupings like "gay" and "straight" are pretty artificial.
65. It is impossible to truly change one's sexual orientation.
66. Social and environmental factors are the main basis of an individual's sexual orientation.
67. People with different sexual orientations do not tend to interact with one another.
68. If someone comes out as gay or lesbian they were probably attracted to the same sex all along.
69. Something deep inside of a person determines her or his sexual orientation.

70. A person's sexual orientation is revealed by their sexual relationships.
71. A person's sexual orientation reflects how God or a divine being made that person.

APPENDIX E

Demographics Form

Please answer the following questions about yourself as honestly as possible. Remember that your answers will be kept CONFIDENTIAL by the researchers.

1. Age: _____

2. Your race/ethnicity:
    African American/Black
    Asian/East Asian American/Pacific Islander
    Hispanic/Latino/Chicano
    Middle Eastern/Arab American
    Native American/American Indian
    South Asian American/Indian
    White/Caucasian
    Multi-Racial or Other (please specify): _____

3. Sex/gender assigned at birth:
    Female
    Male

4. Are you transgender or living in a gender different from the one you were assigned at birth?
    No
    Yes

    If yes, please indicate your current gender identity: _____

5. Which of the following best describes your sexual orientation?
    Bisexual
    Gay
    Lesbian
    Queer
    Questioning/Uncertain
    Other (please specify): _____

6. Which word(s) or label(s) do you typically use to describe your sexual orientation?
    _____

7. Highest level of education that you have completed:
    Elementary School
    Middle/Junior High School
    High School/GED

Some College/Technical School
Associate's Degree
Bachelor's Degree
Some Professional/Graduate School
Master's Degree
Doctoral Degree

8. Which of the following best describes where you live presently?
   Rural Area
   Suburban Area
   Urban Area
   Other (please specify): _____

9. Current state/province of residence: _____

10. Think of this scale as representing where the people stand in the United States. At the far right end of the scale are the people who are the best off—those who have the most money, the most education, and the most respected jobs. At the far left end of the scale are the people who are the worst off—those who have the least money, least education, and the least respected jobs or no job. Where would you place yourself on this scale, compared to all the other people in the United States?

    Social Class Scale: Lowest ○   ○   ○   ○   ○   ○   ○   ○   ○
    ○Highest

11. How did you hear about this study?

APPENDIX F

Sample Participant Recruitment Email

We are writing to inform you about a research study that is currently being conducted at the University of Maryland on **beliefs about sexual orientation**. You are encouraged to participate if you identify as **a member of the LGBT community** or as any of the following: lesbian, gay, bisexual, bi-curious, queer, questioning, same-sex attracted, or otherwise exploring same-sex sexuality. Even if you prefer not to label yourself, we are interested in your experience! Participation involves the completion of several questionnaires and will take approximately 20-30 minutes.

You can choose to assist with this project by forwarding this e-mail request to LGBT-themed organizations and listservs, and/or to LGBT individuals. Questions about this study may be directed to Julie Arseneau at jra87@umd.edu or Dr. Ruth E. Fassinger at rfassing@umd.edu. This project has been reviewed and approved by the University of Maryland Institutional Review Board.

After completing the survey, you may enter into a drawing for one of **five $20 American Express gift cards** that may be used at a store of your choosing**.** Your participation in this study is entirely voluntary and your responses will remain **anonymous** and **confidential**. You need not provide any identifying information, but will asked to submit an email address if you wish to enter the drawing.

If you are interested in participating in this study please follow the link provided below or cut and paste the link into your web browser.

[web address here]

Thank you,

Julie R. Arseneau, M.A.
Doctoral Candidate, Counseling Psychology
Department of Counseling & Personnel Services
University of Maryland, College Park
jra87@umd.edu

Ruth E. Fassinger, Ph.D.
Professor & Interim Chair
Department of Counseling & Personnel Services
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APPENDIX G

Informed Consent Form

Welcome!

Why is this research being done?
This project is being conducted by Julie R. Arseneau, M.A. and Ruth Fassinger, Ph.D. at the University of Maryland, College Park. We are inviting you to participate in this research project if you identify as a person with a same-sex orientation or attraction (e.g., lesbian, gay, bisexual, queer). The purpose of this research project is to learn more about the opinions and beliefs of same-sex attracted people.

What will I be asked to do?
Participating in this study involves being asked to complete several questionnaires concerning your beliefs about sexual orientation, and social and religious attitudes. Participation in the study will take approximately 30 minutes. You are free to withdraw your consent to participate and may discontinue your participation in the study at any time. After submitting this form, you will be connected to the survey. Upon completion of the survey, you will have the opportunity to enter a drawing for one of five $20 American Express gift cards. Entry into the drawing is completely voluntary.

What about confidentiality?
We will do our best to keep your personal information confidential. To help protect your confidentiality, we will not include identifiable information on data files. All computer files will be password-protected. However, due to the public nature of the internet, absolute confidentiality cannot be guaranteed. The possibility of someone intercepting your data is highly unlikely, although possible. It is therefore important that you exit your browser after you have submitted your survey. At the end of the survey, you will be given the opportunity to enter a drawing to win one of five $20 American Express gift cards. Participation in this drawing is completely voluntary. You must enter an email address to participate in the drawing; however, you do not need to enter your email address to participate in the survey. Your survey responses will not be linked to your email address; this information will be stored in two different data files. Email addresses entered for participation in the drawing will be kept in the researcher's password- protected file and will be destroyed immediately following the drawing.

What are the risks of this research?
The only anticipated risk from participating in this research study is the possibility that some of the questions could elicit uncomfortable feelings. You may discontinue the survey at any time without consequence.

What are the benefits of this research?
This research is not designed to help you personally, but the results may help the investigators learn more about beliefs about sexual orientation held by same-sex attracted individuals. It is our hope that people might benefit from this study through improved

understanding of such opinions and beliefs.

May I stop participating at any time?
Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may withdraw your participation at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized. However, only those who complete the survey will be given the option to enter their email address to participate in the drawing.

What if I have questions?
This research is being conducted by Julie R. Arseneau, M.A. and Ruth Fassinger, Ph.D. at the University of Maryland, College Park. If you have any questions about the research study itself, please contact Julie Arseneau at jra87@umd.edu or Ruth Fassinger at rfassing@umd.edu. If you have questions about your rights as a research participant, please contact: Institutional Review Board Office, University of Maryland, College Park, MD, 20742; (e-mail) irb@deans.umd.edu; (telephone) 301-405-0678. This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

Your acceptance indicates that:
- **you are at least 18 years of age;**
- **the research has been explained to you;**
- **your questions have been fully answered; and**
- **you freely and voluntarily choose to participate in this research project.**

I Accept   I Do Not Accept

APPENDIX H

Debriefing Information for Participants

Thank you very much for taking the time to complete this questionnaire. The goal of this study is to learn more about the beliefs about sexual orientation held by same-sex attracted people. It is hoped that this information will be useful to psychologists, advocates, and policymakers in the future.

Results of the study will be made available to participants upon request; contact Julie Arseneau at jra87@umd.edu. Lottery winners will be contacted by email. If you have entered the lottery, please be sure your email account settings will permit you to receive this notification from jra87@umd.edu.

If you have any questions or concerns about this study, or would like to offer any feedback about the content of the surveys you just completed, you are encouraged to contact the researchers: Julie Arseneau at jra87@umd.edu or Ruth Fassinger, Ph.D. at rfassing@umd.edu. Questions or concerns about your rights as a research participant may be directed to the UMD IRB office at irb@deans.umd.edu; phone 301-405-0678.

Thank you again!

APPENDIX I

Measures for Establishing Validity

Personal Need for Structure Scale (Thompson, Naccarato, & Parker, 1989)

Read each of the following statements and decide how much you agree with each according to your attitudes, beliefs, and experiences. It is important for you to realize that there are no "right" or "wrong" answers to these questions. People are different, and we are interested in how you feel. Please respond according to the following 6-point scale:

1 = strongly disagree
2 = moderately disagree
3 = slightly disagree
4 = slightly agree
5 = moderately agree
6 = strongly agree

1. It upsets me to go into a situation without knowing what I can expect from it.
2. I'm not bothered by things that interrupt my daily routine. *(R)**
3. I enjoy having a clear and structured mode of life.
4. I like to have a place for everything and everything in its place.
5. I enjoy being spontaneous. *(R)*
6. I find that a well-ordered life with regular hours makes my life tedious. *(R)*
7. I don't like situations that are uncertain.
8. I hate to change my plans at the last minute.
9. I hate to be with people who are unpredictable.
10. I find that a consistent routine enables me to enjoy life more.
11. I enjoy the exhilaration of being in unpredictable situations. *(R)*
12. I become uncomfortable when the rules in a situation are not clear.
*(R) = Item is reversed scored.

Right-wing Authoritarianism (Altemeyer, 2006)**

This survey is part of an investigation of general public opinion concerning a variety of social issues. You will probably find that you agree with some of the statements, and disagree with others, to varying extents. Please indicate your reaction to each statement on the line to the left of each item according to the following scale:

1 = very strongly disagree
2 = strongly disagree
3 = moderately disagree
4 = slightly disagree
5 = neutral

6 = slightly agree
7 = moderately agree
8 = strongly agree
9 = very strongly agree

1. Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us.
2. *Gays and lesbians are just as healthy and moral as anybody else.*
3. It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.
4. *Atheists and others who have rebelled against the established religions are no doubt every bit as good and virtuous as those who attend church regularly.*
5. The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas.
6. *There is absolutely nothing wrong with nudist camps.*
7. *Our country needs free thinkers who have the courage to defy traditional ways, even if this   upsets many people.*
8. Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs.
9. *Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else.*
10. The "old-fashioned ways" and the "old-fashioned values" still show the best way to live.
11. *You have to admire those who challenged the law and the majority's view by protesting for women's abortion rights, for animal rights, or to abolish school prayer.*
12. What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path.
13. *Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the "normal way things are supposed to be done."*
14. God's laws about abortion, pornography and marriage must be strictly followed before it is too late, and those who break them must be strongly punished.
15. There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action.
16. *A "woman's place" should be wherever she wants to be. The days when women are submissive to their husbands and social conventions belong strictly in the past.*
17. Our country will be great if we honor the ways of our forefathers, do what the authorities tell us to do, and get rid of the "rotten apples" who are ruining everything.
18. *There is no "ONE right way" to live life; everybody has to create their own way.*
19. *Homosexuals and feminists should be praised for being brave enough to defy "traditional family values.*
20. This country would work a lot better if certain groups of troublemakers would just shut up and accept their group's traditional place in society.

**Note: Counter-balanced items for this scale appear in italics.

Collective Self-Esteem Scale (Luhtanen & Crocker, 1992)

INSTRUCTIONS: We are all members of different social groups or social categories. Some of such social groups or categories pertain to gender, race, religion, nationality, ethnicity, and socioeconomic class. We would like you to consider your memberships in those particular groups or categories, and respond to the following statements on the basis of how you feel about those groups and your memberships in them. There are no right or wrong answers to any of these statements; we are interested in your honest reactions and opinions. Please read each statement carefully, and respond by using the following scale from 1 to 7:

1 = Strongly Disagree
2 = Disagree
3 = Disagree Somewhat
4 = Neutral
5 = Agree Somewhat
6 = Agree
7 = Strongly Agree

1. I am a worthy member of the social groups I belong to.
2. I often regret that I belong to some of the social groups I do. (R)[+]
3. Overall, my social groups are considered good by others.
4. Overall, my group memberships have very little to do with how I feel about myself. (R)
5. I feel I don't have much to offer to the social groups I belong to. (R)
6. In general, I'm glad to be a member of the social groups I belong to.
7. Most people consider my social groups, on the average, to be more ineffective than other social groups. (R)
8. The social groups I belong to are an important reflection of who I am.
9. I am a cooperative participant in the social groups I belong to.
10. Overall, I often feel that the social groups of which I am a member are not worthwhile. (R)
11. In general, others respect the social groups that I am a member of.
12. The social groups I belong to are unimportant to my sense of what kind of a person I am. (R)
13. I often feel I'm a useless member of my social groups. (R)
14. I feel good about the social groups I belong to.
15. In general, others think that the social groups I am a member of are unworthy. (R)
16. In general, belonging to social groups is an important part of my self image.

[+] *(R)* = Item is reversed scored.

APPENDIX J

Pattern Coefficients for Initial Four Factor Solution

(Note: Coefficients less than .30 are suppressed in this table.)

Item Number*	Factor 1	Factor 2	Factor 3	Factor 4
33	.786			
2	.720			
20	.673			
5	-.631			
58	-.621			
66	-.611			
69	.600			
56	.564			
3	.541	-.314		
39	.537			
68	.496			
27	-.480			
43	-.474			
28	-.473			-.323
38	.471			
65	.464			
10	.433			
13	-.428			
21	.383	-.344		
31	.383			
48	-.373			-.309
8	-.329			
50				
42				
16				
45				
67				
44		.702		
30		.685		
9		.666		

61		.632		
53		.607		
23	-.321	-.591		
46	.303	.562		
59		-.559		
40	-.351	-.507		
12		-.491		
25	-.310	-.404		
4		-.316		
26		.301		
6				
7				
17				
63				
51			.614	
41			.553	
18			.470	
1			.457	
19			.457	
32			.425	
49			.413	
11			.412	
55			.385	
36			.383	
60			.379	
35			.377	
34			.366	
37			.352	
15			.314	
70			.304	
52				
71				
14				.694
47				.589
57				-.559
54				.375

29		.354
64	-.318	-.344
22		.340
62		
24		

*Full text of each item by number can be found in Appendix D

APPENDIX K

Structure Coefficients for Initial Four Factor Solution

(Note: Coefficients less than .30 are suppressed in this table.)

Item Number*	Factor 1	Factor 2	Factor 3	Factor 4
33	.772	.346		
2	.710	.334		
20	.674	.347		
58	-.641			
5	-.634			
66	-.611			
69	.603			
68	.587	.462		
43	-.549	-.321		
39	.540			
10	.528	.431		
65	.516			
28	-.509			-.381
56	.507			
38	.492	.303		
27	-.480			
3	.428			
31	.388			
13	-.380			
8	-.378			
50	.370			
42	-.346			
45				
21				
53	.470	.716	.304	
30		.714	.414	
23	-.559	-.693		
46	.544	.688		
44		.676	.395	
61		.641	.376	

9		.630	.317	
40	-.551	-.598		
12		-.510		
59		-.506		
25	-.473	-.500		
26		.384	.354	
64		-.379		-.377
4		-.372		
6		-.310		
17		-.301		
7				
63				
51			.610	
41			.548	
11			.489	.309
18			.465	
1			.463	
19			.445	
49			.435	
37			.415	.326
34			.406	
32			.401	
60			.398	
55			.392	
70	.327		.387	
35			.384	
15	.338		.368	
36			.321	
52				
71				
67				
14				.705
47				.624
57				-.540
54				.399
22				.365

62	.346	.353
48	-.320	-.332
29		.318
24		
16		

*Full text of each item by number can be found in Appendix D

Appendix L

Final Structure Coefficients for 35-item SOBS

(Note: Coefficients less than .30 are suppressed in this table.)

	Factor 1	Factor 2	Factor 3	Factor 4
Biology is the main basis of an individual's sexual orientation.	0.772			
Sexual orientation is innate.	0.729			
Something deep inside of a person determines her or his sexual orientation.	0.648			
Individuals choose their sexual orientation.	0.633			
People have control over changing or keeping their sexual orientation.	0.631			
Social and environmental factors are the main basis of an individual's sexual orientation.	0.598			
If someone comes out as gay or lesbian they were probably attracted to the same sex all along.	0.596	0.393		
It is impossible to truly change one's sexual orientation.	0.548			
The idea that individuals have a "sexual orientation" is a social invention.	0.541			
Sexual orientation is set early on in life.	0.537	0.387		
The percentages of people in different sexual orientation groups are roughly the same all over the world.	0.529			
The existence of different sexual orientations is natural.	0.522			
Sexual orientation is a category with clear boundaries: A person is either gay/lesbian, bisexual, or heterosexual.		0.793	0.420	

Sexual orientation is a category with distinct boundaries: A person is either gay/lesbian or heterosexual.		0.767	0.366
A person has only one true sexual orientation.	0.484	0.680	
People who identify as bisexual are confused about their true sexual orientation.		0.676	0.361
People may reasonably identify as two sexual orientations at the same time.		0.474	
It is possible to be "partially" or "somewhat" gay or straight.		0.473	
Individuals with the same sexual orientation seem to be connected to one another by some invisible link.			0.632
People who have the same sexual orientation are very similar to one another.			0.557
It is possible to know about many aspects of a person once you know her or his sexual orientation.			0.525
There are more similarities than differences among people who have the same sexual orientation.			0.520
Knowing a person's sexual orientation tells you a lot about them.			0.512 0.334
It is usually possible to know a person's sexual orientation even without being told.			0.464
People who share the same sexual orientation pursue common goals.			0.442
People who have the same sexual orientation interact frequently with one another.			0.415
People tend to have a sense of group belonging based on their sexual orientation.			0.375
People with the same sexual orientation share a common fate.			0.370

Sexual orientation is an important characteristic of people.	0.802
A person's sexual orientation is an important attribute.	0.739
Using terms like "lesbian," "gay," "bisexual," and "heterosexual" only reinforces stereotypes.	0.469
If you don't know a person's sexual orientation, you can't really say that you know that person.	0.388
Most people view their sexual orientation as important to them.	0.372
It's useful to group people according to their sexual orientation.	0.349
People have access to different amounts of social power depending upon their sexual orientation.	

Appendix M

Correlation Matrix of Scores on SOBS Factors, NSS, RWA, and CSES

		NSS	RWA	CSES	Membership	Private	Public	Identity
Naturalness	α	-.025	-.056	.047	.140*	.004	.061	-.047
	N	312	296	309	316	317	321	317
Discreteness	α	.094	.280**	.054	.030	-.023	.104	.028
	N	320	303	317	323	325	328	324
Entitativity	α	.096	.084	.121*	.023	-.060	.142*	.123*
	N	316	299	310	317	318	322	318
Importance	α	.117*	-.184**	.324**	.245**	.185**	-.110*	.486**
	N	318	301	314	321	322	326	322
NSS	α		.029	-.075	-.124*	-.112*	-.096	.047
	N		297	311	317	318	322	319
RWA	α			-.296**	-.280**	-.322**	-.019	-.192**
	N			295	300	302	304	300
CSES Total	α				.796**	.805**	.498**	.698**
	N				319	319	319	319
Membership CSE	α					.662**	.195**	.435**
	N					323	326	322
Private CSE	α						.224**	.463**
	N						327	323
Public CSE	α							-.024
	N							327

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