

# A Meta-Analysis of Developmental Outcomes for Children of Same-Sex and Heterosexual Parents

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**ABSTRACT.** While there has been a recent upsurge in the number of studies related to children raised by gay and lesbian parents, the literature in this area continues to be small and wrought with limitations. This study presents a meta-analysis of the existing research and focuses on the developmental outcomes and quality of parent-child relationships among children raised by gay and lesbian parents. A total of 19 studies were used for the analysis and included both child and parent outcome measures addressing six areas. Analyses revealed statistically significant effect size differences between groups for one of the six outcomes: parent-child relationship. Results confirm previous studies in this current body of literature, suggesting that children raised by same-sex parents fare equally well to children raised by heterosexual parents. The authors discuss findings with respect to the implications for practitioners in schools.

**KEYWORDS.** Meta-analysis, gay and lesbian parents, heterosexual parents, children, developmental outcomes

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Gay and lesbian parenting is a topic that evokes feelings of opposition and disdain as well as acceptance and pride. Schools reflect the culture of our society, so the current social and political divide regarding homosexuality has an impact on those children who are raised by a gay or lesbian parent (Casper, Schultz, & Wickens, 1992; Ryan & Martin, 2000). Children raised by gay or lesbian parents face a number of challenges in the classroom. First, many teachers are not well educated on same-sex relationships and school administrators are reluctant to discuss the issue (Bliss & Harris, 1999). Second, many prospective teachers hold negative views toward gay and lesbian individuals, potentially adversely affecting the relationships these teachers will have with sexual minority students and families. Third, often teachers are not likely to initiate a safe and welcoming environment for gay and lesbian students or their parent(s) (Harris, 1997; Sears, 1991). Given the challenges same-sex parents face within the schools, it is critical that practitioners in schools be knowledgeable about the needs of children with gay or lesbian parents because practitioners play an integral part in improving school outcomes for all children.

The existing body of research comparing gay and lesbian parents with heterosexual parents has shown that parent sexual orientation is not related to negative psychological adjustment or overall negative developmental outcomes in children (Allen & Burrell, 1996, 2002; Anderssen, Amlie, & Ytteroy, 2002; Lambert, 2005). Despite the consistent message borne out by these studies, however, most gay and lesbian families frequently face discrimination both within and outside of the schools (Ryan & Martin, 2000), and many gay and lesbian parents continue to lose custody of their children (Stacey & Biblarz, 2001).

Despite the challenges and needs of children raised by gay and lesbian parents, professionals within school systems often lack knowledge or experience with sexual minority parents, which typically leads to a resistance in understanding and respecting the needs of both the parents and children (Ryan & Martin, 2000). Understanding what differences may or may not exist for children brought up with same-sex parents will benefit professionals within the schools in a number of ways. Primarily, it will allow school practitioners to work more effectively with these children, given that having knowledge about culturally diverse populations is a critical best practice for meeting the needs of both the students and their families (Victor & Fish, 1995).

The American Psychological Association's (2002) "Ethical Principles of Psychologists and Code of Conduct" mandates that professionals "...provide services, teach, and conduct research with populations and

in areas only within the boundaries of their competence . . .” (2.01a, p. 1063). It is clear from the research, however, that few psychologists are trained and prepared to work with same-sex families (Pilkington & Cantor, 1996). Moreover, there continues to be prejudice and discrimination in not only psychologists’ practice with same-sex individuals (Liddle, 1996) but also with teachers and other school personnel who work with gay and lesbian parents (Bliss & Harris, 1999; Ryan, 1998). For professionals within schools, nonbiased assessment and practice is a legal and ethical mandate. Thus, gaining an understanding of children’s development in the context of being raised with gay or lesbian parents challenges professionals’ own views about same-sex parenting, meeting the American Psychological Association (2002) standards for professionals to critically examine biases and prejudices held of particular groups. The present study will address this need by adding to school practitioners’ knowledge base regarding the effect of parent sexual orientation on children’s developmental outcomes.

It is difficult to estimate the number of children raised by a same-sex parent because many gay and lesbian individuals do not reveal their sexual orientation. Prevalence estimates range from 2 to 14 million children depending on the criteria specified in the study. These figures, however, may not accurately represent the diverse and sometimes informal caregiving arrangements in many same-sex families (Tasker, 2005). In other words, studies investigating the prevalence of same-sex parenting have yet to reveal the complex family constellations that are unique to gay and lesbian parents, thereby underestimating the number of children brought up with a gay or lesbian parent.

While there has been a recent upsurge in the number of studies related to children raised by gay and lesbian parents, the literature in this area continues to be small and wrought with limitations (Schumm, 2004; Stacey & Biblarz, 2001). In a critique of the studies done on the outcomes of children with same-sex parents, Schumm (2004) provides several limitations that underlie this line of research and that he believes researchers and policymakers should take into account when interpreting the absence of significant differences between children raised by heterosexual versus same-sex parents. First, it is difficult to obtain a random, representative sample of gay and lesbian parents. Because many same-sex parents are not open about their sexual orientation, it is often necessary to rely on volunteer participants, who may differ in important ways from gay and lesbian individuals unwilling to expose their sexual identities, thus resulting in biased samples. Second, much of the research conducted in this area is based on fairly small sample sizes since it is difficult to obtain subjects who are

willing to participate in studies assessing the impact of their sexual orientation on their children's development. A small sample necessarily leads to low statistical power, increasing the likelihood of failing to reject null hypotheses (Schumm, 2004). Because the samples tend to be small, they also tend to look fairly homogeneous: Caucasian, female, middle-class, urban, and well-educated. Few studies have included a diverse group of individuals, whether by race, class, or gender. The majority of the research conducted on children with same-sex parents is done primarily with lesbian mothers since they tend to have not only custody of the child but are often the primary caretakers as well—gay fathers are much less likely to be custodial parents (Bozett, 1987). And still other researchers have argued that there are meaningful differences, especially with respect to gender role development when children are raised by same-sex parents, and that researchers have downplayed the importance of these differences (Stacey & Biblarz, 2001).

Critics of the research performed with gay and lesbian parents, therefore, argue that the current data are not sufficient to make any conclusions regarding the effect of sexual orientation on various child outcomes (Belcastro, Gramlich, Nicholson, Price, & Wilson, 1993; Cameron & Cameron, 1997). Clearly, there is a need for more research aimed at understanding the lives of children who grow up in this type of nontraditional family setting. A quantitative synthesis of research of the effects of parent sexual orientation on child developmental outcomes would allow for a comparison that is more statistically powerful (Lipsey & Wilson, 2001), addressing a major limitation inherent in the studies that define this area of research.

Although there have been two previous meta-analyses investigating the effect of parent sexual orientation on child developmental outcomes (Allen & Burrell, 1996, 2002), there were several reasons for conducting the current study. Firstly, the Allen and Burrell (1996, 2002) meta-analyses were limited to studying the effects of parent sexual orientation on child psychological adjustment and child sexual orientation. The present study, however, examined the differences between children raised with same-sex parents and children raised with heterosexual parents on six outcomes. Secondly, since the publication of the most recent meta-analysis, there have been a number of published studies (two of which included the first random samples in this body of research) comparing the effect of parent sexual orientation on various child outcomes that enhanced the accuracy of the current meta-analysis. Thus, there was a need to review the literature through quantitative means to ascertain whether differences in developmental outcomes exist between children raised with heterosexual

or same-sex parents. Not only does meta-analysis allow for the reduction of Type II error by compensating for the small samples that define this body of research (Lipsey & Wilson, 2001) but it also enables others to replicate the analysis to further validate the study's findings (Allen & Burrell, 2002).

Therefore, to address the needs of professionals working with gay and lesbian parents within the schools and to add to the existing body of research examining the differences between children raised by same-sex parents and children raised by heterosexual parents, a comprehensive meta-analysis was conducted for the current study. Two questions were addressed in the analyses: (a) Does a child's developmental well-being, i.e., child gender role behavior, gender identity, sexual orientation, cognitive functioning, and psychological adjustment, or quality of parent-child relationship, vary by parents' sexual orientation? and (b) If there are between-study or between-group variations among outcome effect sizes, is it possible to explain these variations using different moderators such as children's gender, children's age, perspective of outcome, ethnicity, sampling method of study, and/or matching of participant characteristics?

## METHOD

### *The Search Process*

The location of relevant studies in this research synthesis was as exhaustive as possible and included both published and unpublished literature based on a manual as well as a computerized search of pertinent databases including PsychLit, PsycInfo, Sociological Abstracts, and ERIC. Search terms for literature searches included the words *lesbian*, *gay*, *same-sex*, *parent*, and *child/children*. As well as database resources, general search engines, e.g., Google, were employed with the above key terms to capture those studies that had not been included in the databases. Lastly, relevant organizations, e.g., COLAGE, Gay & Lesbian Parents Coalition International, and Parents & Friends of Lesbians and Gays (PFLAG), as well as literature reviews, ancestry searches, and comprehensive analyses conducted in the area (Allen & Burrell, 1996, 2002; Anderssen et al., 2002; Bozett, 1987, 1988, 1989; Cramer, 1986; Kirkpatrick, 1987; Kleber, Howell, & Tibbits-Kleber, 1992; Lambert, 2005; Nungesser, 1980; Patterson, 1992, 1995, 2000; Perrin, 2002; Tasker, 2005; Walters & Stinnett, 1971) were searched to include any additional bibliographic information. Results yielded over 200 references between 1979 and 2005.

Specific criteria for inclusion in the analysis were (a) a comparison between same-sex and heterosexual parents and/or their children; (b) statistical data that allowed for the calculation of an effect size (no qualitative or clinical data were included); and (c) data that have only been used once in a manuscript to avoid replication; i.e., studies that had published more than one article on the same participants were not included, as were studies that were done as unpublished theses and subsequently published. If the same subjects were used in multiple literatures, we combined them to obtain independent effect sizes. This selection process identified a total of 19 studies that met criteria for the research synthesis.

### *Coding of Studies*

Based on a literature review, a coding scheme was developed to identify salient features of each study. Two coders separately coded all features of included studies and then resolved coding discrepancies by discussing them. The intercoder reliability was .85.

### *Indicators of Child Developmental Outcomes*

Outcomes were categorized into six main areas including (a) parent and child relationship quality; (b) children's cognitive development; (c) children's gender role behavior; (d) children's gender identity; (e) children's sexual preference; and (f) children's social and emotional development (described herein as children's psychological adjustment). Each outcome measure is described as follows.

Parent-child relationship quality is a measure of either the child or parent's perception of the quality of their relationship. It is typically measured through structured interviews, standard observational techniques, or various standardized assessments such as the Family Relations Test, the Parenting Stress Index, or the Dyadic Adjustment Scale. Children's cognitive development purports to measure a child's intellectual ability and is measured through standardized, norm-referenced assessments such as the Wechsler Intelligence Scales (i.e., WPPSI, WISC). Children's gender role behavior and gender identity are often regarded in the literature as separate constructs, with gender role behavior defined as the extent to which individuals adhere to their respective culturally appropriate masculine and feminine behaviors, and gender identity is defined as an individual's sense of being male or female (Anderssen et al., 2002). Gender role behavior is most commonly measured through sex role scales integrated into

structured interviews, the Preschool Activity Inventory, or through assessments such as Block's Toy Preference Test or the Draw-a-Person test. There have also been numerous instruments and means of measuring gender identity including structured interviews regarding toy, game, and peer preferences, tests such as the Human Figure Drawing and Draw-a-Person test, and questionnaires like the Personal Attribute Questionnaire. The fifth outcome, children's sexual orientation (referred to as sexual preference in this study), is the "individual's physical activity with, interpersonal affection for, and erotic fantasies about members of the same or opposite biological sex" (De Cecco, 1981, p. 61). Most often when researchers measure this outcome they do so through use of blind questionnaires, semistructured interviews, or other survey measures. The final outcome, *child psychological adjustment*, is a blanket term referring to not only the child's emotional functioning but to the child's ability to adhere to socially defined standards of appropriate behavior. Therefore, the term *psychological adjustment* encompasses not only the child's overt displays of behavior but also the quality of peer relationships and degree of stigmatization experienced by children as well as their inner psychological health; e.g., self-esteem and overall mental health. Thus, for the present study, psychological adjustment took into account the prevalence of overt problem behaviors typically measured by assessments such as the Achenbach Child Behavior Checklist (CBCL), as well as reports of children's peer relations as measured by semistructured interviews, psychiatric assessments, self-report data, and assessments such as the Pictorial Scale of Perceived Competence, the Trait Anxiety and Beck Depression Inventories, and Social Acceptance for Young Children.

These outcomes were derived from the perspectives of adult and child (Allen & Burrell, 1996). Adult perspective was defined when child outcomes were obtained from an adult or through parent or teacher's observation, interview, or report of the child's behavior or attitude. Child perspective included self-report measures of attitudes, behaviors, or experiences, as well as tests conducted on the child; i.e., WISC.

### *Other Coded Variables*

The other coded variables were publication type (published vs. unpublished), study location (U.S. vs. non-U.S.), sampling method (convenience, purposive, cluster, random, stratified, or not indicated), assignment method (naturally occurring, matched, random, not indicated), participant characteristics (number of parents and children, mean age of parents and children,

gender of children), source of data (parent, teacher, or child), outcome measure (parent–child relationship quality, children’s cognitive development, children’s gender role behavior, children’s gender identity development, children’s sexual preference, and children’s psychological adjustment), and data analysis.

### *Effect Sizes*

The index used to represent differences of each outcome between children raised by a heterosexual parent and children raised by a same-sex parent was the standardized mean difference, which is often called Glass’s effect size or Cohen’s  $d$ ,

$$g_i = \frac{(\bar{Y}_1 - \bar{Y}_2)}{S_p}, \quad (1)$$

where  $\bar{Y}_1$  is the mean for children with a same-sex parent,  $\bar{Y}_2$  is the mean for the children with a heterosexual parent, and  $S_p$  is the standard deviation pooled across the two groups (Cohen, 1988). Effect sizes were computed such that positive values were in favor of children’s development with a same-sex parent.

The approximations, based on dichotomous data, were obtained from the following two methods. First, when authors provided chi-square statistics along with the sample size used in their study, the standardized mean difference was computed using the formula (2) suggested by Wilson (2002):

$$g_i = 2\sqrt{\frac{\chi^2}{N - \chi^2}}, \quad (2)$$

where  $\chi^2$  is the chi-square statistic based on a 2 by 2 contingency table and  $N$  is the overall sample size used in the chi-square test. Second, the standardized mean difference for phi-coefficient was approximated by:

$$g_i = \frac{2 * r}{\sqrt{1 - r^2}}, \quad (3)$$

where  $r$  is the phi-coefficient. Third, in cases where frequencies of children for each outcome variable were provided, the authors computed the mean

proportion difference of each category and its variance as suggested by Fleiss (1994).

Next, it was necessary for the authors to adjust for small sample size as described by Hedges (1981),

$$d_i = 1 - \frac{3}{(4m_i - 1)} * g_i, \quad (4)$$

where  $c(m_i) \approx m_i = n_i^1 + n_i^2 - 2$ , and  $n_i^1$  and  $n_i^2$  were sample sizes for children in the same-sex parent group and those in the heterosexual parent group, respectively.

The variance of the unbiased standardized mean effect size,  $d_i$ , was further computed as

$$\sigma^2(d_i) = \frac{(n_i^1 + n_i^2)}{n_i^1 n_i^2} + \frac{d_i^2}{2(n_i^1 + n_i^2)}, \quad (5)$$

### **Statistical Analyses**

Our analyses follow the fixed-effects categorical models for each outcome variable (Raudenbush, 1994). The overall mean differences between children with heterosexual and same-sex parents were first examined. In this overall analysis, the authors included all the effect sizes obtained from 19 studies despite dependencies among multiple outcomes from several studies—these dependencies are addressed below.

Next, the authors separately examined the individual mean effect sizes for all six outcomes under the fixed-effects categorical model. One important statistic used in this approach was the homogeneity test, denoted below as  $Q_{(df)}$  (Hedges, 1994). Under the appropriate null hypothesis for each  $Q$ , the statistic follows a chi-square distribution with degrees of freedom (df) that relate to the number of effects. If the  $Q$  statistic is not significant, it is necessary to maintain a fixed-effects model. If the  $Q$ -statistic for certain outcomes is significant, then the source of inconsistency between studies is taken into account by inputting one or more hypothesized moderator variables. The major moderators used in the fixed-effects categorical models were (a) source of data (parent, teacher, or child); (b) child gender; (c) measures; (d) study location; (e) sampling method; and (f) whether the study controlled for important moderator variables.

## RESULTS

### *Description of the Studies*

The 19 studies included in this research synthesis allowed for the computation of 64 effect sizes. Studies often have multiple samples (which provide different independent correlation coefficients) as well as multiple mean effect sizes for single samples that depend on multiple outcome measures, different perspectives of outcome measures, and subscales of outcome measures. When multiple samples were identified, the authors treated each sample independently. For example, Wainright, Russell, and Patterson (2004) reported separate mean effect sizes for girls and boys. Therefore, we treated girls and boys in the Wainright et al. study as two independent samples. When multiple outcomes were reported in studies, we used the most fine-grained subsets for our effect size computation.

The total number of participants included in the analyses was 564 for same-sex parent families, and 641 for heterosexual parent families. The mean age of children represented in the studies was 10.4 years (range 5–24 years).

### *Assessing the Presence of Publication Bias*

Publication bias arises when the probability that a study is published depends on the statistical significance of its results. Publication bias represents the degree to which studies in the meta-analysis truly represent the broader population in which researchers are interested. One way to assess whether publication bias is likely to be problematic for a set of studies is to examine the funnel plot. Since mean effect sizes from smaller studies show more variability than those from larger studies, a plot of mean effect sizes against sample sizes should resemble a funnel if publication bias is not present. The plot of mean effect sizes did in fact resemble a funnel, indicating that publication bias was not present for the set of studies used for this analysis.

### *Overall Homogeneity Test*

A homogeneity test using the fixed-effects model with 64 effect sizes between heterosexual and same-sex parent groups was first examined. All 64 effect sizes obtained from the 19 studies did not all appear to come from a single population with a common effect size ( $Q_{\text{between}(63)} = 93.72, p = .007$ ). This was expected since a total of 64 effect sizes that were largely

TABLE 1. Outcome Measure Results by Perspective of Data From the ANOVA-Like Fixed-Effect Model

Outcome	K	Q	p	$\bar{d}$	SE	95% C.I.	
						LL	UL
<i>Parent-child Relationship</i>	14	21.29	0.06	0.22**	.06	0.10	0.35
<i>Adult perspective</i>	10	13.22	0.15	0.32**	.07	0.17	0.32
<i>Child perspective</i>	4	1.91	0.59	-0.02	.07	-0.25	0.21
<i>Cognitive Development</i>	3	1.05	0.59	0.15	.13	-0.13	0.42
<i>Gender Role Behavior</i>	13	25.38*	0.01	-0.08	.07	-0.22	0.06
<i>Adult perspective</i>	4	8.33*	0.04	-0.09	.14	-0.35	0.17
<i>Child perspective</i>	9	17.05*	0.03	-0.08	.08	-0.24	0.09
<i>Gender Identity</i>	3	1.12	0.57	0.07	.18	-0.28	0.43
<i>Child Sexual Preferences</i>	5	5.05	0.28	0.20	.12	-0.05	0.45
<i>Psychological Adjustment</i>	26	28.52	0.28	0.06	.05	-0.02	0.18
<i>Adult perspective</i>	17	19.03	0.26	0.04	0.06	-0.08	0.15
<i>Child perspective</i>	9	8.01	0.43	0.17	0.09	-0.002	0.34

Note. K = number of effect sizes; Q = Q-statistics for homogeneity test; \*\*  $p < .01$ , \*  $p < .05$ ;  $\bar{d}$  = Mean effect-size.

diverse in terms of multiple outcomes, measures, and perspective of data set were all simultaneously analyzed in the overall fixed-effects model. Therefore, a random-effects model was more appropriate to describe the average mean differences between these two groups across all studies. As a result, the weighted average under the random-effects model of the overall unbiased effect size for these 19 studies was found to be .10 with a standard error of .04. The 95% confidence interval for the weighted average mean differences on all children's developmental outcomes between children with same-sex and heterosexual parents ranged from .02 to .18.

However, all 64 effect sizes used in the homogeneity test were not independent (given that there were multiple outcomes reflecting two different perspectives of outcome measures from the same studies). Therefore, the authors separated out all 64 effect sizes into 8 categories based on their outcome measures reflecting different perspectives of outcomes (adult vs. child) and performed an ANOVA-like fixed effects model of the 64 effect sizes. The significant between-study Q statistic ( $Q_{\text{between}(8)} = 18.94$ ,  $p = .01$ ) indicated that six outcome measures reflecting both adult and child perspectives fully explained between-study variations for the 64 effect sizes. Table 1 shows the detailed results from the categorical

fixed-effects model using six outcome measures according to both adult and child perspectives.

### *Parent–Child Relationship*

Under the fixed-effect model for parent–child relationship, 14 effect size measures appeared to all come from a single population with an overall mean effect size comparing same-sex and heterosexual parent groups ( $Q_{\text{between}(14)} = 21.29$ ,  $p = .06$ ). The overall mean difference on parent–child relationship across 14 effect sizes was .22 with a standard error of .06. Furthermore, a 95% confidence interval for the overall mean difference on parent–child relationship ranged from .10 to .35, indicating that same-sex parents report having a significantly better relationship with their children compared to heterosexual parents' reports ( $z = 2.84$ ,  $p < .01$ ). However, even though the relationship between same-sex parents and their children was significantly better when based on the adult perspective (\*\*eq\*\*,  $z$  (\*\*eq\*\*) = 4.57), there was not a significant difference between groups for parent–child relationship when reported by children (\*\*eq\*\*). In other words, same-sex parents reported a significantly better relationship with their children than did heterosexual parents, but the children's perception of this relationship did not significantly differ depending on the sexual orientation of their parent.

### *Gender Role Behavior*

Under the fixed effect model, 13 effect size measures of children's gender role behavior were found to not come from a single population ( $Q_{\text{between}(13)} = 25.38$ ,  $p = .01$ ). Since there was certain variation in the overall mean effect size of gender role behavior across 13 effect sizes, the authors examined the possibility of a moderator variable to explain the inconsistent findings regarding gender role behavior using the fixed-effect categorical model. Moderators included (a) source of data (parent, teacher, or child), (b) child gender, (c) measures, (d) study location, (e) sampling method, and (f) whether the study controlled for important moderator variables. However, no significant moderators were found to explain between-study variations for the outcome of child gender role development.

### *Gender Identity*

Even though there were only three effect sizes regarding the gender identity outcome, the consistency of these three effect sizes was assessed

using the fixed-effect model. Under the fixed-effect model, these three studies did in fact provide consistent results ( $Q_{\text{between}(3)} = 1.12, p = .57$ ). The overall mean difference for gender identity across three effect sizes was .07 with a standard error of .18. The 95% confidence interval for the overall mean difference for the gender identity outcome ranged from  $-.28$  to  $.43$ , indicating no statistically significant difference for gender identity between children raised by heterosexual parents and those raised by same-sex parents.

### *Children's Cognitive Development*

Under the fixed-effect model, three effect sizes provided consistent results ( $Q_{\text{between}(3)} = 1.05, p = .59$ ). The overall mean difference for cognitive development across three effect sizes was .15 with a standard error of .13. The 95% confidence interval ranged from  $-.13$  to  $.42$ , indicating no statistically significant difference for cognitive development between children raised by heterosexual parents and those raised by same-sex parents.

### *Children's Psychological Adjustment*

Under the fixed-effect model, 26 effect size measures related to children's psychological adjustment appeared to all come from a single population with an overall mean effect size comparing children with same-sex and heterosexual parents ( $Q_{\text{between}(26)} = 28.52, p = .28$ ). The overall mean difference on children's psychological adjustment across 26 effect sizes was .06 with a standard error of .05. The 95% confidence interval for the overall mean difference on children's psychological adjustment ranged from  $-.02$  to  $.18$ , indicating no significant difference of children's psychological adjustment according to parents' sexual orientation. Further, no difference was found between children's psychological adjustment across groups depending on the perspective of the data.

### *Children's Sexual Preferences*

Under the fixed-effect model, five effect size measures related to children's sexual preferences appeared to all come from a single population with an overall mean effect size comparing children from same-sex and heterosexual parent groups ( $Q_{\text{between}(5)} = 5.05, p = .28$ ). The overall mean difference on children's sexual preferences across five effect sizes was .20 with a standard error of .12. The 95% confidence interval for the overall mean difference on children's sexual preferences ranged from  $-.05$

to .45, indicating that there was no significant difference of children's sexual preferences between children raised by same-sex and heterosexual parents.

## DISCUSSION

This study sought to examine possible associations between parent sexual orientation and six child outcome measures. Two questions were addressed in the analysis: (a) Does a child's developmental well-being or quality of parent-child relationship vary by parents' sexual orientation? and (b) If there are between-study or between-group variations among outcome effect sizes, is it possible to explain these variations using moderator variables?

With respect to the first question, results of this study confirmed previous findings regarding associations between parent sexual orientation and child developmental outcomes, namely that parent sexual orientation was not a salient predictor for children's development (Fitzgerald, 1999; Lambert, 2005; Tasker, 2005). However, because there were significant differences between groups on the outcome of parent-child relationship, it was necessary to account for possible moderators in the relationship between parent sexual orientation and developmental outcomes. Thus, for the second question addressed in this study, we found that the perspective of the data moderated the relationship between parent sexual orientation and the quality of parent-child relationship. No moderator accounted for the variance among studies on the outcome of gender role behavior, however.

In sum, children raised by same-sex and heterosexual parents were found to not differ significantly in terms of their cognitive development, gender role behavior, gender identity, psychological adjustment, or sexual preferences. For the outcome that was significantly different between children of same-sex and heterosexual parents, the finding was in favor of same-sex parents. For the outcome of parent-child relationship, same-sex parents reported having significantly better relationships with their children than did heterosexual parents. Similar findings have been documented in previous studies with children of lesbian parents expressing more positive relationships with their mothers' new partner than children of heterosexual mother families (Tasker & Golombok, 1995). There are several hypotheses that could explain this finding, some of which stem from the limitations inherent in the studies used for the analysis.

One possibility for explaining the between-group difference for parent-child relationship is the homogeneous nature of the participants. As Stacey and Biblarz (2001) expressed in their review of the psychological research, "... the effects of parental gender trump those of sexual orientation" (p. 176). In other words, although the goal of this study was to assess child outcomes from same-sex and heterosexual parents, the vast majority of the studies compiled for the analysis consisted of Caucasian, middle-class, lesbian mothers that represented the same-sex parent comparison group. More specifically, the majority of the studies conducted in this area of research involved divorced lesbian mothers compared to single heterosexual mothers. Same-sex parents inevitably create a different dynamic than opposite-sex parents. It has been found that often the new partner is described as a second mother in a lesbian-headed family, whereas with heterosexual parents the new partner is described more often as an intruder (Tasker, 2005). Therefore, the parent gender dynamics appear to affect the parent-child relationship, with lesbian co-partners having a closer and more positive relationship with children than heterosexual partners. The significant difference in favor of same-sex parent-child relationships could, thus, likely be due more to female gender than sexual orientation of the parent given that mothers are typically more involved in child-rearing than are fathers (Stacey & Biblarz, 2001).

In addition to the parent gender dynamics that may have played a role in the outcomes of the current meta-analysis, homogenous samples limit the degree to which the findings can be generalized to the larger population of same-sex families. Limited data exist on the interaction and impact of moderator variables on the developmental outcomes of children with same-sex parents. Thus, an additional venue for future research would be examining possible differences in children's development based on demographic variables such as race, ethnicity, socioeconomic status, geographic location, religious preference, culture, and length of time raised by same-sex parent(s) in order to enhance external validity.

Two limitations inherent in the analysis could also explain the better parent-child relationship reported by same-sex parents. One limitation concerns the samples used in the meta-analytic studies. It is difficult to obtain a random, representative sample of gay and lesbian parents, resulting in biased samples. In a similar vein, the use of self-report data poses a threat to internal validity. Thus, besides the bias inherent in obtaining volunteer participants, there is also social desirability bias where research participants may represent themselves in the best way possible. Because gay and lesbian individuals are continually fighting inequity and assumptions regarding

their efficacy as parents, it is possible that the "... findings of these studies may be patterned by self-presentation bias," or a desire to "... offset and reverse negative images and discrimination" (Fitzgerald, 1999, p. 69). These limitations need to be taken into account as they could explain the difference found between same-sex and heterosexual parents on the parent-child relationship outcome. Given that gay and lesbian parents are continuously under attack with respect to their fitness as parents (Herek, 2006), same-sex parents could be under more pressure to report a better parent-child relationship than heterosexual parents.

Another possibility for explaining the significantly higher parent-child relationship reports from same-sex parents involves the protective role of this relationship. Given the negative societal and cultural messages children receive regarding their gay or lesbian parent, parents likely may try to maintain a close relationship with their children to serve as a buffer against the prejudice and stigmatization their children may face. Little is known about how parents help their children overcome the social stigma associated with having a same-sex parent. Future research is needed to uncover the many processes involved in lesbian and gay parent-child relationships, for exploring these dynamics would be fruitful research applicable to a number of nontraditional families.

Although the variance among studies for children's gender role development could not be adequately explained in the current analysis, the significant variation for this outcome has also been documented in previous research (Green, Mandel, Hotvedt, Gray, & Smith, 1986; Hoeffler, 1981; Steckel, 1987), suggesting that children raised by same-sex parents may exhibit different sex-typed behaviors than do children raised by heterosexual parents. In a review of the literature examining the influence of parent sexual orientation on children's development, Stacey and Biblarz (2001) critiqued previous studies for downplaying meaningful differences associated with parent sexual orientation on children's gender development as well as sexual preferences and behaviors. Through the authors' review of 21 studies, they found significant evidence demonstrating that children's gender role behavior does differ according to the sexual orientation of the parent (Green et al., 1986; Hoeffler, 1981; Steckel, 1987). However, despite the fact that daughters of lesbian mothers displayed greater interest in nontraditional feminine activities and overall behaved in ways that did not conform to culturally accepted female standards, sons of lesbian mothers expressed a wider range of behaviors (Stacey & Biblarz, 2001). Boys raised with lesbian mothers tended to be less aggressive and had preferences for less masculine play activities than boys with heterosexual

parents, but when it came to their career goals and style of dress, boys with lesbian mothers exhibited greater gender conformity than did the daughters with lesbian mothers (Green et al., 1986; Stacey & Biblarz, 2001; Steckel, 1987). Therefore, gender role development did not only differ among children raised by parents with different sexual orientations, but there was also variation in children's sex-typed behaviors according to the child's gender. Although further research is needed to help confirm these findings, sex-typed behavior differences among children brought up with parents of different sexual orientations should not come as a surprise given current gender theories. Our results, therefore, could suggest that children's gender role development is likely affected by a multitude of complex variables—not solely the parents' sexual orientation (Stacey & Biblarz, 2001), which could possibly explain the significant variation observed between studies.

However, when interpreting the current findings, a number of limitations inherent in this analysis could also explain the variance of gender role behavior found between studies. One possibility is the variation in the way this outcome was measured. Although we went to great lengths to ensure that categories were as clearly and consistently defined as possible, the researchers whose findings were compiled may have used measures that varied in important ways. For example, many of the methods used to measure gender role behavior have untested psychometric properties, which may have affected our findings given the large number of qualitative indicants for measuring this outcome. Inconsistent definitions and measurements throughout the research of gender role behavior would therefore lead to a significant variance between studies.

Inherent conscious or unconscious biases within the data collection and procedures are additional limitations that may have affected the interpretation of children's gender-role behavior. Given that many studies' purposes are not blind to the participants or the individuals collecting and analyzing the data (Tasker, 2005), it is important to consider how these biases may affect results on children's sex-typed behaviors, which could have possibly contributed to the variation found among studies.

A further limitation pertains to separately calculating the average effect sizes for various subgroups depending on the multiple outcomes related to children's developmental well-being. Due to the unavailability of intercorrelations among multiple outcome measures, it was not possible to use a multivariate model, which limited the extent to which the authors could account for the dependency among multiple outcomes and thus obtain more accurate point estimates. Yet, despite the inability to obtain the

full correlation matrix for multiple outcome measures, the findings from this analysis continue to confirm those of previous studies in that parent sexual orientation was not a salient factor in predicting children's developmental outcomes. Because of the limitations inherent in the current body of research in this area, use of more complex statistical tools is at this point unattainable. Although the results must be interpreted with caution, they should also be understood within the larger body of studies that consistently suggest that children with same-sex parents fare just as well as children with heterosexual parents.

### *Implications for School Professionals*

There are a number of implications that arise from the findings of the current study. However, best practices for school professionals when working with same-sex parents have been previously outlined in detail in the areas of staff development and training, school curriculum development, resource provider, assessment, therapy/counseling, and consultation (Victor & Fish, 1995). Therefore, for the purposes of avoiding replication, a brief discussion specific to the implications of the current study's findings will follow.

Given that parent sexual orientation was not found to exert a significant effect on children's development, it is imperative that professionals within the school work to challenge negative assumptions that they or their fellow school colleagues may hold about gay and lesbian parents. Because many professionals within the school are unknowledgeable or hold negative views about same-sex parents (Bliss & Harris, 1999; Harris, 1997; Sears, 1991), it is critical that practitioners play an advocacy role for these children through informing teachers, administrators, and other school personnel regarding the developmental outcomes of children with same-sex parents. Professional in-services and training for school personnel directed at increasing awareness and knowledge regarding children with gay and lesbian parents will serve to enhance the school climate for not only these children but many students who grow up in a variety of diverse family structures. Professional development resources for school staff in creating safe schools are available through the Lambda Legal organization (n.d.).

The need to alter negative school climates is imperative for the well-being of all children but may be particularly important for students whose parents are gay or lesbian. In one of the few studies examining the school experiences of children with gay and lesbian parents, Vivien (2001) found that an all-too-common thread underlying many of these children's school

experiences was the lack of responsiveness and concern with respect to homophobic language and teasing. Children with same-sex parents learned quickly not to trust school personnel, for the majority of teachers and other school staff would often take a blind eye to the bullying and violence that was directed at their parents' sexual orientation. The effects of bullying are well documented (Bontempo & D'Augelli, 2002; Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998; Hershberger & D'Augelli, 1995; Russell, Franz, & Driscoll, 2001). Despite the fact that the present study confirmed previous research documenting the well-being of children with same-sex parents, many of these children attend schools in which the climate is both unsafe and unwelcoming (Casper, Cuffaro, Schultz, Sillin, & Wickens, 1996; Fontaine, 1997; Vivien, 2001). Creating gay-straight alliances and support networks for these children both within and outside of the schools will serve to buffer some of these negative effects (Vivien, 2001). For example, the Gay-Straight Alliance Network (n.d.) is a national organization that provides resources to help schools establish local chapters. School practitioners must be prepared to educate and train others within the school on the topic of heterosexism and to what degree the assumption that everyone is heterosexual affects how children from same-sex families are treated. Addressing these issues, forming support systems, and educating school staff on the effects of bullying and discrimination on children are steps that school professionals can take to enhance the school experiences and outcomes of children with gay and lesbian parents.

## REFERENCES

- Allen, M., & Burrell, N. (1996). Comparing the impact of homosexual and heterosexual parents on children: Meta-analysis of existing research. *Journal of Homosexuality*, 32, 19–35.
- Allen, M., & Burrell, N. (2002). Sexual orientation of the parent: The impact on the child. In M. Allen & R. W. Preiss (Eds.), *Interpersonal communication research: Advances through meta-analysis* (pp. 125–143). Mahwah, NJ: USum Associates Publishers.
- American Psychological Association. (2002). Ethical principles of psychologists and code of conduct. *American Psychologist*, 57(12), 1060–1073.
- Anderssen, N., Amlie, C., & Ytteroy, E. A. (2002). Outcomes for children with lesbian or gay parents: A review of studies from 1978 to 2000. *Scandinavian Journal of Psychology*, 43(4), 335–351.
- Belcastro, P. A., Gramlich, T., Nicholson, T., Price, J., & Wilson, R. (1993). A review of data based studies addressing the affects of homosexual parenting on children's sexual and social functioning. *Journal of Divorce and Remarriage*, 20, 105–122.

- \*Bigner, J. J., & Jacobsen, R. B. (1989). Parenting behaviors of homosexual and heterosexual fathers. *Journal of Homosexuality*, 18, 173–186.
- Bliss, G. K., & Harris, M. B. (1999). Teachers' views of students with gay or lesbian parents. *Journal of Gay, Lesbian, and Bisexual Identity*, 4(2), 149–171.
- Bontempo, D. E., & D'Augelli, A. R. (2002). Effects of at-school victimization and sexual orientation on lesbian, gay, or bisexual youths' health risk behavior. *Journal of Adolescent Health*, 30, 364–374.
- Bozett, F. (1987). Children of gay fathers. In F. Bozett (Ed.), *Gay and lesbian parents* (pp. 38–57). New York: Praeger.
- Bozett, F. (1988). Gay fatherhood. In P. Bronstein & C. Cowan (Eds.), *Fatherhood today: Men's changing role in the family* (pp. 214–235). New York: John Wiley & Sons.
- Bozett, F. (1989). Gay fathers: A review of the literature. *Journal of Homosexuality*, 18(1/2), 137–162.
- Brewaey, A., Ponjaert, I., Van Hall, E. V., & Golombok, S. (1997). Donor insemination: Child development and family functioning in lesbian mother families. *Human Reproduction*, 12(6), 1349–1359.
- Cameron, P., & Cameron, K. (1997). Did the APA misrepresent the scientific literature to courts in support of same-sex custody? *Journal of Psychology*, 131, 313–332.
- Casper, V., Cuffaro, H. K., Schultz, S., Sillin, J. G., & Wickens, E. (1996). Toward a most thorough understanding of the world: Sexual orientation and early childhood education. *Harvard Educational Review*, 66, 271–293.
- Casper, V., Schultz, S., & Wickens, E. (1992). Breaking the silences: Lesbian and gay parents and the schools. *Teachers College Record*, 94(1), 109–137.
- \*Chan, R. W., Raboy, B., & Patterson, C. J. (1998). Psychological adjustment among children conceived via donor insemination by lesbian and heterosexual mothers. *Child Development*, 69(2), 443–457.
- Children of Lesbian and Gays Everywhere. Retrieved from <http://www.colage.org>
- Cohen, J. (1988). Set correlation and contingency tables. *Applied Psychological Measurement*, 12, 425–434.
- Cramer, D. (1986). Gay parents and their children: A review of the research and practical implications. *Journal of Counseling and Development*, 64, 504–507.
- De Cecco, J. P. (1981). Definition and meaning of sexual orientation. *Journal of Homosexuality*, 6(4), 51–67.
- Fitzgerald, B. (1999). Children of lesbian and gay parents: A review of the literature. *Marriage and Family Review*, 29, 57–75.
- Flaks, D., Ficher, I., Masterpasqua, F., & Joseph, G. (1995). Lesbians choosing motherhood: A comparative study of lesbian and heterosexual parents and their children. *Developmental Psychology*, 31, 105–114.
- Fleiss, J. L. (1994). Measures of effect size for categorical data. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 245–260). New York: Russell Sage Foundation.

- Fontaine, J. (1997). The sound of silence: Public school response to the needs of gay and lesbian youth. *Journal of Gay and Lesbian Social Services*, 7, 101–109.
- Garofalo, R., Wolf, R. C., Kessel, S., Palfrey, J., & DuRant, R. H. (1998). The association between health risk behaviors and sexual orientation among a school-based sample of adolescents. *Pediatrics*, 101, 895–902.
- Gay & Lesbian Parents Coalition International. Retrieved from <http://www.glpci.org>
- Gay-Straight Alliance Network. (n.d.). *Empowering youth activists to fight homophobia and transphobia*. Retrieved June 4, 2006, from <http://www.gsanetwork.org>
- \*Golombok, S., Perry, B., Burston, A., Murray, C., Mooney-Somers, J., Stevens, M., et al. (2003). Children with lesbian parents: A community study. *Developmental Psychology*, 39, 20–33.
- \*Golombok, S., Spencer, A., & Rutter, M. (1983). Children in lesbian and single-parent households: Psychosexual and psychiatric appraisal. *Journal of Child Psychology and Psychiatry*, 24(4), 551–572.
- \*Golombok, S., Tasker, F., & Murray, C. (1997). Children raised in fatherless families from infancy: Family relationships and the socioemotional development of children of lesbian and single heterosexual mothers. *Journal of Child Psychology*, 38(7), 783–791.
- \*Green, R., Mandel, J., Hotvedt, M., Gray, J., & Smith, L. (1986). Lesbian mothers and their children: A comparison with solo parent heterosexual mothers and their children. *Archives of Sexual Behavior*, 15(2), 167–184.
- Harris, M. B. (Ed.). (1997). *School experiences of gay and lesbian youth: The invisible minority*. Binghamton, NY: Haworth Press.
- Hedges, L. (1981). Distributed theory for Glass's estimator of effect size and related estimators. *Journal of Educational Statistics*, 6, 107–128.
- Hedges, L. (1994). Fixed effects models. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 285–299). New York: Russell Sage Foundation.
- Herek, G. M. (2006). Legal recognition of same-sex relationships in the United States: A social science perspective. *American Psychologist*, 61(6), 607–621.
- Hershberger, S. L., & D'Augelli, A. R. (1995). The impact of victimization on the mental health and suicidality of lesbian, gay, and bisexual youths. *Developmental Psychology*, 31, 65–74.
- \*Hoeffter, B. (1981). Children's acquisition of sex-role behavior in lesbian-mother families. *American Journal of Orthopsychiatry*, 51, 536–544.
- \*Huggins, S. (1989). A comparative study of self-esteem of adolescent children of divorced lesbian mothers and divorced heterosexual mothers. *Marriage and Family Review*, 18(1/2), 123–135.
- \*Javaid, G. (1983). The children of homosexual and heterosexual single mothers. *Child Psychiatry and Human Development*, 23, 235–248.
- Kirkpatrick, M. (1987). Clinical implications of lesbian mother studies. *Journal of Homosexuality*, 14(1/2), 201–211.
- \*Kirkpatrick, M., Smith, C., & Roy, R. (1981). Lesbian mothers and their children: A comparative survey. *American Journal of Orthopsychiatry*, 51(3), 545–551.
- Kleber, D., Howell, R., & Tibbits-Kleber, A. (1992). *The impact of parental homosexuality in child custody cases: A review of the literature*. Seattle, WA: Lesbian Mothers Defense Fund.

- Lambda Legal. (n.d.). *Making schools safe for lesbian, gay, bisexual, and transgender students: A resource guide*. Retrieved June 4, 2006, from <http://www.lambdalegal.org>
- Lambert, S. (2005). Gay and lesbian families: What we know and where to go from here. *The Family Journal: Counseling and Therapy for Couples and Families*, 13(1), 43–51.
- Liddle, B. (1996). Therapist sexual orientation, gender, and counseling practices as they relate to ratings of helpfulness by gay and lesbian clients. *Journal of Counseling Psychology*, 43(4), 394–401.
- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage.
- \*McNeill, K. F., & Rienzi, B. M. (1998). Families and parenting: A comparison of lesbian and heterosexual mothers. *Psychological Reports*, 82, 59–62.
- \*Mucklow, B., & Phelan, G. (1979). Lesbian and traditional mothers' responses to adult response to child behavior and self-concept. *Psychological Reports*, 44, 880–882.
- Nungesser, L. (1980). Theoretical bases for research on the acquisition of social sex-roles by children of lesbian mothers. *Journal of Homosexuality*, 5, 177–187.
- Parents & Friends of Lesbians and Gays. Retrieved from <http://www.pflag.org>
- Patterson, C. J. (1992). Children of lesbian and gay parents. *Child Development*, 63, 1025–1042.
- Patterson, C. J. (1995). Lesbian mothers, gay fathers and their children. In A. R. D'Augelli & C. J. Patterson (Eds.), *Lesbian, gay and bisexual identities over the lifespan: Psychological perspectives* (pp. 262–290). Oxford, England: Oxford University Press.
- Patterson, C. (2000). Family relationships of lesbians and gay men. *Journal of Marriage and Family*, 62, 1052–1069.
- Perrin, E. C. (2002). Technical report: Coparent or second-parent adoption by same-sex parents. *American Academy of Pediatrics*, 109(2), 341–344.
- Pilkington, N., & Cantor, J. (1996). Perceptions of heterosexual bias in professional psychology programs: A survey of graduate students. *Professional Psychology: Research and Practice*, 27(6), 604–612.
- \*Puryear, D. (1983). *A comparison between the children of lesbian mothers and the children of heterosexual mothers*. Unpublished doctoral dissertation, California School of Professional Psychology, Berkeley.
- Raudenbush, S. W. (1994). Random effects models. In H. Cooper & L. V. Hedges (Eds.), *The handbook of research synthesis* (pp. 301–321). New York: Russell Sage Foundation.
- \*Rees, R. (1980). *A comparison of children of lesbian and single heterosexual mothers on three measures of socialization*. Unpublished doctoral dissertation, California School of Professional Psychology, Berkeley.
- Russell, S. T., Franz, B. T., & Driscoll, A. K. (2001). Same-sex romantic attraction and experiences of violence in adolescence. *American Journal of Public Health*, 91, 903–906.
- Ryan, D., & Martin, A. (2000). Lesbian, gay, bisexual, and transgender parents in the school systems. *The School Psychology Review*, 29(2), 207–216.
- Ryan, D. P. (1998). *Gay/lesbian parents and school personnel: The contexts that inhibit or support the home/school partnership*. Unpublished doctoral dissertation, Teachers College, Columbia University, New York.

- \*Scallen, A. (1982). *An investigation of paternal attitudes and behavior in same-sex and nongay fathers*. Unpublished doctoral dissertation, California School of Professional Psychology, San Diego.
- Schumm, W. R. (2004). What was really learned from Tasker and Golombok's (1995) study of lesbian and single parent mothers? *Psychological Reports*, 94(2), 422–424.
- \*Schwartz, J. (1986). *An exploration of personality traits in daughters of lesbian mothers*. Unpublished doctoral dissertation, California School of Professional Psychology, San Diego.
- Sears, J. T. (1991). Educators, homosexuality, and homosexual students: Are personal feelings related to professional beliefs? *Journal of Homosexuality*, 22, 29–79.
- Stacey, J., & Biblarz, T. (2001). (How) Does the sexual orientation of parents matter? *American Sociological Review*, 66, 159–183.
- Steckel, A. (1987). Psychological development of children of lesbian mothers. In F. Bozett & W. Bozett (Eds.), *Gay and lesbian parents* (pp. 75–85). New York: Praeger.
- Tasker, F. (2005). Lesbian mothers, gay fathers, and their children: A review. *Journal of Developmental & Behavioral Pediatrics*, 26(3), 224–240.
- Tasker, F., & Golombok, S. (1995). Adults raised as children in lesbian families. *American Journal of Orthopsychiatry*, 65(2), 203–215.
- Victor, S. B., & Fish, M. C. (1995). Lesbian mothers and their children: A review for school psychologists. *School Psychology Review*, 24(3), 456–479.
- Vivien, R. (2001). School experiences of the children of gay and lesbian parents. *Family Matters*, 59, 28–34.
- \*Wainright, J. L., Russell, S. T., & Patterson, C. J. (2004). Psychological adjustment, school outcomes, and romantic relationships of adolescents with same-sex parents. *Child Development*, 75(6), 1886–1898.
- Walters, J., & Stinnett, N. (1971). Parent-child relationships: A decade of review of research. *Journal of Marriage and Family*, 33, 70–111.
- Wilson, D. B. (2002). *Effect sizes*. Retrieved May, 2006, from <http://mason.gmu.edu/~dwilsonb/downloads/effect.sizes.ppt>

