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Bias and Accuracy in Children's Perceived Acceptance: Sex and Ethnic Differences

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THE FLORIDA STATE UNIVERSITY
COLLEGE OF ARTS AND SCIENCES

BIAS AND ACCURACY IN CHILDREN'S PERCEIVED ACCEPTANCE:
SEX AND ETHNIC DIFFERENCES

By

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TABLE OF CONTENTS

List of Tables	vi
List of Figures	vii
Abstract	viii
INTRODUCTION	1
Measuring Perceived and Actual Acceptance	1
Measures of Discrepant Self-Perceptions	3
Research on Sex Differences	4
Research on Ethnic Differences	7
Present Study	9
Hypotheses	11
METHODS	14
Participants	14
Measures	14
Actual Acceptance	14
Perceived Acceptance	14
Social Acceptance Scores	14
Dyadic Accuracy	15
Dyadic Perceptual Bias	15
General Perceptual Bias	15
Procedure	16
RESULTS	17
Preliminary Analyses	17
Measures of Discrepant Self-Perceptions by Perceiver and Reference Group Sex	18
Measures of Discrepant Self-Perceptions By Perceiver and Reference Group Ethnicity	23
DISCUSSION	26

Familiarity Breeds Accuracy	26
Biased Perceptions: Ethnic Differences	27
Biased Perceptions: Sex Differences	29
Caveats and Limitations	30
Conclusions and Future Directions	31
REFERENCES	34
BIOGRAPHICAL SKETCH	39

LIST OF TABLES

1. Means and Standard Deviations of Actual Acceptance, Perceived Acceptance, and Social Acceptance for Boys and Girls	19
2. Means and Standard Deviations of Actual Acceptance, Perceived Acceptance and Social Acceptance for Caucasian and African American Children	19
3. Means, Standard Deviations, and Confidence Intervals of Dyadic Accuracy, Dyadic Bias, and General Bias for Girls and Boys	20
4. Means, Standard Deviations, and Confidence Intervals of Dyadic Accuracy, Dyadic Bias, and General Bias for Caucasian and African American Children	20
5. Correlations Among the Measures Subdivided by Reference Group	21

LIST OF FIGURES

1. Graph of Perceiver Sex x Reference Group Interaction for Dyadic Perceptual Bias	22
2. Graph of Perceiver Ethnicity x Reference Group Interaction for Dyadic Perceptual Bias	24
3. Graph of Perceiver Ethnicity x Reference Group Interaction for General Perceptual Bias	25

ABSTRACT

The influence of sex and ethnic differences on the accuracy and bias in children's perceived acceptance is an area of research that has generally been overlooked and is important to investigate because such differences may help determine how children will function when interacting with others. Additionally, the way in which children interpret these interactions may in turn impact their mental well-being. The purpose of this study was to examine the influence of sex and ethnic differences on the accuracy and bias of children's perceived acceptance as perceivers (male/female; African American/Caucasian) predicting their social standing among a reference group (same-sex/other-sex; same-ethnicity/other-ethnicity). Archival data of sociometric ratings received from children in grades 3 through 5 (n=923) was used to form measures of dyadic accuracy, dyadic perceptual bias and general perceptual bias. This study revealed the following main findings: 1) children are more accurate in determining their peer acceptance among reference groups of similar sex and ethnicity, 2) girls have overly positive whereas boys have overly negative perceptions of their peer acceptance among same-sex peers at the dyadic level, and 3) African American children tend to overestimate peer acceptance whereas Caucasian children are likely to underestimate their peer acceptance, although the pattern of results differed slightly for dyadic and general bias. This investigation has extended prior research by identifying the sex and ethnicity of children whose self-perceptions are not in line with their actual level of peer acceptance as well as the composition of those peer groups who pose the greatest challenge for them when making decisions regarding their peer acceptance.

INTRODUCTION

Research focusing on the way in which children perceive their social worlds and how this affects the development of a child's self-concept has received considerable attention in the field of psychology (Harter, 1983). According to the early symbolic interactionists, children's self-perceptions are reflections of how others perceive them (for review, see Cillessen & Bellmore, 1999). Considering children absorb the perceptions that others have of them during social interactions, the quality of these interactions should determine the degree to which they learn to understand and accept themselves. Conversely, this theory may work in the opposite direction such that self-perceptions are capable of influencing social interactions (Cillessen & Bellmore, 1999). For example, children who have difficulties determining their social acceptance are more likely to behave inappropriately, and consequently experience more negative interactions with others. Therefore, the extent of discrepancy between children's self-perceptions and actual conveyed impressions determines the quality of relations formed with social partners and, ultimately, may affect the degree to which children are accepted (Cillessen & Bellmore, 1999).

Although extensive research has examined the formation of self-concept in children, few studies have investigated children's discrepant self-perceptions in regard to peer acceptance. Furthermore, the influence of sex and ethnic differences on children's discrepant self-perceptions is an area of research that has generally been overlooked and is important to investigate because such differences may help determine how children will function when interacting with others. Additionally, the way in which children interpret these interactions may in turn impact their mental well-being. Thus, the purpose of this study was to focus on sex and ethnic differences in respect to discrepant self-perceptions of children as they may have great implications in understanding the mechanisms whereby children formulate their self-concept and adjust to their social worlds.

Measuring Perceived and Actual Acceptance

The most common method used to acquire children's perceptions of peer acceptance is by instructing target children to complete questionnaires that ask them to rate their popularity among same-aged children or assess the quality or closeness of their relationships among a group of peers. Children may be asked to determine their acceptance among a specific group of peers such as their classmates or among an unspecified group. When target children are instructed to evaluate their acceptance among individual peers, they are making judgments at the dyadic level.

For example, children may be given a roster of their classmates' names and asked to rate on a likert scale the degree to which they are liked by each classmate. In contrast, when children rate their overall popularity among other children their age, which may include their perceptions of peer acceptance outside the classroom setting, they are making decisions at the general level. For instance, children may be presented with statements regarding their peer acceptance such as "some kids are popular with other kids their age" or "other kids are not very popular" and then asked to determine which statement is closer to reflecting their social standing. For the purpose of this investigation, "perceivers" will refer to a group of children who individually predicted the acceptance ratings they were to receive from each of their peers and assessed their overall social standing among same-aged peers. The group of peers that perceivers reflected upon when determining their peer acceptance will be termed "reference group".

In order to assess discrepant self-perceptions, it is necessary to compare children's self-perceptions of acceptance to a measure of actual peer acceptance that is considered valid and reliable. Previous research has assessed actual peer acceptance by gathering social acceptance ratings from either peers, teachers or parents. Although teachers may be able to proficiently recall the classmates with whom each target child interacts, they will only be able to approximate the degree of liking for each child, as they do not have access to information concerning the extent to which each classmate prefers a specific child. Moreover, parents may be able to determine how well their child interacts with classmates or other peer groups with whom they socialize with outside of school, yet their ratings are primarily limited to friendship interactions. However, when peers judge a target child's acceptance, a measure of actual acceptance is derived by averaging ratings of liking from each peer, which appears to more directly assess the construct of interest and is expected to result in a more reliable measure considering many peer ratings are averaged to produce the measure. Peers who provide the criterion ratings may differ or more likely comprise a subset of the peer reference group that perceivers use when forming their perceptions of peer acceptance.

For this investigation, actual peer acceptance ratings were provided by classmates considering much evidence exists that supports the reliability and validity of ratings by classmates as an objective indicator of children's peer acceptance (for review, see Hartup, 1983). Moreover, the use of peer ratings as actual measures of peer acceptance is further supported by the finding that teacher and parent ratings do not provide additional predictive utility to peer

ratings in their ability to estimate children's self-perceptions (Malloy et al., 1996). However, peer ratings are not completely objective indicators of peer acceptance considering children's perceptions of peer acceptance may be influenced by the composition of the reference group under evaluation and by the way in which peers are asked to rate a child's social standing. More specifically, these ratings may vary depending on whether peers are asked to judge a perceiver's social status within the classroom or assess their overall popularity, which may include relationships outside of the classroom. For the purpose of this investigation, the term "informants" will refer to peers who independently rated their preference for target children.

There are two primary methods employed to assess peers' perceptions of acceptance, peer nomination and roster-and-rating techniques. The sociometric peer nomination method greatly restricts the number of peers a child can choose as the children are asked to list a few classmates that are friends resulting in children primarily choosing close or best friends. For those children that are not chosen by their peers, it is usually concluded that these children are not accepted; however, this may not be the case. The children who were not nominated may, in fact, be viewed quite favorably, yet they may not be intimate enough with their peers to be nominated as close friends (Schofield & Whitley, 1983). In contrast, the roster-and-rating method allows children to rate the degree to which they would like to interact with each classmate from a list of all classmates thereby not limiting their evaluation of friends. According to Schofield and Whitley (1983), peer nominations are useful in assessing friendships whereas the roster-and-rating method is better at assessing within group acceptance across all classmates. For the purpose of this investigation, the roster-and-rating method will be used considering measurements of discrepant self-perceptions of interpersonal acceptance is desired rather than the assessment of discrepant self-perceptions of acceptance among close friends.

Measures of Discrepant Self-Perceptions

With the purpose of assessing discrepant self-perceptions, it is essential to compare a measure of perceived acceptance with a criterion measure of peer acceptance, which will be referred to as "actual acceptance". Campbell and Fehr (1990) recommend that it is crucial to distinguish between two types of discrepant self-perceptions, one that assesses directional differences, and one that assesses absolute differences without regard to direction. In keeping with Campbell and Fehr (1990), the term bias refers to the directional differences between perceived and actual acceptance. Concerning this present study, bias will be defined as the

degree to which children overestimate or underestimate their peer acceptance. In contrast, accuracy is used when referring to the magnitude of differences between a set of objective and subjective ratings irrespective of direction. Improving upon the distinction between these measures, the absence of bias does not determine whether an individual is categorized as accurate or inaccurate. Considering these measures draw on differing aspects of discrepant self-perceptions, they may offer unique information regarding how children view their social standing among peers. The primary purpose of this study is to investigate how measures of bias and accuracy will differ with respect to children's perceived acceptance among children of similar and different sex and ethnicity.

Research on Sex Differences

Research examining sex differences in regard to discrepant self-perceptions of children is quite limited; however, research involving adults has been studied extensively. Women have been found to be faster and more accurate than men in interpreting the meaning of nonverbal cues such as identifying facial expressions, emotions, situations, and interpersonal relationships (Hall, Carter & Hogan, 2000). For example, Hall and Matsumoto (2004) had subjects evaluate facial expressions after viewing them for 1- and 10-seconds. In the 1-second condition, the stimuli shown were not considered to be part of the subjects' conscious awareness. They found that women were more accurate than men in both conditions. From these results, the authors concluded that women and men have different cognitive processing capabilities. However, it may be that women are more motivated than men to perform better when they are knowingly evaluated in order to fulfill the expectation that they are more attuned to recognizing the meaning of nonverbal stimuli (Bellmore & Cillessen, 2003). In a quantitative meta-analysis by Ickes et al. (2000), it was found that significant sex differences in participants' ability to infer others' thoughts or feelings were achieved only when they knew that this skill was under examination. Women have also been found to be better than men at initially interpreting social targets' emotions, personality traits, behavioral propensities and remembering targets' physical appearances (see Horgan, Hall & Carter, 2004). As differences have been found in the way men and women perceive social cues, perhaps these distinctions will also be discovered when studying sex differences in children, which could potentially help elucidate how these differences in adults developed.

Research examining the influence of sex on discrepant self-perceptions of children is quite scarce, yet by examining the ways in which boys and girls interact may help elucidate how children obtain information regarding their social acceptance, which in turn may influence how well they perceive their social standing among peers. Behavioral differences have been found in the way boys and girls play and such play preferences may determine how children choose their social partners. Boys tend to engage in more overt aggression than girls and prefer activities and competitive games, which can be described as rough-and-tumble play that require gross motor skills (Phillipsen, Bridges, McLemore & Saponaro, 1999; Bukowski, Gauze, Hoza & Newcomb, 1993; Rose & Rudolph, 2006). As children have a tendency to gravitate towards peers that share their play preferences and same-sex peers engage in compatible activities, it seems appropriate that girls and boys prefer to interact with same-sex peers (Bukowski et al., 1993). Considering girls and boys spend more time with peers of the same sex, children should be more accurate in determining their social standing among same-sex peers as opposed to other-sex peers. Moreover, sex differences have emerged in regard to the structure of peer interactions among boys and girls. Boys have a tendency to play in large groups more frequently than girls, thus forming more dense social networks (Rose & Rudolph, 2006). Moreover, as boys engage in more rough-and-tumble play, dominance hierarchies are better delineated among boys than girls as boys are constantly comparing their physical strength and dexterity during competitive games (Rose & Rudolph, 2006). In contrast, girls engage in dyadic interactions for longer periods of time than boys and such extended interactions may provide girls with more opportunities to disclose personal information to intimate friends than what is afforded to boys who engage in dyadic interactions for shorter intervals (Phillipsen et al., 1999; Rose & Rudolph, 2006). Therefore, it appears that boys' status among peers may be based more on physical prowess whereas girls' status may be based more on social intimacy. Although boys and girls acquire information regarding their social status through disparate ways, boys and girls may be equally accurate when judging their popularity considering boys may attain this knowledge by forming extensive social networks whereas girls develop an understanding of their likeability by forming intimate relationships.

Accuracy of Children's Self-Perception

Previous research that has investigated the influence of sex on the dyadic accuracy of children's perceived acceptance, defined as a discrepancy between actual and perceived peer

acceptance irrespective of the direction of these differences, is scarce and ambiguous. In general, studies examining whether girls and boys differ in their ability to perceive their actual peer acceptance has been fairly consistent in finding no differences between the sexes (Bellmore & Cillessen, 2003; Malloy et al., 1996; Ausubel et al., 1952; MacDonald & Cohen, 1995). These studies are considered only to have examined dyadic accuracy because both the perceivers and informants in these investigations were instructed to consider specific classmates when making their decisions regarding perceived and actual peer acceptance. However, in a study by Cillessen and Bellmore (1999), which used the peer nomination method to allow children to identify an unlimited number of classmates who liked them most and who liked them least in order to assess perceived acceptance, it was found that girls were more accurate than boys in determining who liked them most. Conversely, significant sex effects were not found for liked-least nominations (Cillessen & Bellmore, 1999).

Only one study has examined children's accuracy at the dyadic level, referring to absolute differences between perceptions and criterion variables, in rating their status separately for same versus opposite sex peers. In this study, which drew on the same sample that was used in their 1999 investigation, Bellmore and Cillessen (2003) reported that boys and girls are more accurate in assuming the perspective of same-sex peers than other-sex peers (Bellmore & Cillessen, 2003). Such a finding was expected considering children spend more time interacting with same-sex peers and, therefore, they should be more aware of their social status among same-sex peer groups.

Bias of Children's Self-Perceptions

At this time, no studies have made the distinction between the sexes in the reference group when assessing bias of children's perceived acceptance; a distinction that will be investigated in this present study. However, studies examining the degree to which children overestimate or underestimate peer acceptance have looked at how girls and boys rate their social status among peers at the dyadic and general levels. Two studies found that girls predict and receive more positive ratings than boys when rating specific peers, yet girls were not more biased than boys (David & Kistner, 2000; Zakriski & Coie, 1996). In contrast, another study found that girls are inclined to underestimate and boys tend to overestimate acceptance when evaluating their social standing in general (McGrath & Repetti, 2002); however, Cole and his research team (1998) did not uncover any sex differences in general bias. These differences in results across

studies can be explained by the fact that the former studies assessed perceptions of acceptance by instructing perceivers to consider specific classmates when making their judgments whereas the later two studies assessed general perceptions of acceptance via a questionnaire (e.g. Harter's Self-perception Profile for Children) that did not limit the reference group to peers within the classroom setting. Discrepancies in the results of the two studies assessing bias at the general level can be elucidated by considering the differences in the ratings used as objective indicators of actual peer acceptance. Children's actual peer acceptance at school was assessed by a teacher report of social functioning in the McGrath and Repetti (2002) study whereas peers' estimates of social acceptance were used in the Cole et al. (1998) investigation.

Research on Ethnic Differences

The following literature review is limited to studies investigating discrepant self-perceptions using Caucasian and African American participants as these were the only ethnic groups of any size that were in the archival dataset on which this investigation is based. However, this restriction does not exclude much research because the majority of studies on ethnic differences in peer relationships focused on these two populations.

Just as sex may influence the way children and adults judge information about their social worlds, individuals from varying ethnic backgrounds may also differ in their social evaluations. Research has indicated that children in the racial minority are less liked as play and work partners than children of the majority (Kistner, Metzler, Gatlin & Risi, 1993; Singleton & Asher, 1979); a difference that has been attributed to cultural preferences, social behavior, or to the fact that there are fewer minority children with whom to have meaningful interactions and consequently, are not as well known as those children in the racial majority. As children in general have less knowledge about their social standing among other-ethnicity peers than same-ethnicity peers, minority children may have more difficulties determining their general social standing considering they must evaluate their status primarily among other-ethnicity peers and if dealing with racially prejudiced children, they may encounter more contradictory interactions with other-ethnicity peers (Zakriski & Coie, 1996). Additionally, in order to prepare their children for prejudice, studies have revealed that African American parents are more likely to educate their children about discrimination and how to cope with such experiences than are parents from other ethnic and racial backgrounds (Biafora, Warheit, Zimmerman & Gil, 1993; Hughes, 2003; Hughes & Chen, 1999; Phinney & Chavira, 1995). This socialization process has

been associated with more positive views of African American children's ethnic group as well as with higher peer self-esteem (Demo & Hughes, 1990; Constantine & Blackmon, 2002). Hughes et al. (2006) proposed that the positive association between socialization and peer esteem suggests that cultural socialization may bolster African American children's confidence and competence in interacting with their peers. Thus, African American children may perceive their social acceptance more positively than their Caucasian peers who do not undergo this socialization process.

Previous investigations have revealed that African American and Caucasian children differ in the way they interact and with whom they interact, which would presumably impact how children of these ethnic backgrounds formulate their self-perceptions. Studies have demonstrated that children prefer to interact with children of the same-ethnicity (Graham, Cohen, Zbikowski & Secrist, 1998; Singleton & Asher, 1979). Therefore, considering children spend more time interacting with same-ethnicity children, they should be more accurate in predicting their social status among peers of their own ethnicity. Moreover, it has been found that children rate African American children as more aggressive than Caucasian children (David & Kistner, 2000). This perceived aggressive tendency among African American children might further solidify same-ethnicity peer preferences, thus resulting in children having quite limited access to information about other-ethnicity social preferences. Furthermore, Caucasian children may interpret this aggressive behavior as an indication of rejection by their African American peers.

Ethnic differences in children's perceptions of perceived acceptance may also result as a function of African American and Caucasian children's differing response styles on ratings and questionnaires. Previous research has indicated that African Americans are more likely than Caucasians to use extreme response categories (strongly agree/strongly disagree) when rating a criterion variable using Likert scales (Bachman & O'Malley, 1984). Moreover, African American children have been found to rate themselves and their peers more positively than Caucasian children on measures of peer acceptance by prior investigations (Hallinan & Smith, 1985; Hallinan & Teixeira, 1987). Thus, if African American children rate themselves as well as their Caucasian peers in an overly positive manner, thus favoring one end of the scale, this would make Caucasian children's ratings of perceived acceptance appear negatively biased when compared to acceptance ratings from African American peers and African American children's ratings appear positively biased when compared to ratings provided by Caucasian peers.

Bias and Accuracy of Children's Self-Perceptions

Research examining the influence of ethnic differences on discrepant self-perceptions of children's perceived acceptance is quite limited, as only two studies are known to have calculated a measure of bias and no studies have formed a measure of accuracy to investigate this issue. In both studies using bias as a measure of discrepant self-perceptions, it was found that African American children reported more positive perceptions of their social acceptance than Caucasian children and their perceptions of acceptance were more positive than the actual ratings they received from their peers (Zakriski & Coie, 1996; David & Kistner, 2000). Moreover, Zakriski and Coie (1996) reported that Caucasian children were more likely to underestimate their social acceptance than were African American children and their perceptions of acceptance were more negative than the acceptance ratings they actually received from their peers. They also found that African American children underestimated peer rejection when compared to Caucasian children (Zakriski & Coie, 1996). When Zakriski and Coie (1996) subdivided the reference group according to ethnicity, African American and Caucasian children were found to be unbiased when judging their peer acceptance among same-ethnicity peers; however, Caucasian children underestimated their peer acceptance among African American peers while African American children overestimated their peer acceptance among Caucasian peers.

At present, no known studies have calculated a measure of accuracy to determine the magnitude of discrepancy between perceived acceptance and actual acceptance for African American and Caucasian subjects. Moreover, a general measure of bias has not been used in any known studies to determine the degree to which culturally diverse children overestimate or underestimate their overall popularity among same-aged children.

Present Study

The purpose of this study was to examine the influence of sex and ethnic differences on the accuracy and bias of children's perceived acceptance as perceivers (male/female; African American/Caucasian) predicting their social status among a reference group (same-sex/other-sex; same-ethnicity/other-ethnicity). Moreover, this study was a reanalysis of data reported by the David and Kistner (2000) investigation as well as an examination of additional data obtained on the participants in that study. This study also advanced the findings of the David and Kistner (2000) investigation, which only used a measure of dyadic bias and focused on the reference group as a whole, by incorporating measures of accuracy and general bias and subdividing the

reference group according to sex and ethnicity. Measures of accuracy and bias were both calculated using the acceptance ratings received by children's peers. A measure of accuracy was established by calculating the absolute value of the difference between each pair of actual acceptance ratings and perceived acceptance ratings for each participant. As these ratings were made on each classmate separately, such a measure will be referred to as dyadic perceptual accuracy. Two measures of bias were used in this study as one measure assessed bias in terms of general perceived peer acceptance and the other measure of bias was assessed at the dyadic level. A measure of dyadic perceptual bias was created by regressing ratings that children expected to receive from each classmate (perceived acceptance ratings) onto ratings that they actually received from each classmate (actual acceptance ratings). The remaining variance served as a residual score to represent bias of children's self-perceptions when compared to actual peer acceptance. Earlier studies formed a measure of dyadic bias by subtracting actual peer acceptance ratings from perceived peer acceptance ratings (e.g., Zakriski & Coie, 1996). This measure of bias could either be positive or negative, with positive scores indicating an overestimation and negative scores indicating an underestimation. Although both methods should generate the same pattern of results, the residualizing procedure is more sensitive to the construct of interest as the simple difference method fails to separate level of peer acceptance from discrepant self-perceptions. By using residual scores, level of peer acceptance is partialled out of the variance in perceived acceptance; residual scores reflect the degree to which perceived peer acceptance is higher or lower than would be expected based on level of peer acceptance. A measure of general perceptual bias was formed by using residual scores from the regression of children's responses to the Social Acceptance subscale of the Self-Perception Profile for Children (SPPC; Harter, 1985), a scale extensively used in other sociometric studies to assess perceived peer acceptance, onto ratings of actual acceptance. This measure of general perceptual bias may include children's perceptions of their peer acceptance outside the classroom setting; a measure that is quite valuable as different information will be retrieved than what is gathered by calculating dyadic perceptual bias. However, it should be noted that peers' ratings of actual acceptance may not be as precise for some children as these informants may be unaware of these children's relationships outside of school, which must be identified as a source of error in this measure.

Hypotheses

The following hypotheses were tested by this study:

Hypotheses for Sex Differences

Hypothesis 1: Children will be more accurate in determining their acceptance among same-sex peers than other-sex peers. Such a finding was expected considering studies have demonstrated that children prefer to interact with same-sex peers and such an inclination is related to children's play preferences (Bukowski, Gauze, Hoza & Newcomb, 1993). Therefore, considering children spend more time interacting with same-sex children, they should be more accurate in predicting their social status among same-sex peer groups.

Hypothesis 2: Girls will be more accurate perceivers of peer acceptance than boys. A difference in social perception skills between boys and girls was expected based primarily on the research done with adults as women have been found to be faster and more accurate than men in discerning the meaning of non-verbal cues, thus providing them with an advantage over males to determine social competence (Hall, Carter & Hogan, 2000).

Moreover, girls have a tendency to engage in dyadic relationships for longer periods of time whereas boys play more frequently in larger groups (Rose & Rudolph, 2006). If girls usually interact on an individual basis, they may have more time than boys to disclose personal information, and thus may be better equipped to make decisions regarding their social standing.

Although, the majority of investigations examining the influence of sex on the accuracy of children's perceived acceptance have found no differences between the sexes even when both methods of sociometric assessment were used (Bellmore & Cillessen, 2003; Malloy et al., 1996; Ausubel et al., 1952; MacDonald & Cohen, 1995), these studies may have not had enough power to detect sex differences.

No hypotheses were made in regard to the influence of sex on dyadic and general bias and the analyses were treated as exploratory considering research in this area is quite limited and has yielded no reliable pattern of results for general bias. Two studies have been consistent in finding that girls' and boys' predictions of peer acceptance are unbiased at the dyadic level (David & Kistner, 2000; Zakriski & Coie, 1996). Although these studies failed to make a distinction between the sexes in the reference group, there is no reason to believe that the findings from this investigation should differ. At the general level, results have been evenly divided; one study found that girls underestimate and boys overestimate their overall popularity

(McGrath & Repetti, 2002) and another study did not find sex differences for general bias (Cole et al., 1998). As mentioned earlier, methodological differences may account for these discrepant results. Considering this study's methodology more closely resembles the approach outlined in the Cole et al. (1998) investigation, it would be expected that this study would replicate their findings.

Hypotheses for Cultural Differences

Hypothesis 3: Children will be more accurate in determining their acceptance among same-ethnicity peers than other-ethnicity peers. Studies have demonstrated that children prefer to interact with children of the same-ethnicity (Graham, Cohen, Zbikowski & Secrist, 1998; Singleton & Asher, 1979), therefore, children should be more accurate in predicting their social status among peers of their own ethnicity considering they spend more time interacting with same-ethnicity children. No differences are expected for African American and Caucasian children in their ability to determine their social standing considering no evidence has been found to indicate that one ethnic group is better at perceiving their peer acceptance than another ethnic group.

Hypothesis 4: African American children are expected to overestimate and Caucasian children will underestimate their peer acceptance at the dyadic and general levels. Previous studies have found that African American children's perceptions of acceptance are more positive whereas Caucasian children's perceptions are more negative than the actual ratings they received from their peers (Zakriski & Coie, 1996; David & Kistner, 2000). Although no studies have assessed bias at the general level, there is no reason to expect that these pattern of findings reported at the dyadic level would be different at the general level. Moreover, overly positive perceptions of African American children is expected when considering the socialization practices African American parents impart to their children in order to prepare them for the prospect of discrimination when interacting with other ethnic groups. As cultural socialization has been associated with more positive views of one's ethnic group as well as with higher peer self-esteem (Demo & Hughes, 1990; Constantine & Blackmon, 2002), it follows that African American children would have more positive perceptions of peer acceptance than their Caucasian peers who have not undergone such socialization practices and who may be more cautious in their predictions of social acceptance. As one study has found that African American and Caucasian children are biased only when judging their peer acceptance among other-

ethnicity peers where African American children overestimate their peer acceptance and Caucasian children underestimate their social standing (Zakriski & Coie, 1996), this study has attempted to replicate these findings using the roster-and-rating method as opposed to the peer nomination method.

METHODS

Participants

Archival data consisting of 923 children in third ($n=290$), fourth ($n=277$), and fifth grades ($n=356$) were used in this present investigation. This population was obtained from 8 public elementary schools serving both suburban and rural areas of northern Florida. A 60% consent rate was achieved from a possible pool of eligible participants. The sample of children was 46% boys and 54% girls. The average age of the participants was 9.67 years ($SD = 1.05$). In order to examine ethnic differences, comparisons were limited to Caucasian and African American participants comprising 69% and 27%, respectively of the sample. Other minorities (e.g., Asian, Hispanics) represented only 3.6% of the total sample and subsequently were excluded from the analyses because of low representation in the current sample.

Measures

Actual Acceptance

The roster-and-rating method was used to assess children's actual social acceptance. Children were given a roster of classmate names and asked to rate on a 5-point likert scale (1 = "do not like at all" to 5 = "like very much") the degree to which they liked each classmate. Calculating the mean ratings received by peers formed a measure of actual acceptance. Peer ratings have been shown to be reliable and valid indices of social acceptance (see Hartup, 1983, for review).

Perceived Acceptance

Children were given a class roster of the same student names and were asked to predict the ratings they would receive from each classmate. The same 5-point likert scale was used. Analyses only included perceived acceptance ratings for the children who provided actual acceptance ratings. The test-retest reliability of this measure over a 6-month interval has been found to be .77 (DeRosier, 1997) and correlates well with other self-report measures of perceived peer acceptance (Balthazor, 1995).

Social Acceptance Scores

Perceived acceptance was also assessed using the Social Acceptance subscale of the Self-Perception Profile for Children (SPPC; Harter, 1985). The full SPPC was administered; however, for the purposes of this investigation, only the Social Acceptance subscale was used. On the six-item subscale, children were asked to read two statements regarding peer acceptance

(e.g., “some kids are popular with others their age” and “other kids are not very popular”). The children had to determine which statement most accurately reflected them and then indicate on a 4-point likert scale the degree to which this statement was true. Higher scores on this measure indicate a more positive impression of social standing. The test-retest reliability of this subscale is well documented and internal consistencies have been found to vary between .75 and .80 (Harter, 1985). For our sample, internal consistency was .71.

Dyadic Accuracy

A measure of dyadic accuracy was created by first calculating the absolute value of the difference between each pair of actual acceptance ratings and perceived acceptance ratings for each participant. Then the final measure was determined by averaging these differences for each participant. The lower the score on this measure, the more accurate the child’s perception of peer acceptance.

Dyadic Perceptual Bias

To determine the degree to which children overestimated or underestimated peer acceptance, a measure of dyadic perceptual bias was created by standardizing scores of perceived and actual acceptance within each classroom and then regressing these standardized scores of perceived acceptance onto standardized scores of actual acceptance. The remaining variance served as a residual score to represent bias of children’s self-perceptions when compared to actual peer acceptance. These residual values are conceptualized as positioned on a continuum where positive residual values represent overestimates of peer acceptance and negative scores indicate underestimates. Residual scores approximating the mean indicate that participants held unbiased views of their peer acceptance. This method has been used to indicate perceptual bias in previous studies requiring the assessment of directional differences between perceptions and criterion variables (Cole, Martin, Peeke, Seroczynski, & Hoffman, 1998; 1999).

General Perceptual Bias

A measure of general perceptual bias was created by standardizing scores of actual acceptance and social acceptance (children’s responses to the SPPC) within each classroom and then regressing these standardized scores of social acceptance onto standardized scores of actual acceptance. The remaining variance served as a residual score that represented a bias of children’s general perceptions of acceptance when compared to ratings of actual peer acceptance. These residual scores are on a continuum where negative values indicate underestimation and

positive values reflect overestimation. This measure of bias has been used in several recent studies of children's perceived peer acceptance (e.g., Cole et al., 1998; 1999; McGrath & Repetti, 2002). This measure is considered a general assessment of perceptual bias, as no peer referent group is specified for the Social Acceptance subscale of the SPPC.

Procedure

Data were collected two months into the school year in order to ensure that the children were well acquainted with their classmates. Parental and child written consent was obtained before any study procedures commenced. All measures were administered to groups of 6 to 8 children by trained graduate and undergraduate research assistants. The participants were allowed to complete the measures at their own pace. Participants were encouraged to respond to all items, and they were individually queried about any omitted items. If participants reported that they lacked adequate information to provide a rating, the question was left blank.

RESULTS

Preliminary Analyses

Means and standard deviations for all measures are presented in Tables 1 through 4. Confidence intervals surrounding the means of dyadic and general bias can also be found in Tables 3 and 4. Correlations among the measures are presented in Table 5. Prior to conducting analyses, the measures were screened for skew and kurtosis and were found to be within acceptable limits with the exception of dyadic accuracy when same-ethnicity peers comprised the reference group as its distribution was found to be slightly skewed in the right-hand tail and leptokurtic. Thus, dyadic accuracy for same-ethnicity peers was subjected to a log transformation. As no differences were found in the outcome of the analyses using this transformed variable, the results are presented using only the raw data. To help control for experiment-wise error, a Bonferroni corrective procedure was adopted so that an alpha level of .017 (.05/3) was employed for all statistical tests. Post hoc comparisons were conducted using re-calculated critical values from the pooled mean error terms of the original analyses that yielded interactions. Preliminary analyses were conducted to assess sex and ethnic differences in participants' actual acceptance and perceived acceptance after subdividing the reference group according to sex and ethnicity. Sex differences were evaluated using separate 2 (sex of perceiver) x 2 (sex of reference group) ANOVAs conducted on each variable, with reference group (same-sex vs. other-sex peers) as a repeated measures factor. Results for actual acceptance revealed main effects for perceiver sex, $F(1, 910) = 13.631, p < .001$, and reference group, $F(1, 910) = 1109.90, p < .001$. As seen in Table 1, males received lower peer ratings of acceptance than females and children received lower actual acceptance ratings from other-sex peers than same-sex peers. No significant perceiver sex x reference group difference was found for actual acceptance. For perceived acceptance, a significant main effect for reference group, $F(1, 910) = 1002.30, p < .001$, was revealed. This main effect was qualified by a significant perceiver sex x reference group interaction, $F(1, 910) = 13.43, p < .001$. Post-hoc analyses indicated that the two-way interaction was attributable to the fact that perceptions of social acceptance were dependent upon the sex of the perceiver when predicting social status among same-sex peers. As seen in Table 1, girls and boys predicted more positive ratings of their social acceptance from same-sex peers than other-sex peers, but girls' ratings of perceived acceptance were more positive than boys' perceptions of their peer acceptance only among same-sex peers

and no significant differences were found between girls' and boys' ratings of perceived acceptance among other-sex peers. The main effect of perceiver sex was not significant. A one-way ANOVA was also conducted on social acceptance scores from the SPPC to determine if girls' and boys' perceptions of their overall popularity differed. No significant sex differences were found for social acceptance.

To assess for ethnic differences, separate 2 (ethnicity of perceiver) x 2 (ethnicity of reference group) ANOVAs were also conducted on actual acceptance and perceived acceptance scores, with reference group (same-ethnicity vs. other-ethnicity peers) as a repeated measures factor. Results for actual acceptance revealed a significant perceiver ethnicity x reference group interaction, $F(1, 826) = 104.75, p < .001$. As seen in Table 2, Caucasian children received lower peer ratings of acceptance from same-ethnicity peers than other-ethnicity peers whereas African American children received lower actual acceptance ratings from other-ethnicity peers than same-ethnicity peers. Main effects for perceiver ethnicity and reference group were not significant. For perceived acceptance, significant main effects for perceiver ethnicity, $F(1, 826) = 95.00, p < .001$, and reference group, $F(1, 826) = 27.48, p < .001$, were revealed. African-American children reported more positive perceptions of their social acceptance than their Caucasian peers, and children expected more positive ratings of perceived acceptance from same-ethnicity peers than other-ethnicity peers (see Table 2). The perceiver ethnicity x reference group interaction was not significant. Finally, a one-way ANOVA was conducted on social acceptance scores to determine if African American and Caucasian children's perceptions of their overall popularity differed. No significant ethnic differences were found for social acceptance.

Measures of Discrepant Self-Perceptions by Perceiver and Reference Group Sex

To examine the influence of sex differences on the accuracy and bias of children's perceived acceptance, 2 (sex of perceiver) x 2 (sex of reference group) ANOVAs were conducted on measures of dyadic accuracy, dyadic perceptual bias, and general perceptual bias, with reference group as a repeated measures factor.

Table 1. Means and Standard Deviations of Actual Acceptance, Perceived Acceptance, and Social Acceptance for Boys and Girls

Variable	Boys ^b						Girls ^c						Total ^a	
	Same-sex		Other-sex		Total		Same-sex		Other-sex		Total			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Actual Acceptance	3.45	.89	2.46	.84	2.96	.87	3.62	.82	2.64	.82	3.13	.82	3.04	.84
Perceived Acceptance	3.46	.92	2.52	.98	2.99	.95	3.67	.81	2.47	.96	3.07	.87	3.03	.92
Social Acceptance ^d					2.95	.71					2.91	.70	2.93	.70

^a*n* = 912, ^b*n* = 419, ^c*n* = 493. ^dSocial acceptance scores were obtained from a total of 918 subjects (423 girls and 495 boys).

Table 2. Means and Standard Deviations of Actual Acceptance, Perceived Acceptance, and Social Acceptance for Caucasian and African American Children

Variable	Caucasian ^b						African American ^c						Total ^a	
	Same-ethnicity		Other-ethnicity		Total		Same-ethnicity		Other-ethnicity		Total			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Actual Acceptance	2.97	.70	3.35	1.16	3.16	.93	3.40	1.06	2.86	1.03	3.13	1.05	3.15	.99
Perceived Acceptance	2.92	.78	2.77	1.13	2.85	.96	3.53	1.00	3.22	1.10	3.38	1.05	3.11	1.00
Social Acceptance ^d					2.92	.72					2.93	.68	2.93	.70

^a*n* = 828, ^b*n* = 589, ^c*n* = 239. ^dSocial acceptance scores were obtained from a total of 918 subjects (642 Caucasian children and 276 African American children).

Table 3. Means, Standard Deviations, and Confidence Intervals of Dyadic Accuracy, Dyadic Bias, and General Bias for Boys and Girls

Variable	Boys ^b								Girls ^c						Total ^a			
	Same-sex				Other-sex				Same-sex			Other-sex			M	SD		
	M	SD	95% CI lower upper		M	SD	95% CI lower upper		M	SD	95% CI lower upper		M	SD				
Dyadic Accuracy	1.19	.61			1.24	.60			1.08	.52			1.23	.61			1.18	.58
Dyadic Bias ^d	-.10	1.06	-.20	-.01	.02	1.02	-.07	.12	.09	.94	.00	.18	-.03	.98	-.11	.06	0.00	1.00
General Bias ^e	.04	1.02	-.05	.14	.04	1.01	-.05	.14	-.04	.98	-.13	.05	-.04	.99	-.13	.05	0.00	1.00

^an = 912, ^bn = 419, ^cn = 493. ^dDyadic Bias was calculated for a total of 910 subjects (419 boys and 491 girls). ^eGeneral Bias was calculated for a total of 908 subjects (419 boys and 489 girls).

Table 4. Means, Standard Deviations, and Confidence Intervals of Dyadic Accuracy, Dyadic Bias, and General Bias for Caucasian and African American Children

Variable	Caucasian								African American						Total			
	Same-ethnicity				Other-ethnicity				Same-ethnicity			Other-ethnicity			M	SD		
	M	SD	95% CI lower upper		M	SD	95% CI lower upper		M	SD	95% CI lower upper		M	SD				
Dyadic Accuracy ^a	1.12	.47			1.26	.90			1.24	.75			1.30	.76			1.23	.72
Dyadic Bias ^b	-.10	.92	-.18	-.02	-.16	.97	-.24	-.08	.24	1.14	.11	.37	.36	1.00	.24	.50	0.00	1.00
General Bias ^c	-.02	1.00	-.10	.07	-.04	1.00	-.12	.04	.04	1.02	-.09	.17	.12	.99	-.01	.25	0.00	1.00

^aDyadic Accuracy was calculated for a total of 829 subjects (590 Caucasian children and 239 African American children), ^bDyadic Bias was calculated for a total of 827 subjects (590 Caucasian children and 237 African American children). ^cGeneral Bias was calculated for a total of 825 subjects (589 Caucasian children and 236 African American children)

Table 5. *Correlations among the measures subdivided by reference group*

Measures	1	2	3	4	5	6	7	8	9	10	11	12
1. Accuracy same-sex		.16	.57	.43	-.08	.01	-.02	-.04	-.04	-.08	-.05	-.08
2. Accuracy other-sex			.51	.41	.13	.18	.16	.12	.04	.01	.02	.04
3. Accuracy same-ethnicity				.13	.02	.11	.06	.08	.03	.00	.03	.01
4. Accuracy other-ethnicity					-.03	-.04	-.01	-.14	-.02	-.04	-.03	-.03
5. Dya. Bias same-sex						.41	.72	.54	.23	.22	.21	.23
6. Dya. Bias other-sex							.71	.63	.16	.17	.15	.18
7. Dya. Bias same-ethnicity								.46	.19	.19	.18	.19
8. Dya. Bias other-ethnicity									.12	.13	.11	.12
9. Gen. Bias same-sex										.97	.98	.98
10. Gen. Bias other-sex											.98	.98
11. Gen. Bias same-ethnicity												.97
12. Gen. Bias other-ethnicity												

Note: Bolded values are significant at $p < .01$.

Dyadic Accuracy

For dyadic accuracy, the ANOVA revealed significant main effect for reference group, $F(1, 910) = 16.34, p < .001$. Although the ANOVA showed that the means were significantly different, the effect size was relatively weak (Partial Eta Squared = .02). As seen in Table 3, girls and boys were more accurate in determining their social standing among same-sex peers than other-sex peers. The main effect for perceiver sex and the perceiver sex x reference group interaction were not significant.

Dyadic Perceptual Bias

For dyadic perceptual bias, a significant perceiver sex x reference group interaction, $F(1, 908) = 11.20, p < .001$, was revealed. This was quite a small difference (Partial Eta Squared = .01). Post-hoc analyses indicated that boys tended to underestimate whereas girls tended to overestimate their peer acceptance among same-sex peers, yet boys and girls were not found to be biased in either direction when rating their acceptance among other-sex peers (see Figure 1). No significant perceiver sex or reference group differences were found for dyadic perceptual bias.

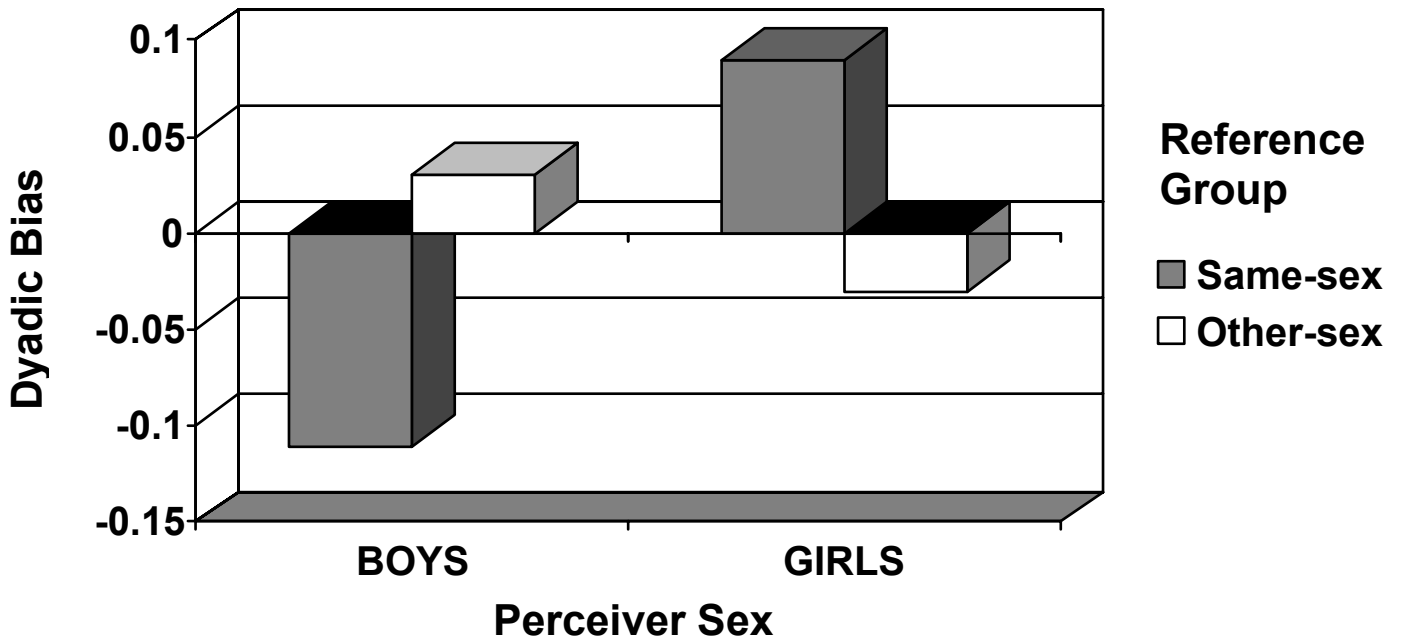


Figure 1. Graph of perceiver sex x reference group interaction for dyadic perceptual bias

General Perceptual Bias

Examination of the results for general perceptual bias yielded neither significant main effects nor a significant perceiver sex x reference group interaction.

Measures of Discrepant Self-Perceptions by Perceiver and Reference Group Ethnicity

To examine the influence of ethnic differences on the accuracy and bias of children's perceived acceptance, 2 (ethnicity of perceiver) x 2 (ethnicity of reference group) ANOVAs were conducted on measures of dyadic accuracy, dyadic perceptual bias, and general perceptual bias, with reference group as a repeated measures factor.

Dyadic Accuracy

For dyadic accuracy, the ANOVA revealed a significant main effect for reference group, $F(1, 827) = 7.50, p < .006$. Although the ANOVA showed that the means were significantly different, the effect size was relatively weak (Partial Eta Squared = .01). As seen in Table 4, children were more accurate in determining their acceptance among same-ethnicity peers than other-ethnicity peers.

Dyadic Perceptual Bias

For dyadic perceptual bias, a significant main effect for perceiver ethnicity, $F(1, 824) = 44.21, p < .001$, was revealed. This was a rather modest difference (Partial Eta Squared = .05). As seen in Table 4, African American children were found to overestimate whereas Caucasian children were found to underestimate their peer acceptance among same- and other-ethnicity peers. The ANOVA also revealed a trend toward a perceiver ethnicity x reference group interaction, $F(1, 824) = 5.35, p < .021$ (see Figure 2). Although the interaction was on the brink of significance, the effect size was weak in comparison (Partial Eta Squared = .01). To determine the source of this significant interaction, post-hoc analyses were conducted to examine between-subjects and within-subjects effects. Significant main effects of ethnicity were found for same-ethnicity and other-ethnicity peers. African American children tended to overestimate whereas Caucasian children tended to underestimate the actual ratings received by same-ethnicity and other-ethnicity peers. No significant main effects of reference group were found for African American or Caucasian children. However, when evaluating the graphical representation of this interaction, it appears that the underestimation on behalf of Caucasian children and the overestimation on behalf of African American children is more pronounced

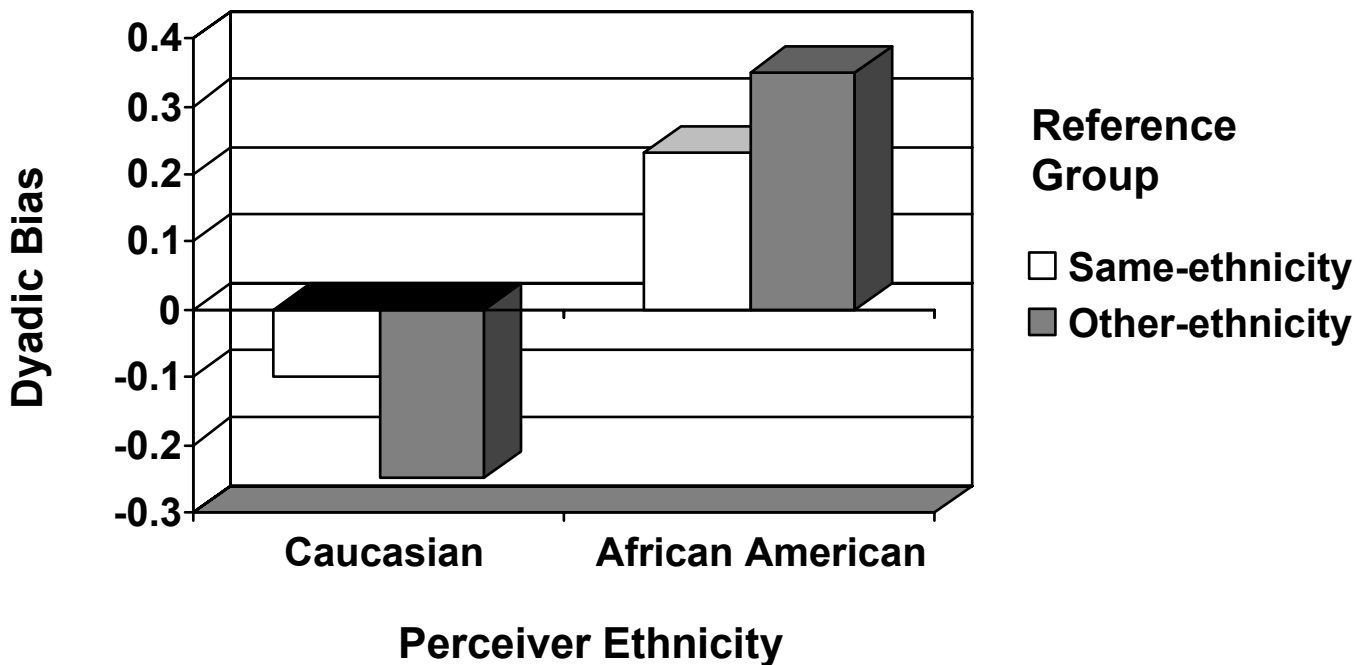


Figure 2. Graph of perceiver ethnicity x reference group interaction for dyadic perceptual bias

when other-ethnicity peers comprise the reference group than when same-ethnicity peers are the targeted reference group.

General Perceptual Bias

Examination of the results for general perceptual bias yielded a significant main effect of reference group, $F(1, 822) = 10.67, p < .001$. This difference was relatively weak (Partial Eta Squared = .01). A significant perceiver ethnicity x reference group interaction, $F(1, 822) = 36.56, p < .001$, was also found (see Figure 3). The effect size was larger in magnitude than the previously documented effect size, but was still rather modest (Partial Eta Squared = .04). To determine the source of this significant interaction, post-hoc analyses were conducted to examine between-subjects and within-subjects effects. A significant main effect of ethnicity was found for other-ethnicity peers, but not for same-ethnicity peers. African American children tended to overestimate whereas Caucasian children tended to underestimate their peer acceptance only when other-ethnicity peers comprised the reference group. Additionally, significant main effects of reference group were found for African American and Caucasian children. African American

children were more positively biased and Caucasian children were more negatively biased when the reference group was comprised of other-ethnicity peers than same-ethnicity peers.

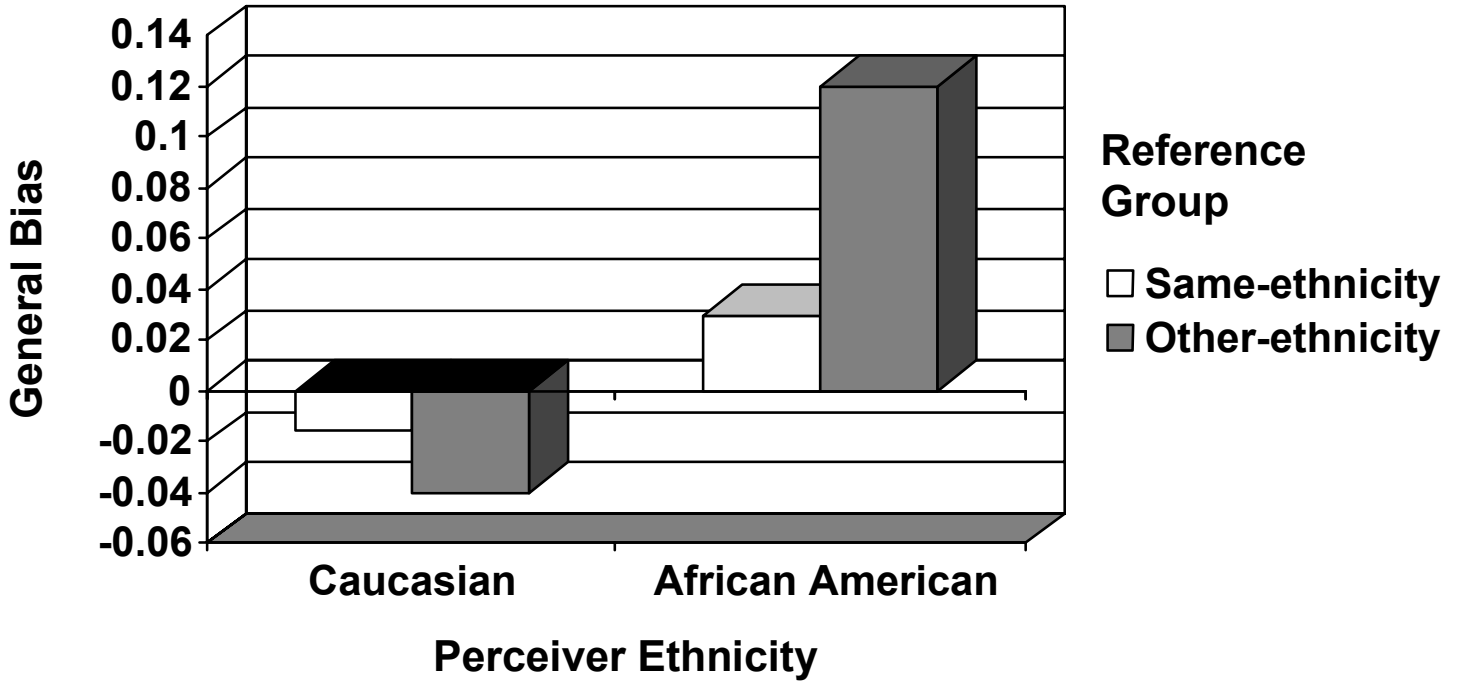


Figure 3. Graph of perceiver ethnicity x reference group interaction for general perceptual bias

DISCUSSION

The present study was designed to examine the influence of sex and ethnic differences on children's discrepant self-perceptions in regard to peer acceptance. By incorporating multiple facets of discrepant self-perceptions (i.e., dyadic accuracy, dyadic perceptual bias and general perceptual bias) as well as subdividing the reference group according to sex and ethnicity, this investigation was able to advance the findings of prior research. This study revealed the following main findings: 1) children are more accurate in determining their peer acceptance among reference groups of similar sex and ethnicity, 2) girls have overly positive whereas boys have overly negative perceptions of their peer acceptance among same-sex peers at the dyadic level, and 3) African American children tend to overestimate peer acceptance whereas Caucasian children are likely to underestimate their peer acceptance, although the pattern of results differed slightly for dyadic and general bias. The discussion that follows focuses on the information that was gained about children's ability to determine their social standing among their peer group and how the sex and ethnicity of the perceiver as well as the reference group influences children's perceptions of peer acceptance.

Familiarity Breeds Accuracy

As expected, children are more accurate in determining their social standing among peers with whom they spend more time interacting. Previous studies have shown that children prefer to interact with peers of similar sex and ethnicity (Bukowksi et al, 1993; Singleton & Asher, 1979), which in turn would result in children spending more time with these peer groups. Thus, as evidenced by our findings, familiarity appears to promote greater accuracy. However, neither perceiver sex nor ethnicity affected the accuracy with which children predicted their peer acceptance. Although ethnic differences were not expected to influence the accuracy of children's perceived acceptance, it was hypothesized that girls would be more accurate perceivers of peer acceptance than boys, a prediction that was based primarily on the research done with adults as women have been found to be faster and more accurate than men in discerning the meaning of non-verbal cues (Hall, Carter & Hogan, 2000). However, this hypothesis was not supported as no differences were found in boys' and girls' ability to determine their social standing. This finding is in line with the majority of studies investigating children's perceptions of peer acceptance (Bellmore & Cillessen, 2003; Malloy et al., 1996; Ausubel et al., 1952; MacDonald & Cohen, 1995). Additionally, although adult research

indicates that females are more accurate in discerning the meaning of non-verbal cues thus providing them with an advantage over males to determine social competence, such sex differences have been shown only to emerge when subjects are aware that this ability is under examination as revealed in a quantitative meta-analytic review of 15 empathic accuracy studies (Ickes et al., 2000). Therefore, as the participants in this investigation were naive to the fact that their accuracy in discerning social acceptance was the purpose of this study, it makes sense that no sex differences were found.

Biased Perceptions: Ethnic Differences

Although the pattern of results were the same for accuracy regardless of whether the effects of sex or ethnicity were under examination, sex and ethnicity influenced dyadic and general bias differently. For dyadic and general bias, it was predicted that African American children would overestimate whereas Caucasian children would underestimate their peer acceptance. The results of the present study supported this hypothesis for dyadic bias. So what accounts for biased perceptions of peer acceptance among African American and Caucasian children? Overly positive perceptions of peer acceptance on behalf of African American children was not a product of receiving lower ratings of actual peer acceptance than Caucasian children, thus ruling out prejudice as a potential explanation for this finding. Instead, African American's positively biased self-perceptions were a function of their more positive ratings of perceived acceptance. Several possible explanations may account for African American's overestimation of their peer acceptance. Firstly, Crocker and Major (1989) proposed that minority group members are able to maintain their positive self-perceptions by attributing negative feedback to an external source such as prejudice. However, African American children do not appear to be aware of this negative feedback considering their predicted acceptance ratings from Caucasian peers are quite positive. Thus, negative feedback cannot be attributed to prejudice if African American children are unaware of the negative feedback. However, if African American children attribute negative interactions to factors other than prejudice and other than themselves (e.g., blame situational or transient factors), they could still have positive perceptions of acceptance, yet this would not explain why African American children gave more positive ratings of actual acceptance to Caucasian children than what they received from their Caucasian peers. Secondly, ethnic group differences may be a product of a more positive response style on behalf of African American children rather than a true difference in level of

self-perception. Upon inspecting the actual acceptance scores of African American children, it appears that African American children rated themselves and their peers more positively than Caucasian children, a tendency that has been noted by other researchers (Hallinan & Smith, 1985; Hallinan & Teixeira, 1987). African Americans' proclivity to rate their social standing as well as their Caucasian peers in an overly positive manner, thus favoring one end of the scale, would make Caucasians' ratings of perceived acceptance appear negatively biased when compared to acceptance ratings from African American peers and African American's ratings appear positively biased when compared to ratings provided by Caucasian peers. However, if this finding was a function of an extreme response style then African American children should appear unbiased when rating their peer acceptance among same-ethnicity peers, instead they were found to be positively biased. Thirdly, Zakriski and Coie (1996) suggested that African American children's overly positive self-perceptions may be a reflection of these children engaging in "face-saving" behavior or presenting themselves in a favorable light for the benefit of the investigators conducting the study. However, this explanation also fails to explain why African American children gave more positive ratings of actual acceptance to Caucasian children than the ratings they received from their Caucasian peers. Finally, African Americans may socialize their children differently as a protective measure to prepare them to deal with negative interactions. As previous studies have shown that African American children have higher self- and peer-esteem, and greater pride in their ethnic group as a result of cultural socialization (Demo & Hughes, 1990; Constantine & Blackmon, 2002), it would make sense that their self-perceptions are more positive than their Caucasian peers who do not experience such socialization practices, and thus, are more conservative with their ratings. As no one explanation appears to be sufficient to account for the overall pattern of results, it is likely that a combination of these processes are at work.

In regard to the influence of ethnicity on general bias, our results replicated the Zakriski & Coie (1996) findings. Caucasian and African American children were unbiased when judging their social status among same-ethnicity peers, yet among other-ethnicity peers, African American children overestimated their peer acceptance while Caucasian children underestimated their peer acceptance. Differences in the results for dyadic and general bias may be elucidated when considering the formation of these two measures. Dyadic bias is a more sensitive measure than general bias as no distinction is made between same-ethnicity and other-ethnicity peers in

the reference group for the perceived popularity scores that make up general bias. Thus, it is impossible to ascertain which reference group African American and Caucasian children are using when predicting their overall popularity. As African Americans are more inclined to have greater social involvement than Caucasians in their community, they may be more likely than Caucasian children to consider their overall popularity among peers outside of the classroom setting (Hart, McAdams, Hirsch, & Bauer, 2001; Snowden, 2001). Consequently, when this level of perceived popularity is compared to the actual acceptance ratings received from their classmates, African American children's perceptions of overall popularity should look overly positive especially in contrast to the actual acceptance ratings received from other-ethnicity peers.

Biased Perceptions: Sex Differences

Although hypotheses for dyadic and general bias were not made and the examination of the influence of sex on these measures was treated as exploratory, it was expected that the results of this study would be in line with certain findings of previous investigations. With regard to general bias, our results replicate those of Cole et al. (1998), which was anticipated due to methodological similarities, and not those reported by McGrath and Repetti (2002) who found that girls tend to underestimate whereas boys tend to overestimate their general peer acceptance among their peer group. Instead, we found that girls' and boys' ratings of perceived acceptance were not biased in either direction at the general level. The discrepancy in results between this study and the McGrath and Repetti (2002) investigation may be accounted for by the fact that different raters of actual peer acceptance were used. Children's actual peer acceptance at school was assessed by a teacher report of social functioning in the McGrath and Repetti (2002) study whereas peers' estimates of social acceptance were used in this investigation. Additionally, the sample used in McGrath and Repetti (2002) study was quite homogenous consisting predominately of Caucasian participants whereas the sample of children serving as subjects in this study was more diverse.

As research has been consistent in finding girls' and boys' predictions of acceptance to be unbiased at the dyadic level (David & Kistner, 2000 & Zakriski & Coie, 1996), it was anticipated that the results of this study would replicate this finding. Instead, it was found that boys underestimate whereas girls overestimate their peer acceptance among same-sex peers. Although this effect may not have been robust enough to be detected by previous studies whose

reference groups remained intact and were not subdivided according to sex, this sex difference found for dyadic bias must be interpreted with caution until replicated especially considering that previous research, which uncovered a sex difference, found the pattern of results to be in the opposite direction (McGrath & Repetti, 2002). Girl's positively biased perceptions of peer acceptance among same-sex peers may be a function of how girls are socialized. Perhaps girls are taught by their parents to be polite so they tend not to reveal their negative feelings when interacting with disliked peers, but will disclose their true opinion of an unaccepted classmate when that peer is not present, thus accounting for this systematic difference in girls' actual and perceived acceptance ratings. As seen in a previous study investigating differences in how children interact with a difficult play partner, girls' socially exclusive behaviors were typically nonverbal and exhibited among friends in the absence of the disliked play partner whereas boys were more socially exclusive and verbally aggressive than were girls towards the difficult peer (Underwood, Scott, Galperin, Bjornstad & Sexton, 2004). Alternatively, girls might be more inclined to rate their social standing more positively especially among same-sex peers with whom they have formed close friendships as girls spend more time and energy forming intimate relationships with same-sex peers. In contrast, boys tend to base their social standing on dominance hierarchies that are formed as a result of them constantly comparing their physical strength and dexterity during competitive games. Perhaps when they are judging their peer acceptance at the dyadic level, they may deem themselves less liked especially among peers who are either higher or lower than them in the dominance hierarchy. Alternatively, boys may just be playing it safe as they do not have as much information about their social standing at the dyadic level considering they spend more time playing in large groups. In line with previous research, boys and girls were not found to be biased in either direction when rating their acceptance among other-sex peers.

Caveats & Limitations

Several limitations of the current study warrant discussion. One caveat is that although peer acceptance ratings are considered to be reliable and valid measure of children's social acceptance, they are not perfect indicators. Moreover, it is uncertain whether the perceived acceptance ratings that these children reported are a true reflection of how they really see themselves or if instead they are an indication of how they would liked to be viewed (e.g. representational bias). Therefore, discrepancies between self and peer ratings should be viewed

only as estimates of children's biased and inaccurate self-perceptions. A second caveat is that this investigation did not attempt to directly assess any of the proposed mediators of hypothesized ethnic differences (e.g., family socialization practices; response styles). Thirdly, the results of this study may not be generalizable to children from other parts of the country as the participants who comprised this sample are from one geographic location. Moreover, this study only examined two ethnic groups and its sample was comprised of participants in a limited age range. This study focused on children ages 8 through 14 as their social comparison skills as well as their self-concept becomes increasingly developed in middle childhood and the magnitude of their discrepant self-perceptions would be less influenced by their level of cognitive development (Harter, 1985a; Montemayor & Eisen, 1977). Finally, SES is confounded with ethnicity in this sample and therefore, the interpretation and generalization of the ethnic differences observed in this study should be made with caution. Although the inability to tease apart the effects of SES and ethnicity is common among most samples, it should be noted that the ethnic differences found for this study might not be replicated in samples whose Caucasian and African American subjects are matched on SES.

Conclusions and Future Directions

This investigation has extended prior research by identifying the sex and ethnicity of children whose self-perceptions are not in line with their actual level of peer acceptance as well as the composition of those peer groups who pose the greatest challenge for them when making decisions regarding their peer acceptance. Such information is invaluable considering discrepant self-perceptions have important implications regarding the status of children's mental well-being. For example, discrepant self-perceptions have been shown to be a possible sign of psychopathology. Hoza and colleagues found that children with ADHD inflated their self-perceptions in domains of their greatest deficit and tended to overestimate their social acceptance (Hoza et al., 2004; 2005). Furthermore, these children were insensitive to social cues, primarily due to inattention, resulting in poor peer relations. Positively biased self-perceptions have also been found to be associated with higher levels of aggression and rejection by peers (David & Kistner, 2000) whereas negatively biased perceptions have been found to be associated with elevated depressive symptoms (Kistner et al., 2005). Moreover, inaccurate perceptions have been associated with internalizing behaviors such as withdrawal and loneliness (Cillessen & Bellmore, 1999). In contrast, realistic perceptions and overly positive impressions of acceptance

have been related to mental health (Beck, Shaw & Emery, 1979; Taylor, Lerner, Sherman, Sage & McDowell, 2003). Although the debate remains unresolved as to whether accurate or positively skewed interpretations are more adaptive, the implications of knowing which children are more inclined to have discrepant self-perceptions may be far-reaching especially in regard to future intervention strategies. Considering positively biased self-perceptions have been linked to rejection, aggression as well as mental health, future research should examine how overly positive impressions of peer acceptance among girls and African American children influences their childhood adjustment. Moreover, it is important to uncover the causes of both types of discrepant self-perceptions as well as their implications for maladjustment as differing patterns of results were found depending on whether measures of accuracy or bias were under examination. Finally, more research attention should be given to dyadic accuracy considering most studies have focused on dyadic bias and inaccurate perceptions may be a reflection of a skills deficit whereas bias may just be a function of children putting a different spin on how they are viewed by others.

The interesting findings of the present investigation have raised many questions that deserve future research attention and a few of these directions have been highlighted below. First, the present investigation revealed that there are no differences in girls' and boys' ability to determine their social standing among same- and other-sex peers. Thus, it would be beneficial for future studies to examine at what age sex differences in children's social perception skills emerge or if these sex differences are revealed when children are aware that this ability is under evaluation. Likewise, longitudinal designs should be employed to see if the pattern of biases change for girls and boys across different developmental periods (e.g., is there a reversal in the direction of girls' biases so that girls' perceptions of acceptance become more negative over time?). Second, considering positively biased perceptions of acceptance among African American children has been consistently replicated, it is important to determine whether there are differences in children's discrepant self-perceptions across varying ethnicities. Third, future studies need to isolate those factors that may lead to the development of overly positive self-perceptions on behalf of African American children. Perhaps incorporating measures that assess presentational bias as well as cultural socialization will help elucidate which explanation better accounts for African American's positive perceptual bias. Fourth, although much research has been done linking discrepant self-perceptions to psychopathology as well as mental health, many

negative and positive correlates of discrepant self-perceptions have not yet been uncovered. Consequently, future investigations are needed to determine under what conditions discrepant self-perceptions are detrimental as well as protective and whether some measures of accuracy and bias (e.g., for same-sex or other-sex, same-ethnicity versus other-ethnicity) are better predictors of adjustment than others. Finally, researchers have hypothesized that the self-perceptions of school-age children are influenced by their actual social experiences whereas the direction of this influence reverses in adulthood, therefore, studies are needed to uncover if and when this reversal takes place.

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BIOGRAPHICAL SKETCH

PERSONAL INFORMATION

Date of Birth: May 31, 1981
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EDUCATION

2005 to present **Doctoral Candidate, Clinical Psychology (APA Accredited)**
Florida State University, Tallahassee, Florida
Major Professor: Janet A. Kistner, Ph.D.

Areas of Concentration:

Developmental psychopathology; children's discrepant self-perceptions; sex & cultural differences; peer relations; overt/relational aggression; adjudicated youth, juvenile sex offenders

2000 to 2003 **Bachelor of Arts, Psychology & Anthropology**
Brandeis University, Waltham, Massachusetts
Cum Laude with Highest Honors in Psychology

PROFESSIONAL AFFILIATIONS

American Psychological Association, Student Affiliate (2003-present)
Society for Research in Child Development, Student Member (2006-present)
Association for Behavioral and Cognitive Therapies, Student Member (2007)

HONORS AND AWARDS

Golden Key Honor Society (2007)
Presidential Dean's List (2001-2003)
Psi Chi – National Honor Society in Psychology (2002-2003)
Undergraduate Research Committee Grant (2002)
Performing Arts Scholarship (1999-2003)

RESEARCH EXPERIENCE

May 2006 - Arthur G. Dozier School for Boys, Florida State University

Present Specialized Treatment Program, Marianna, FL

Coding STP and educational files of all past and current adjudicated juveniles committed to Dozier and JJOC. Duties include selecting variables to code, creating intake and discharge forms used to collect data, training and supervising undergraduates entering data, updating database when new variables are added, and verifying all data that has been entered. Interested in the same neurodevelopmental and family composition variables examined for undergraduate honors thesis in order to investigate same research questions in a juvenile population
Supervisors: Janet Kistner, Ph.D., Bryan Loney, Ph.D., Jeanette Taylor, Ph.D.

July 2003 - Massachusetts General Hospital, Pediatric Psychopharmacology

August 2005 Research Unit, Cambridge, MA

Pediatric Bipolar Team Leader: Oversaw all ongoing pediatric bipolar clinical trials conducted at the Pediatric Psychopharmacology Research Unit. Quality Assurance: study monitoring, weekly drug accountability and database audits to ensure data are entered and verified. Responsible for shipping and proper storage of all closed clinical trials. Work closely with study clinicians to facilitate communication between them and research coordinators. Weekly pediatric bipolar team meetings: responsible for recording minutes, development and implementation of any changes made to standard operating procedures for the office and study protocols, following up on outstanding issues for discussion at team meetings.

Supervisor: Joseph Biederman, M.D.

Clinical Research Coordinator: Coordinated one investigator initiated medication trial for the treatment of Bipolar Spectrum Disorder in Preschoolers and another investigator initiated medication trial for the treatment of Depression/Dysthymia in Adolescents with and without Bipolar Spectrum Disorder. Coordinated largest recruiting clinical trial in research unit investigating the effectiveness of Concerta in the treatment of Adults with ADHD.

Study Coordination: Prescreen potential subjects before scheduling initial evaluations with clinicians. Contact and schedule participants of study for weekly/monthly visits, cognitive testing, clinical assessments, phlebotomy procedures. Measure vitals and perform electrocardiograms. Ensure the appropriate clinician questionnaires, patient questionnaires, assessments, laboratory tests are completed/performed at each visit. Track weight of subject at each visit to guarantee subject is on the proper dose of study medication. Determine drug accountability at each visit. Verify appropriate medication dosage and quantity is available to dispense to

subject. Supervise Northeastern Co-ops assigned to working on study project.

Data Management: Verify the completion of all clinician questionnaires, patient questionnaires and research assistant forms. Ensure data is complete, entered and verified in 4-D database. Prepare Note to Files if data is missing and cannot be retrieved; file violations if necessary.

Protocol Maintenance: Submit amendments, exceptions, serious adverse events, violations and yearly continuing reviews for subsequent approval by the Institutional Review Board.

Sept. 2002 - May 2003 **Undergraduate Honors Thesis, Brandeis University, Waltham, MA**
Conducted research for 1-year with Dr. Raymond Knight at Brandeis University for the purpose of writing honors thesis entitled *Neurodevelopmental Problems as Contributing Factors to Pedophilia* and for its eventual publication. Performed analyses on SPSS software, recoded variables, identified relevant variables in archival data through the use of FileMaker Pro. Gathered articles by searching electronic databases such as PsychINFO, Medline and ProQuest. Learned APA guidelines for publication, how to write IRB proposals and have completed the Human Participants Protection Education for Research Teams online course, sponsored by the National Institutes of Health. Applied for and was awarded a grant to conduct undergraduate research.
Supervisor: Raymond Knight, Ph.D.

PUBLICATIONS

Dunkel, S., Kistner, J., & David-Ferdon, C. (2007). Influence of ethnic differences on the accuracy and bias in children's perceived acceptance. Manuscript in preparation.

Buckner, J., Lopez, C., Dunkel, S., & Kistner, J. (2007). Behavior modification for the treatment of reactive attachment disorder. Manuscript in preparation.

Counts-Allan, C., Dunkel, S., Hardee, C., David-Ferdon, C., & Kistner, J. (2007). Sex differences and aggressive behavior in children. Manuscript in preparation.

Kistner, J., Lopez, C., Dunkel, S., & David-Ferdon, C. (2007). Ethnic and sex differences in children's depressive symptoms. *Journal of Clinical Child and Adolescent Child Psychology*, 36, 171-181.

Biederman, J., Mick, E., Surman, C., Doyle, R., Hammerness, P., Harpold, T., Dunkel, S., Dougherty, M., Aleardi, M., & Spencer, T. (2006). A randomized, placebo-controlled trial of OROS methylphenidate in adults with attention-deficit/hyperactivity disorder. *Biological Psychiatry*, 59, 829-835.

PROFESSIONAL PRESENTATIONS

Counts-Allan, C., Dunkel, S., Hardee, C., David-Ferdon, C., & Kistner, J. (2007). Sex differences in children's relational aggression. Poster to be presented at Association for Behavioral and Cognitive Therapies. Philadelphia, PA.

Counts-Allan, C., Dunkel, S., Hardee, C., David-Ferdon, C., & Kistner, J. (2007). Sex differences and aggressive behavior in children. Poster presented at American Psychological Association. San Francisco, CA.

Kistner, J., Dunkel, S., & David-Ferdon, C. (2007). Ethnic differences in children's perceptual bias. Poster presented at the Society for Research in Child Development. Boston, MA.

Kistner, J., David-Ferdon, C., Lopez, C., & Dunkel, S. (2006). Positive illusions of peer acceptance: Implications for rejected children's feelings of self-worth and peer acceptance. Poster presented at American Psychological Association. New Orleans, LA.

CLINICAL EXPERIENCE

Sept. 2006 - present - **Florida State University Psychology Clinic, Psychological Trainee**
Supervised practicum as part of the Ph.D. clinical psychology requirement. Provides comprehensive psychological services to children and adults of the Tallahassee community and surrounding areas, to students attending FSU and other colleges, and to FSU employees. Responsibilities include screening potential clients, completing intake interviews, determining treatment recommendations, conducting out-patient individual psychotherapy with children, adolescents, and adults, providing parent training for families and conducting psychodiagnostic evaluations.
Supervisor: Jeanette Taylor, Ph.D.

Sept. 2001 - May 2002 - **Franciscan Children's Hospital & Rehabilitation Center, Residential Assessment Program, Mental Health Care Specialist**
One year clinical psychological experience with children diagnosed with severe emotional and behavioral disorders. Following treatment plans designed by each resident's respective Psychiatrist. Documenting each resident's progress throughout the day, awarding residents with points at shift's end as positive reinforcement for children's appropriate behavior. Conducting group and individual counseling. Experience with crisis intervention, anger management, problem solving skills, de-escalation tactics to prevent crisis situations and patient confidentiality. Tutoring patients in Math and English during school sessions.
Supervisor: John Gatinasi, APRN

TEACHING EXPERIENCE

Sept. 2003 - Florida State University, Departmental Assistant

August 2004 Served as a teaching assistant for undergraduate courses including Introduction to Psychology, Abnormal Psychology, Sensation and Perception, Psychology and Law, and Cognition and Learning. Responsibilities included proctoring exams, grading quizzes, essays, and papers, logging and posting exam results, and tutoring individual students.