Schema of Family: A Developmental Comparison of Kinetic Family Drawings

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Abstract

The purpose of the current study was to examine the developmental differences between children in the fourth grade and adolescents in the eighth grade on their schema of family as portrayed in their drawings. The Kinetic-Family-Drawings assessment (KFD) was used to view the relationship and interaction between the child and their parents. Drawings were collected from 45 children it consisted of 22 females and 23 males (28 fourth graders and 17 eighth graders). Each child and/or adolescent drew a family doing something. The results indicated that the size of the human figure drawn was a significant finding. Furthermore, the results for the additional three hypotheses indicated strong trends and the direction of differences when they occurred were as hypothesized. Fourth graders on average displayed a greater number of smiles and joint activity, as well as, less distance between themselves and their closest parent, in relation to eighth graders. As predicted the ways in which children and adolescents portray themselves within their family differs at each age of development and thus adds to previous developmental research.

Keywords: Children's drawings – Family – KFD - Adolescent individuation - Adolescent and family relationships

Introduction

There has been an abundance of research that has examined the relationship between a child's family dynamic and a child's development of self within the family, but minimal research that has examined the developmental comparison of children and adolescents perception of their own self within their family. The goal of the present study was to examine adolescent's schema of family and their relationships within their family, as compared to middle-childhood aged children, using their kinetic family drawings.

Formation of Family Schema

A child's relationships and interactions with family members can affect how they relate and view themselves within their family. Studies have shown that children acquires their unique sense of self-worth and family-worth as a function of their direct and indirect interactions with their family, which result in perceived successes (i.e., reinforcements) and failures (i.e., punishing experiences) in varying ecological contexts (Bracken 1992, 2003). When children receive direct and indirect environmental feedback from the individuals around them (i.e., family members), it contributes to their formation of their own unique set of characteristics or qualities. Furthermore, it has been proposed that there is interplay between a child's biology, psychology, and social recognition and responses within a historical context (Kroger, 2008). At each stage of development a new challenge or psychological conflict is presented to the

child and resolution of these conflicts results in healthier sense of self and one's relationships. The different ways children and adolescent acquire their view of themselves and their family differs. However, very little is known about the developmental differences in the perception of family in middle-childhood aged children and adolescents.

Formation of Family Schema in Middle-Childhood

Middle-childhood is a developmental period in which children rely on their interactions and feedback from their family. Based on the quality of early parent–child interactions, children are thought to develop an 'internal working model' consisting of beliefs and expectations regarding relationships (Bowlby, 1969). These expectations and beliefs that are instilled into the child by their parents affects the ways in which the child interacts with their family, as well as, the child's view of themselves. Sensitive, responsive parenting helps children internalize positive familial expectations and gives children a sense of self-worth within their family (Leon, Wallace, & Rudy, 2007). Olsen, Russel, & Spenkle (1983) found that the central levels of cohesion, the emotional bonding that family members have toward one another and adaptability were optimal for the development of effective family functioning. A child with healthy cohesion between themselves and their family members positively affects their overall perception of family relationships and themselves. Furthermore, Richards (1989) suggested that an optimal interpersonal relationship would incorporate the child and their family's need for connection, support, and approval, and would also promote higher levels of individuation. Children who have support, approval and a connection with their family members have a stronger chance to individuate themselves from their family in a healthy way. Finally, as children transition from middle-childhood to adolescence the ways in which they relate and perceive themselves and their family changes.

Adolescence Formation of Family Schema

Adolescence is time period marked by extreme change between themselves and their parents. As adolescence become more physically mature, they often seek more independence and autonomy, and they may question family rules, and roles, leading to conflict over issues such as dress and appearance, chores, and dating (Eccles, 1999). During this time of change, parent-child interactions seem to diminish and the activities in which parent and child engage in. It can be argued that distancing in parent-adolescent relations has a functional value for adolescent in that it fosters their independence and prompts them to try more things on their own (Eccles, 1999). Evidence from a variety of sources suggests that although adolescents want a certain amount of distance from their parents, they often want to fill this void with close relationships with other, non-familial adults (Peterson, 1998). Furthermore, adolescents begin to give precedence to social activities with peers, peer acceptance and appearance rather than academic courses or organized activities (Eccles, 1999). These outside influences contribute to the adolescent's internal change in view about family and interactions with family members. Finally, studies have shown that although adolescents are experiencing extreme change, it is through their family environments (i.e., relationships and interactions) which offer opportunities for personal autonomy and encourage early adolescent's role in family decision making, are associated with positive outcomes such as healthy family relationships (Eccles et al., 1996).

Drawing as a Research Tool

As children ascend through the stages of development, a surfeit of complex ways in which to communicate occurs, and one vital form of communication that emerges is the use of drawing. Previous studies that have used children's drawings have focused on understanding the developmental differences between genders (Silver, 1992, 1993), children's emotionality (Koppitz, 1968; Goldner & Scharf, 2012), and children's visually realistic contour (Kuttner, Kerzmann, & Heckhausen, 2002). However, recent research has used children's drawings as

a way to tap into their social worlds and as a way to gain a better understanding of their social values (Aymen-Nolley & Nolley, 2005).

Past research has shown that children's drawings produce many positive advantages and help with many developmental needs. Ayman-Nolley & Nolley (2005) proposed four advantages that arise from the use of drawings: 1) it allows researchers to ask children about social phenomena, 2) drawing is an engaging task and keeps children motivated, 3) it helps children overcome the difficulties they may have in fully disclosing their opinions, thoughts and feelings, and 4) the act of drawing is private, so children will be more likely to disclose what their thoughts and perceptions are.

Psychologists use drawing assessments because they are easy to administer, non-threatening, and can be used when other techniques are limited by such factors as, language barrier, cultural deprivation, and the inability to communicate (Burns & Kaufman, 1970). In the past psychologists have been able to develop new research techniques and assessments and a few of these assessments include: The Draw-A-Person Test, House-Tree-Person Drawing Test, and Kinetic Family Drawing Test. All of these assessments are still used today and the Kinetic Family Drawing Test is one of the most commonly used by psychologists.

In 1970, Robert Burns and Harvard Kaufman introduced the Kinetic Family Drawing Test. With the creation of the KFD, Burns and Kaufman were able to differentiate their assessment, from other family drawing assessments, by being the first to introduce action instructions. A child, prior to engaging in the KFD Test, was instructed to "draw a family doing something", whereas, in past assessments children were instructed to just "draw a family". The minor alteration made to the instructions, by Burn's and Kaufman, assisted in creating 'some kind of action' between the child and their family (Handler & Habenicht, 1994). According to Burns (Burns, 1982; Burns & Kaufman, 1970, 1972), the KFD allows psychologists the ability to: 1) see the 'self' as it reflected and expressed in the family; 2) it enables the child to depict the family as a functioning, active unit, and 3) allows psychologists to see the child's impressions of these interactions among family members (Handler & Habenicht, 1994). KFD's have been used to assess many areas of psychological functioning in children, but minimal attention has been shown in understanding the developmental differences between both middle childhood and adolescent's self-concept in their families.

Kinetic Family Drawings and Self-Image

Previous research has examined children's drawings to understand their concepts of various social roles and have focused on measuring factors such as how children and adolescents view leadership (Aymen-Nolley & Nolley, 2005), friendship (Cook, Buehler & Blair, 2013), gender differences (Silver, 1992, 1993), and ethnic differences (Gernhardt, Rubeling, & Keller, 2014). In studies of family research using drawings, a very limited amount of research has looked at variables such as the size of the human figures, the spatial proximity between each human figure, the mood displayed on each figures face, and the activity the child and their parents are engaged in, as factors for measuring a child's perception of themselves within their family schema (Bennett, 1964; Prytula, Phelps, Morrissey, & Davis, 1978).

Individuals who are advocates for using children's family drawings suggest that certain artistic traits reflect unique personality traits. The size of the figures displayed in a child's drawing has been the most closely related trait to self-concept in relation to family schema. If a child draws a figure that is disproportionate (very small/very large) in size to the rest of the figures, it is believed to be a cue for low individuation and if the child draws proportionate (equal to) figures, then the child has a high individuation (Bennett, 1964). Bodwin and Bruck (1960) conducted a study using 13 characteristics deemed worthy for measuring a child's self-concept within children's drawings. Their results indicated a positive and significant correlation between their rating scale and the child's drawing score. It was concluded that the scoring system created

was a valid and reliable measurement of a child's self-concept. In contrast, Bennett (1964) conducted a study and tested 196 sixth graders and found that figure size indicated no significant difference between children classified with high self-concept in comparison with children classified with low self-concept. Perhaps the reason the results are varied amongst studies is because there is a lack of comparison between other artistic traits such as, the spatial proximity, the mood of the figure, and the activity being displayed in children's drawings.

As children and adolescents develop, the ways in which they express themselves varies and the ways in which they display emotionality varies as well. Is it possible that these differences, in expression and emotionality, could be present in their family drawings?

Boyatzis and Watson (2000) found that middle-childhood participants drew themes of power, competition, and depersonalized aggression, as well as, static images of natural settings with people and/or animals. Similarly, in a study by Akseer, Lao, and Bosacki (2012), found that middle-childhood participants are more likely to draw competitive rather than co-operative activities or environments. In regards to adolescence and their depiction of emotion, DiLeo (1973) found that adolescents express emotionality by displaying pleasant interactions, or hostile interactions, or no interaction at all, with each member of the family doing something in isolation (compartmentalization).

The ways in which middle-childhood aged children and adolescence portray emotions varies, but other variables such as spatial proximity and activity may contribute to the understanding of children and adolescent family drawings.

When children are young, they depend on their parents for food and shelter, emotional and social support, and security (Koppitz, 1968). Since children and adolescents are so reliant on and interactive with their parents, do their drawings accurately depict these same attitudes? A limited amount of research has looked at spatial proximity between family members and activity displayed as a measurement for a child's sense of self and family schema.

Golomb (2004) found that middle-childhood aged participant's symmetrical arrangements include: equal spacing among figures, similar distances from the edges of the page, variation in size of figures and bilateral symmetrical arrangements around a central figure. In contrast, adolescents drew figures closely together to indicate a special relationship or a common interest, and such grouping occurs on the basis of similarity of size, color, form, and activity (Golomb, 2004). Furthermore, Procaccia, Veronese, and Castiglioni (2014), found that well-individuated children depicted figures that were congruously distributed over the available space and of a congruent size. And in contrast, poorly individuated children drew family drawings that lacked the use of all of the appropriate space and depicted figures overlapping or distant from each other (Procaccia, Versonese, Castiglioni, 2014).

Previous research studies comparing adolescence and middle-childhood perception of family relations, using family drawings, has measured only a limited number of variables present in children's drawings. What previous studies have rarely examined are variables such as: the size of the figures, the spatial proximity between child and closest parent, mood (smiles), and the activity the child and his/her parents are engaged in.

Research Question and Hypothesis

Unlike previous studies that have analyzed children's drawings, the current study looks to differentiate itself from previous studies by examining middle-childhood and adolescent aged participants family drawings and measuring four dependent variables: size of the human figures, the spatial proximity between each human figure, the emotion and mood displayed on each figures face, and the activity the child and his/her parents are engaged in. The following

variables are intended to measure a child's perception of self within their family schema and the current study hopes to solidify these four variables as accurate measurements.

This study, therefore, has examined if Kinetic Family Drawings distinguishes children and adolescent's concept of self within their family and/or depicts their individuation from his or her family. There will be four hypothesis tested in the current study: 1) Eighth grade participants will draw more figures equal in size, in relation to their parents, 2) Eighth grade participant's will display more spatial distance between themselves and the closest drawn parent than will middle-childhood aged participants, 3) Fourth grade participants will display a greater number of smiles on family members than will adolescent participants and 4) Fourth grade participants will display more joint activity between themselves and their family than will adolescent participants. The four hypotheses in the current study that were measured using four dependent variables are: 1) the distance from child to closest parent, 2) the relative size of child in relation to parent(s), 3) the joint engagement in an activity with parent(s) and 4) the number of smiles present on the child and parent(s) face.

Method

Participants

The age groups that were examined for this present study were fourth and eighth graders. The reasoning for choosing the two grade levels is because it is not until middle-childhood that biological relatedness becomes more important (Roe, et al., 2006). This study will use previous drawings collected in 2013 in Saba Ayman-Nolley's lab. The participants in the current study were obtained from an urban Midwestern public elementary school. A total of 143 drawings were collected it consisted of 78 fourth grade drawings and 65 eighth grade drawing. The schools records were used to indicate each child's ethnic background, as well as, grade level. The ethnic backgrounds of the participants were as follows: Caucasians 23%, Latino 38%, Asian 31%, African American 4%, and Other/multi-racial 4%. School records did not provide any further details about the child or their current family status (i.e., single parent or two parent homes).

Materials

The materials used were an 8 1/2 X 11 white sheet of paper, one number two pencil, and one box of twelve colored pencils.

Procedure

The drawings were obtained in the participant's (4th and 8th grade) weekly art class. Prior to the children entering the classroom an 8 1/2 X 11 white sheet of paper was placed at each available seat, as well as, a number 2 pencil, and a one box of twelve colored pencils.

When the participant's entered their weekly art class, they took their seats and were instructed to confirm that they had received all the necessary art materials for partaking in the activity. Once they had confirmed that they had received all the necessary art supplies to partake in the study, they were instructed that they were to work independently on their drawings and not to converse amongst each other. Furthermore, the participants were told that the current art project is not for a grade and that they have the duration of the art class to complete their family drawing. If the participant's had any questions that were concerned with the activity, during the duration of the drawing period, they were informed to raise their hand and a researcher would come assist them with any issues or concerns they may have, or with any directions they did not understand.

The first instruction that was given to the students was the prompt, which was to "draw a family doing something". After most children had finished their drawings, they were instructed to label all of the family members in the picture and to provide a short description of what they had drawn their family doing on the back of their paper. When the participant's finished drawing, labeling and providing a short description of their family drawing, a researcher examined their family drawing to confirm that all the necessary information was provided. Once the participant's drawing had been confirmed to be complete by the researcher, it was taken from the participant and securely put into an envelope. When the duration of the art class was over, the researcher thanked the participant's for partaking in the current art project.

Coding

A coding sheet was used to examine what was present in the drawings and drawing description, as well as, the demographic information of each participant. For the purpose of the current study, the drawings that were identified via labels and descriptions as being the child's family were used. The total number of family drawings used was 45 it consisted of 22 females and 23 males, 28 fourth graders and 17 eighth graders. The demographic information obtained through the school was included, the age, gender, and ethnicity of the participants. The coding of the drawings was done in a lab at a local Midwestern university and the drawings were securely locked in a lab at all times.

The dependent variables that were coded from the drawings and their descriptions include:

> *1) Relative Size-* Relative size was determined by examining the size of the parent closest to the child, displayed in each family drawing, in relation to the size of the middle-childhood aged and/or adolescent participant. A measurement was taken from the top of the figure (head or hat, if included) to the bottom of the figure (i.e. feet and/or shoes). Three categories were used to decide the size of the figure. The three categories were: 1) self-smaller than parents, 2) self-equal to parents or 3) self-larger than parents.

> *2) Spatial Proximity-* Spatial proximity was defined as the space displayed in each drawing between children and their closest parent. Spatial proximity was measured by indicating the number of centimeters from the top of the child's head to the top of the closest parent's head.

> *3) Presence of Smile-* was defined as the number of family members smiling (lips clearly turned upward).

> *4) Joint Activity-* the children's drawings and descriptions were used to determine if the child was engaged in a joint activity or not engaged in a joint activity with their parent(s). Activities include some kind of joint activity between the child and their parent(s) (i.e. sports, cooking, playing, eating, etc.). Engagement of activity was measured using a yes or no scale. See appendix A for detailed coding sheet.

Results

The percentage of children who drew figures of equal size to their parents was 58% and the percentage of children who drew figures smaller than their parents was 42.2%. The percentage of children showing joint activity with their parents in their family drawing was 64.4% and the percentage of children who did not draw themselves in a joint activity with their parents was 36%. The overall mean of children that drew themselves and their parents with smiles was 2.24. The range for the number of smiles drawn, on both the child and their parents, was zero to six. The overall mean for the distance displayed between the child and their closest parent

was 7 cm. The range for the distance displayed between the child and their closest parent was 18.5 cm.

In order to examine the differences between the two groups (4th and 8th graders) family drawings, the following tests were administered:

Hypothesis 1: Eighth grade participants will draw more figures equal in size, in relation to their parents

A chi-square test was performed to examine the relationship between fourth and eighth graders' family drawings and size of the figures (parents) drawn. The relationship between these variables was significant, X^2 (1, $N=45$) = 3.91, p = .048. Eighth graders were more likely to draw figures of themselves equal in size to their parents, whereas in contrast, fourth graders were more likely to draw figures of themselves smaller in size to their parents, (See figure 1). The test indicated that 77% of eighth graders drew themselves equal in size to their parents compared to only 44% by fourth graders. Furthermore the test indicated that 54% of fourth graders drew themselves smaller in size in relation to their parents, compared to only 24% by eighth graders. The results indicate that relative size is a significant factor when it comes to measuring a child's and/or adolescent's self-concept within their family.

Figure 1. Cumulative Percentage of relative size and grade level
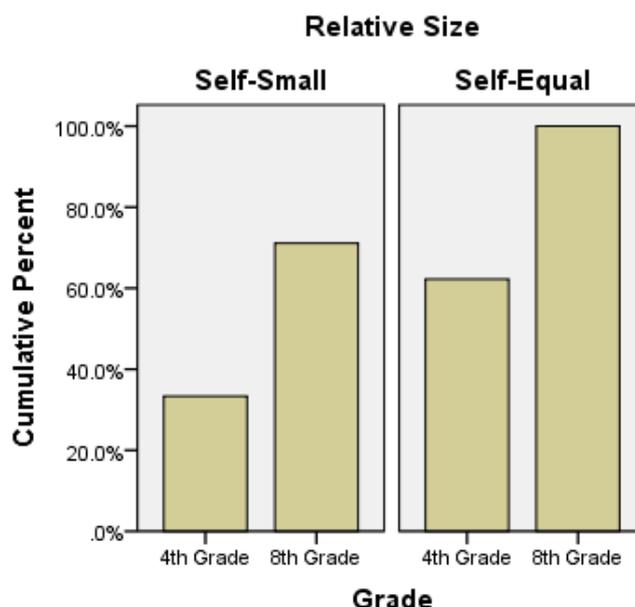
Hypothesis 2: Eighth grade participants will display more spatial distance between themselves and the closest drawn parent than will fourth grade participants

To test the difference between the distances from the child to the closest parent, an independent T-test was conducted. Figure 2 indicates the mean distance between child and closest parent on fourth grade family drawings was (M =6.8036, SD =4.8349), and the distance on eighth grade drawings was (M =6.6176, SD =4.3679). This difference was not significant t (43) = .13, p > .05.

Figure 2. Average spatial distance between grade level and parent

Spatial Proximity
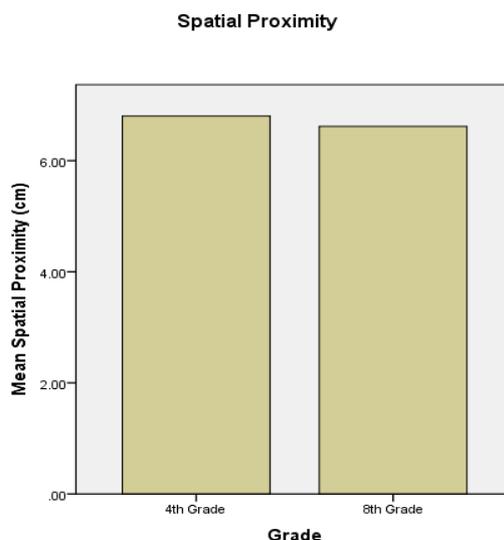
Hypothesis 3: Fourth grade participants will display a greater number of smiles on family members than will adolescent participants

To test the difference between grade level and the number of smiles displayed in each family drawing, an independent T-test was performed. Figure 3 indicates the average number of smiles for fourth graders' family drawings was (M =2.5714, SD = 1.8545), and the number of smiles displayed for eighth grade family drawings was (M =1.0759, SD =1.611), but this difference was not significant t (43) = 1.6, p >.05. The results indicated that there is a marginally significant finding which shows the expected trend, of fourth graders drawing more smiles on family members than eighth graders.

Figure 3. Average number of smiles displayed in relation to grade level

Number of Smiles
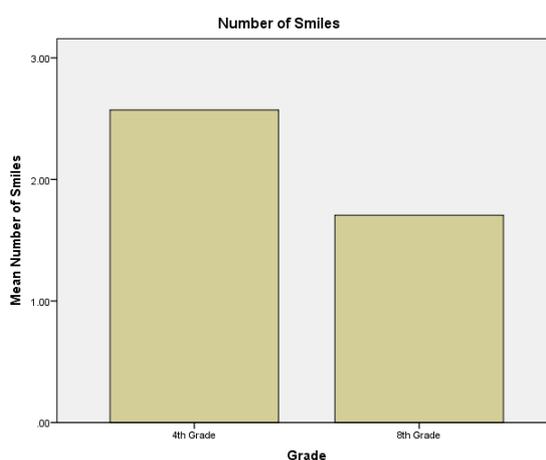
Hypothesis 4: Fourth grade participants will display more joint activity between themselves and their family than will adolescent participants

A chi-square test was used to examine the relationship between fourth and eighth graders' family drawings and their participation in a joint activity, or a lack of joint activity, displayed between the child and their parents. The relationship between these variables was not significant, X^2 (1, N=45) = 1.578, p = .209, (See figure 4). Although there was no significant finding, the fourth hypothesis was supported. On average, 71% of fourth grade participants

drew some kind of joint activity between themselves and their parent(s), and only 53% of eighth graders included some kind of joint activity between themselves and their parent(s).

Figure 4. Percentage of joint activity between grade levels
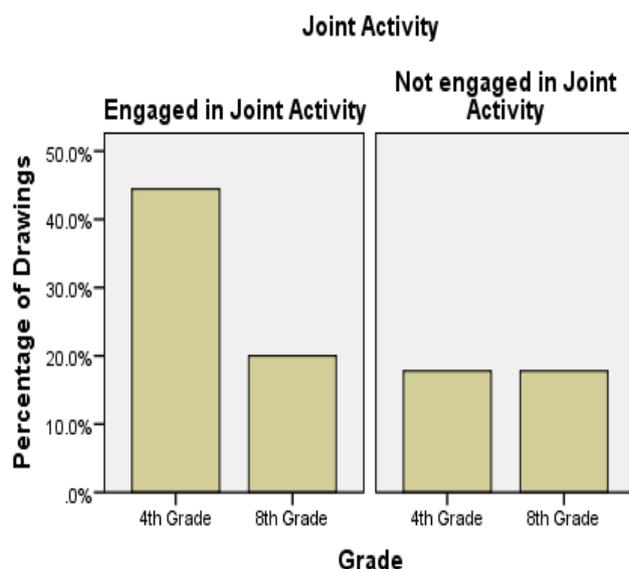
Discussion

On the whole, the results of the study imply that kinetic family drawing assessments are potentially accurate and reliable developmental measurements. Family drawing assessments are an effective instrument for exploring the more subjective, personal, and unconscious aspects of representational models of the self in relation to family (Procaccia, Veronese, and Castiglioni, 2014).

The results of the study indicated a significant finding between grade level and relative size. Relative size was related to the size of the child and the closest parent to the child. It was hypothesized that eighth grade participants would draw themselves equal in size to their parent(s). The confirmation supports findings by Bodwin and Bruck (1960) that relative size is in fact, an accurate measurement of individuation. In relation to spatial distance between child and parent, it was hypothesized that eighth grade participants will display more distance between themselves and their parents than will fourth grade participants. When analyzing the physical distance between the child and their parents it was found that eighth grade participants drew themselves, on average, closer to their parents than did fourth grade participants. Findings supported Eccles (1999) study that distancing in parent-adolescent relations has a functional value for adolescent in that it fosters their independence in order to help them individuate themselves within their family. Furthermore, when analyzing expression and mood, it was predicted that fourth grade participants would display more smiles on family members' faces than eighth grade participants. On average, fourth grade participants drew more smiles on their family members than did eighth grade participants. These findings indicated that the trend was strong and in the same direction as hypothesized. These results are supported by Leon, Wallace, & Rudy (2007) that sensitive, responsive parenting helps children internalize positive views about themselves and the relationships between family members. When children have parents who are responsive and sensitive to their needs then they are more likely to gain a better perception of themselves and the way they perceive their relationships within their family. Finally, in regards to joint activity between the child or adolescent and their parent, it was hypothesized that fourth grade participants would display more joint activity between themselves and their parents. The findings indicated that there was a relationship between grade level and joint activity. Results showed that fourth graders, on

average, displayed more engagement in joint activity with their parents than did eighth grade participants. These results fall in-line with previous research findings by Olsen, Russel, & Spenkle (1983) which indicated that the emotional bonding that a child and their family members have toward one another was optimal for the development of effective family functioning.

Other contributions to be further examined, that might have affected the current study might be the differences between gender, the differences between ethnic groups and family structure. For example, Silver (1992, 1993) findings indicated that girls and boys represent themselves and their families in different ways. In regards to examining ethnic differences, it is important to keep in mind that what is deemed effective and appropriate in only culture might not be considered appropriate and effective in another (Garbarino et al., 1995). These differences could affect the ways in which children perceive themselves and their family. As a result, the child's perception of self and family could be affected by the structure in which they are raised. Children who live in step-families or non-biological families may face a more difficult cognitive task in defining family (Roe et al., 2006). It is suggested that future studies should consider examining and emphasizing gender differences, ethnic differences, and the type of family structure.

In regards to future research, the method section should be modified in order to exploit internal and external validity and as a way to be able to generalize the findings to more diverse populations. For example, obtaining the right sample size, with an even distribution, would help to provide more equal representation between ethnic groups. The majority of the participants in the study were either Caucasian or Latino. Not having the proper distribution of ethnicities contributes to the results being skewed and also not able to generalize the findings with the rest of the population. In addition, researchers should provide children with the option of drawing their family in a classroom or in private. It was very apparent after viewing the drawings that other children had an effect on what others depicted. With these modifications more data could be collected and analyzed and more results that could be generalized for the rest of the population.

Theoretically, this study provides a better understanding of children and adolescents' development differences in their perception of self and family schema. The use of drawings as a research tool helps to assist by tapping into a child's internal sense of self and seeing the way they view themselves and their family. In addition, the use of drawings as a research tool becomes stronger and more reliable assessment for measuring the developmental differences in various age groups. Practically, examining these differences and understanding the concept of how children perceive themselves within their family provides clinicians and educational settings, the opportunity to better understand the family relationships contributing to a wide range of age groups and their view of self, either positive or negative.

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Appendix A: coding sheet and manual

Self and Parent Drawing Comparison 2014
Tyler Lohn

Coding Sheet

1. **Subject Number:**

2. **Grade:**   4th grade (1)   8th grade (2)

3. **Gender**   Male (1)   Female (2)

4. **Ethnicity**   Caucasian (1)
   Hispanic (2)
   Asian (3)
   Asian/Asian Pacific Islander (4)
   African American (5)
   Two or more Races (6)
   Other/Multi-race American Indian/Alaska Native (7)

5. **Relative Size:**   Small (1)   Equal (2)   Large (3)

6. **Number of Smiles:**

7. **Spatial Proximity (distance):** ___cm

8. **Engaged in activity with parent:**   Yes (1)   No (2)