

Reference:

Burkitt, E. & Watling, D. (in press, 2013). The impact of audience age and familiarity on children's drawings of themselves in contrasting affective states. *International Journal of Behavioral Development*.

The impact of audience age and familiarity on children's drawings of themselves in  
contrasting affective states

Esther Burkitt

University of Chichester

Dawn Watling

Royal Holloway, University of London

## Abstract

The present study was designed to investigate the impact of familiarity and audience age on children's self presentation in self drawings of happy, sad and neutral figures. Two hundred children (100 girls and 100 boys) with the average age of 8 yrs 2 months, ranging from 6 yrs 3 months to 10 yrs 1 month, formed two age groups and five conditions ( $n=20$ ). All children completed two counterbalanced sessions. Session 1 consisted of drawing a neutral figure followed by a sad and happy figure in counterbalanced order. The drawing instructions specified the age of the audience (adult Vs. child) and familiarity (familiar Vs. unfamiliar) differently for each condition. Measures of colour preference were taken in Session 2. Certain drawing strategies, such as waving and smiling varied as a function of audience age and familiarity whilst others, such as colour use, did not. The results are discussed in terms of cue dependency and framework theories of children's drawings and the need to be aware of specific characteristics of who children are drawing for.

Keywords: Communication; audience; familiarity; drawing; affect

## Introduction

When we look at children's drawings of themselves there are many issues that determine what we perceive the drawing to mean. Attempts have been made to assess whether information in drawings can be reliably and validly interpreted for emotional information about the child artists. Children's human figure drawings have been viewed as signs of the emotional adjustment level (Machover, 1949), indicators of personality states and traits (Hammer, 1958, 1997; Koppitz, 1966, 1968) and signs of the intellectual and developmental stages (Cox, 1992, 1993, 2005; Goodenough, 1926) of the child artist. Children's human figure drawings have also been seen as ways in which a child can signal their feelings towards themselves (e.g., Cox, 1992, 2005; Hammer, 1997; Silver, 1996). However, most claims attesting that emotional information about the child artist can be interpreted from their drawings have been based in case studies (Hammer, 1997; Malchiodi, 1998), professional observations (Koppitz, 1966, 1968; McNiff, 1992) and poorly controlled research (Craddick, 1961, 1963; Solley & Haigh, 1957) and has often assumed, rather than verified (e.g., Hammer, 1997; Koppitz, 1968), that children are drawing human figures with the intention of representing emotional information about themselves.

### *The need to specify the audience*

Investigations to date have tended to overlook the issue of whether children's drawings of themselves vary depending upon 1) characteristics of the audience whom the child thinks will view the drawings and, 2) the kinds of information the child perceives will be needed by the audience to understand the character of the drawn figures. This possibility is important to systematically investigate given that children's drawings are often regarded as a means of nonverbal communication by practitioners. For example, clinicians, educationalists, forensic psychologists and academics, often regard drawings as a means by which children can signal feelings about themselves (e.g., Jolley, 2010; Malchiodi, 1998).

The majority of developmental psychological research literature regards drawing as a method by which children can communicate their emotions and knowledge (Burkitt, Barrett & Davis, 2003a, 2003b; Sitton & Light, 1992). We know that children can alter the information they encode in their drawings when they are specifically told that the drawing has a communicative function and when representing positional information (Callaghan, 1999; Davis, 1985a, 1985b) and if they are already aware of the public nature of art (Freeman, 1995). Literature on children's drawings (Burkitt, Barrett & Davis, 2004; Callaghan, 1999; Cox, 2005; Jolley, 2010; Light & McEwan, 1987; Light & Simmons, 1993; Sitton & Light, 1992) suggests that children vary what they draw as a function of a number of factors, including the emotional nature of the drawing topic, the type of drawing task involved and the perspective they are attempting to depict.

In terms of communicating emotional information, children strategically vary certain aspects of their drawings depending on how they feel about the topics they draw and the emotional character of the topics they draw (Burkitt & Barnett, 2006; Burkitt al., 2003a, 2003b). Children often increase the size of positive stimuli, possibly as a result of social scaling or an appetitive mechanism (Thomas, Chaigne & Fox, 1989), sometimes decrease the size of negative stimuli, and often vary the use of colour and details in their drawings in relation to both how they feel about the colours they use, and the emotional character of

the topics which they are representing (Alschuler & Hattwick, 1947; Anastasi & Foley, 1941; Boyatzis & Varghese, 1994; Brechet, Baldy, & Picard, 2009; Burkitt, 2008; Burkitt et al., 2003a, 2003b, 2004; Hammer, 1958; O'Hare & Cook, 1983; Melkman, Koriat & Pardo, 1976; Misailidi & Bonoti, 2008; Pranckeviciene, Zardecktaite-Matulaitiene & Soikinaite, 2009; Solley & Haigh, 1957; Zentner, 2001).

As drawing is a form of communication it is therefore, by definition, also a social activity involving an interaction between the drawer and their intended recipient or audience (Freeman, 1995). How we communicate with others has implications on how others will perceive the self. Children first become concerned with how others perceive the self during middle childhood when their public image becomes an increasingly salient issue (Parker & Gottman, 1989). Therefore, it would be at this time that children would be increasingly likely to try to construct a positive image of the self within their audience (Watling & Banerjee, 2012). Research has demonstrated that between the ages of 6 and 8 years children will use certain non-verbal (e.g., change facial display to mask their true feelings; Banerjee & Yuill, 1999a, 1999b) and verbal self-presentational tactics to create impressions in an audience (e.g., make a statement so others think they are nice; Fu & Lee, 2007). From 8 years children demonstrate an understanding of the social evaluative motivation for using self-presentational tactics (Banerjee, 2000; Watling & Banerjee, 2007a, 2007b; Yoshida, Kojo, & Kaku, 1982).

Importantly, in verbal communication, there are many factors about the listener that the child speaker will take into account when deciding what to say, for example whether the listener is a peer or an adult (Banerjee, 2002; Watling & Banerjee, 2007a, 2007b) and whether or not the child is familiar with the listener (Fu & Lee, 2007). In fact, we know that children explicitly alter certain behaviours in light of information about an audience. Children have been found to report that they would be more likely to control their expression of emotions with peers than with either parent or when alone (Zeman & Garber, 1996). Children's self-descriptions have also been found to differ when they were alone versus when they were with a small group of peers who would view their responses. Banerjee and Lintern (2000) found that when boys and girls were judging how much they liked to play with particular toys and engage in particular activities, the 4- to 6-year-old boys were more likely to judge in front of peers that they preferred gender-specific toys and activities than when they made judgements in an alone condition. In contrast, the girls' judgements did not differ between the two conditions, which may reflect societal influence (i.e., social expectation is greater for sex-typed behaviour in boys than girls). In fact, Huguet and Regnier (2007) found that just by describing a mathematical task as geometry versus memory game, girls performed less well than boys on the geometry condition, whereas there was no difference for the memory game condition thereby implicitly and indirectly behaving in line with gender stereotypes. Interestingly, the 8-year-old boys and girls were less likely to modify their judgments when an audience was present, which was attributed to the fact that they had less rigid gender stereotypes. It therefore appears that children will be more or less motivated over time to present themselves in different ways.

In addition to children's generally communicative tendencies, researchers have found that when given information about their audience children are able to modify judgments about appropriate self-presentations (Banerjee, 2002) as well as how they themselves present the self (Aloise-Young, 1993). Children judge that modesty is good and immodesty is

bad more often for peer than adult audiences (Watling & Banerjee, 2007b), and from 8 years are more likely to justify self-presentational behaviours as having a social evaluative purpose when it was a peer than an adult audience (Watling & Banerjee, 2007a). Children have been found to judge that a child who says that they prefer studying to playing sports after they are told that the adult audience prefers studying, will promote a more positive impression and relationship with the audience (Banerjee, 2002). In terms of their own self-presentation children will amend self-descriptive statements after they are provided with new information about what the audience likes (Aloise-Young, 1993).

In line with this, there is evidence that children will alter their drawings of unspecified human figures that have been characterised as happy and sad when drawing for either an adult or a peer audience (Burkitt, Watling & Murray, 2011). Burkitt and colleagues found that while some basic emotional features (e.g., smile when happy) were included in all drawings, when given specific audience information (peer or adult) children were more likely to include communicative features than when given no audience information. For instance, in their happy drawings they were more likely to include a waving figure. They also included features that were specific to the type of audience, whereby in happy drawings for adults they were more likely to depict the figure giving flowers, while in sad drawings for adults they were more likely to depict the figures showing a thumb down but for peers they were more likely to depict the figure with stomping feet. This research demonstrates that children did consider who would be viewing their drawings when communicating affective information and systematically included different features within their happy and sad human figure drawings that were reflective of what would be perceived as social acceptable emotional displays with the specific target audience. While this research explored peer and adult audiences it did not examine children's drawings of themselves or the factor of familiarity that has been implicated in influencing the strategies that children use in verbal communication (e.g., Fu & Lee, 2007). The present research study was therefore designed to explore the role of familiarity with children's nonverbal drawing communication.

In summary, from a young age children have been shown to use different self-presentational tactics, but it is only around 8 years old that they begin to report the social evaluative reasons for using such tactics.

#### *Audience familiarity*

It was highlighted above that children are more likely to modify their behaviour depending on audience information, and that in some cases when an audience is specified (both peer and adult) they use self-presentation in comparison to when no audience information is specified. In addition to this, the level of familiarity with the audience can also make a difference. Fu and Lee (2007) found that preschool children (4 to 6 years) were more likely to flatter both peers and adults, but that they were more likely to flatter familiar peers and adults than unfamiliar peers and adults; although, it is important to note that flattery was used with all audiences (on 50% of occasions with unfamiliar audiences and 69% of occasions with familiar audiences).

Audience familiarity clearly could influence children's behaviour in a variety of ways. In forensic interview settings, for example, children may feel intimidated by an unfamiliar interviewer and offer less verbal information than they might to a familiar interviewer

(Camparo, Wagner & Saywitz, 2001). However, we can see from work on self-presentation, that it is also possible that children may use more self-presentation with familiar than unfamiliar people (Fu & Lee, 2007). In fact, in clinical, research and educational settings (e.g., Hammer, 1997; Lewis, Kellet, Robinson, Fraser, & Ding, 2004) the presence of a familiar clinician or teacher is regarded as crucial to the maintenance of the communicative element of the relationship. The characteristics of an audience must be specified in order to make claims about how the audience influences children's drawings and to attempt to reliably understand the emotional information children are conveying through their pictures. Children's drawings are used clinically and therapeutically to generate discussion, to supplement or substitute for verbal communication and possibly aid diagnoses (Dalley, 1984; Hammer, 1997; Hunsley, Lee, & Wood, 2003; Malchiodi, 1998); they are used by educationalists for similar purposes, and forensic practitioners have begun to assess the utility of drawing to aid eye witness interviews of potentially emotional events (Hunsley et al., 2003). Yet, there is no reason to believe that children will draw affective topics in the same way for all audiences.

It may be the case that when drawing children divulge less information about themselves to a familiar or unfamiliar adult audience compared to familiar or unfamiliar peers, as they will be less inclined to divulge information in the same quantity or quality to an authority figure. However, the opposite could be true in that a compliance effect (Lewis, Kellet, Robinson, Fraser & Ding, 2004) may operate in that children will divulge more information to an authority whether familiar to the child or not. Hence the proposed research explicitly asked children to draw themselves in contrasting mood and to vary both the types of audience (adult vs. child) and the emotional character of the audience (happy vs. sad).

Based on a systematic paradigm which has uncovered children's differential use of drawing strategies for neutrally, positively and negatively characterised figures (e.g., Burkitt, Barrett & Davis, 2003; Burkitt, Watling & Murray, 2011), this study aimed to extend previous findings by asking children to draw themselves, rather than another person, in contrasting emotional moods. Previous research has tended to assume that children's human figure drawings reflect self-depictions (e.g., Hammer, 1997, Leibowitz, 1999; Silver, 1996; Stefanatou & Bowler, 1999) and has used non-specific human figures as the drawing topic (e.g., Burkitt et al., 2003a, 2003b; Burkitt, Watling & Murray, 2011; Thomas, Chaigne & Fox, 1989). Asking children to draw unspecific human figures can lack relevance to the child and can lead to difficulties when interpreting whom the children were focussing on during drawing production. Asking children to draw themselves would arguably increase the relevance and ecological validity of the research and provide clear findings as to whether children present themselves differently in their drawings for familiar and unfamiliar adults or children. The present study therefore extended a paradigm (e.g., Burkitt et al., 2004) wherein children are asked to draw figures in contrasting positive and negative moods in order to assess any systematic influences of the emotional valence of a topic on the use of a range of drawn strategies

Children aged between 6 and 10 years were recruited as this period encompasses when children have been found to alter their self-descriptions in light of different audience characteristics (Banerjee, 2002; Banerjee & Lintern, 2000; Fu & Lee, 2007; Morris, Silk, Steinberg, Myers & Robinson, 2007), when children can already alter their drawings of

positional information in a communicative context (Sitton & Light, 1992), when drawing other figures for a peer or adult audience (Burkitt et al., 2011), and when children have been found to be able to understand the emotion terms of sad and happy (e.g., Harris, 2000). The age range used spanned the ages where children's development of an understanding of self-presentation in verbal communication has been identified. Findings have demonstrated that in early childhood (between four and seven years), children will use self-presentation and can appreciate that it is better to offer certain self-descriptors in light of audience types. Yet unless given the specific motivation to present oneself in a particular way (e.g., to not appear like a cry-baby) they cannot explain the self-presentational motive of the tactic use until around 8 years old (i.e., they do not mention the social evaluative function of self-presentation; Banerjee, 2002; Banerjee & Yuill, 1999a). Drawing may represent a more familiar medium for communication for younger children than verbal exchange and it may encourage younger children to act on their understanding of self-presentation.

The proposed research builds on findings that show which properties (size, colour, detail use) are important when evaluating emotional messages in children's drawings (e.g., Cleeve & Bradbury, 1992; Burkitt et al., 2003b; Fox & Thomas, 1990; Thomas et al., 1989) and assessed the influences that different kinds of audiences may have on children's self drawings. Most importantly, it was predicted that the familiar and unfamiliar adult audiences would be treated differently from the familiar and unfamiliar child audiences. The specific aims were to ascertain audience effects on size, detail use and colour use. On the basis of previous research (Burkitt et al., 2003a, 2003b, 2004; Burkitt, Watling & Murray, 2011) it was specifically predicted that: 1) children will rate the neutral and positive figures more favourably than the negatively characterised figures; 2) children will use their more liked colours for more positively rated self drawings for familiar audiences, and 3) that they will use their least liked colours for more negatively rated self drawings for the unfamiliar audiences.

## Method

### *Participants*

Children were selected from eight classes within three mainstream schools in areas that are predominantly middle class across East Sussex, UK. Children were predominately White British (across the three schools there was approximately 85% White British, 5% Black British, and 10% Asian). The children who participated had no learning difficulties and were judged by their classroom teacher as having average drawing and learning ability in relation to their year group. They were tested individually in a quiet area of the school. As shown in Table 1, 200 children participated in the research. 50 boys and 50 girls, aged 6-8 yrs, and 50 boys and 50 girls aged between 8-10 yrs were randomly allocated into five conditions (a reference group and four experimental groups receiving different information about audience). An equal number of boys and girls were in each condition. On the basis of power calculations designed to detect a medium effect (Faul & Erdfeler, 1992) using this design, each cell consisted of 20 children (five groups of 40 children,  $P=0.85$  for a medium effect  $\alpha=0.15$ ).

**\*\*INSERT TABLE ONE ABOUT HERE\*\***

### *Material*

In the drawing session children were presented with a range of ten coloured crayons, selected on the basis of past research (e.g., Burkitt et al., 2003a). A separate piece of plain A4 paper in portrait orientation was provided for each drawing. Ten colour cards in the same range as the crayons provided for the drawing tasks were used for the colour preference task. A five point sad-smiley face Likert scale assessing affect towards the drawn figures was used with the corresponding ratings (1=very sad, 2=sad, 3= neither happy nor sad, 4=happy, 5=very happy). A second 5 point Likert scale ranging from “1= not at all” to “5=very much” was used to gather children’s colour preferences.

### *Procedure*

All children were seen individually in a quiet area of their own school and completed the colour rating session and drawing session in counterbalanced order. An established experimental paradigm was employed (Burkitt & Barnett, 2004; Burkitt et al., 2003a, 2003b; Thomas et al., 1989) which manipulated the emotional character of the figures that children draw by providing task instructions describing the figures as neutral, happy and sad.

*Drawing session:* All children were asked to draw three self-drawings that differed in emotional character. All children completed a neutral uncharacterised figure first, followed by two figures in counterbalanced order; one characterised as happy and one characterised as sad.

In line with previous research (Burkitt et al., 2003b, Burkitt, Barrett & Davis, 2009; Burkitt, Tala & Low, 2007) to assess colour use in relation to colour preferences and to control for differences that occur with colour choice when children use multiple colours, all children were restricted to the choice of one colour (selected from a choice of ten) for each drawing. Children in the reference condition were instructed to draw the three differently characterised self-figures without any reference to a communicative purpose or to the intended audience for their drawings. For the first drawing they were asked to simply draw themselves and asked to use one colour to colour in the drawings. For the happy drawing they were given instructions characterising themselves as happy and for the negatively characterised figures they were given instructions characterising themselves as sad (Burkitt et al., 2003a, 2003b).

The four experimental groups were instructed that they should draw so that the drawings conveyed the emotional character to the specified audience. There were five conditions, which differed by the information provided to the child about the audience, this included one reference group (no audience information provided) and four experimental groups. The experimental groups varied depending on audience familiarity (familiar versus unfamiliar) and audience age (adult versus child). All children drew the baseline figure first followed by a happy and sad figure presented in counterbalanced order. The full instructions for each drawing type for each condition were as follows:

*Baseline task: "I'd like you to think of a time when you were not really happy or not really sad. I'd like you to draw yourself using just one of these colours to colour in remembering that you were not really happy or not really sad. Try to colour in as well as you can".*

*Reference group:*

*Happy drawing task: "Now, think of a time when you were cheerful and very happy. I'd like you draw yourself using just one of these colours to colour in remembering how happy you were. Try to colour in as well as you can".*

*Sad drawing task: "Now, think of a time when you were not cheerful and very sad. I'd like you draw yourself using just one of these colours to colour in remembering how sad you were. Try to colour in as well as you can".*

*Familiar Child group:*

*Happy drawing task: "Now, think of a time when you were cheerful and very happy. I'd like you draw yourself using just one of these colours to colour in remembering how happy you were. I would like you to imagine that a child who you know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can".*

*Sad drawing task: "Now, think of a time when you were not cheerful and very sad. I'd like you draw yourself using just one of these colours to colour in remembering how sad you were. I would like you to imagine that a child who you know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can".*

*Unfamiliar Child group:*

*Happy drawing task: "Now, think of a time when you were cheerful and very happy. I'd like you to draw yourself using just one of these colours to colour in remembering how happy you were. I would like you to imagine that a child who you do not know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can".*

*Sad drawing task: "Now, think of a time when you were not cheerful and very sad. I'd like you draw yourself using just one of these colours to colour in remembering how sad you were. I would like you to imagine that a child who you do not know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can".*

*Familiar Adult group:*

*Happy drawing task: "Now, think of a time when you were cheerful and very happy. I'd like you to draw yourself using just one of these colours to colour in remembering how happy you were. I would like you to imagine that an adult who you know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can".*

*Sad drawing task: "Now, think of a time when you were not cheerful and very sad. I'd like you draw yourself using just one of these colours to colour in remembering how sad you*

were. I would like you to imagine that an adult who you know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can”.

*Unfamiliar Adult group:*

*Happy drawing task: “Now, think of a time when you were cheerful and very happy. I’d like you to draw yourself using just one of these colours to colour in remembering how happy you were. I would like you to imagine that an adult who you do not know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can”.*

*Sad drawing task: “Now, think of a time when you were not cheerful and very sad. I’d like you draw yourself using just one of these colours to colour in remembering how sad you were. I would like you to imagine that an adult who you do not know will see your picture and will need to tell how you are feeling. Try to colour in as well as you can”.*

All children completed an affect-rating task measuring their affect towards the drawn figure immediately after completion of each drawing using the 5-point Likert scale.

### *Coding*

A content analysis of all the drawings was conducted to assess the categories of strategies children used. Two independent adult raters separately analysed the drawings for content properties without knowledge of the emotional character of the figures or the instructions concerning audience ages. The entire figure in each drawing was coded using an exhaustive content analysis designed to generate mutually exclusive categories of drawn responses. As in comparable research (e.g., Burkitt, Watling & Murray, 2011), the judges were given the coding criteria for assessing a unit of content (Krippendorff, 2004) as the judgement of a complete feature or event, for example a complete smile or an overall action being depicted such as waving. Following initial calculations of inter-rater reliability (92 %, Cohen’s Kappa = 0.85) for the categories of response, agreement of 100% was reached through discussion and partial reclassification of the contested drawings. The same two judges then independently classified all of the drawings and reached 100% agreement on the coding of instances to each category.

## Results

### *Affect towards drawing types*

To check the effectiveness of the affective manipulation towards the drawn figures a Friedman’s ANOVA was used to explore the main effect of drawing type (neutral, happy, sad) and found that there was a significant difference in the rating for the baseline, happy, and sad drawings,  $X^2 = 311.72, p < .001$ . Wilcoxon tests were used to follow up this finding, with Bonferroni corrections for multiple comparisons. Findings showed that children’s

judgements for their happy drawings ( $M = 4.40$ ) were significantly more positive than for their baseline drawings ( $M = 2.91$ ),  $z = 10.96$ ,  $N - \text{Ties} = 174$ ,  $p < .001$ , that children's judgements for their sad drawings ( $M = 1.35$ ) were significantly more negative than for their baseline drawings,  $z = 11.32$ ,  $N - \text{Ties} = 176$ ,  $p < .001$ , and that children's judgements for their happy drawings was significantly more positive than for their sad drawings,  $z = 12.21$ ,  $N - \text{Ties} = 194$ ,  $p < .001$ .

### *Size and audience age*

The height in millimetres for each drawing of the figure was measured as the vertical distance from the highest to the lowest extremity of the figure. Where figures may have been at an angle to the baseline of the paper a horizontal line was drawn beneath the bottom of the figure and the height was measured as the vertical line from this axis to the top of the figure. In order to determine whether there was any impact of condition, drawing type, participant age group or gender a 5 (condition) x 3 (drawing type) x (2) participant age group x 2 (gender) mixed measures ANOVA was conducted to assess differences in drawing height as the dependent variable, with drawing type as a repeated factor and condition, participant age group and gender entered as independent factors. A main effect of drawing type was found,  $F(2, 279) = 47.88$ ,  $p < 0.001$ ,  $\eta_p^2 = 0.21$ ,  $P = 1$ . *Post hoc* paired t-tests revealed that the happy drawings ( $X = 8.52$ ,  $SD = 2.82$ ) were significantly taller than the neutral ( $X = 7.36$ ,  $SD = 2.43$ ,  $t(199) = 4.84$ ,  $p < .001$ ) and sad ( $X = 6.15$ ,  $SD = 2.10$ ,  $t(199) = 9.28$ ,  $p < .001$ ) drawings and that the neutral drawings were significantly taller than the sad drawings.

A main effect for participant age group was found,  $F(1, 160.17) = 28.6$ ,  $p < .001$ ,  $\eta_p^2 = 0.14$ ,  $P = 1$ , and *post hoc* inspection of the means showed that the youngest age group produced taller drawings overall ( $X = 7.86$ ,  $SD = 1.42$ ) than the older age group ( $X = 6.82$ ,  $SD = 1.39$ ). A main effect for gender was also found,  $F(1, 41.61) = 7.45$ ,  $p < .001$ ,  $\eta_p^2 = 0.04$ ,  $P = 0.76$ , with *post hoc* inspection of the means showing that the boys ( $X = 7.60$ ,  $SD = 1.49$ ) drew taller figures overall than the girls ( $X = 7.08$ ,  $SD = 1.46$ ). No further main or interaction effects were found for drawing height.

### *Other drawing strategies and audience age*

Pearson Chi square tests of independence were conducted to evaluate if there was an association between the presence of a feature in a drawing (present or absent) and a particular type of audience (Reference Group =RG, Unfamiliar Child = UC, Familiar Child =FC or Familiar = FA and Unfamiliar Adult = UA audience group). Table 2 presents the frequency of children who included each feature within each drawing type for each audience type. Given that the frequencies of drawing strategies was very low (or non-existent) in the baseline drawings and in the reference group drawing where not audience information was provided, no analyses was conducted on the baseline drawing type (frequency of feature strategy use ranged 0 - 11 out of 200 drawings) and the drawings in the reference group condition (frequency of feature strategy use ranged 0 – 7 in the happy drawings and 0 – 2 in the sad drawings). Additionally, it is clear from Table 2 that the features were specific to drawing type, whereby in the happy drawings the key features identified were smiles, waving, gift giving, good weather, animals, and other person (the frequency of these features in sad drawings ranged from 0 - 5 out of 200 drawings), and in the sad drawings the

key features identified were frowns, tears, shouting, thumping, bad weather, and thick line use (the frequency of these features in happy drawings ranged from 0 - 7 out of 200 drawings). Analyses of key features were therefore conducted within the relevant drawing type only.

To address our research questions, separate 2 x 2 Pearson Chi square tests of independence were conducted to explore the presence or absence of each feature. Within the analyses we explored the main effects of audience familiarity (associations between familiar and unfamiliar audiences) and audience age (associations between child and adult audiences). Additionally we explored the interaction between audience familiarity and audience age by exploring the associations between child and adult audiences for familiar and unfamiliar audience separately. We followed up these analyses separately by each age group to evaluate if the associations differed for the younger and older children. To account for the multiple comparisons we used an adjusted significance level of 1.67%.

**\*\*INSERT TABLE TWO ABOUT HERE\*\***

#### *Analyses of features in Happy drawings*

*Smiling:* There was a main effect of audience familiarity, whereby children were more likely to draw a smile when the audience they were drawing for was familiar rather than unfamiliar,  $\chi^2 (1, N= 160) = 58.51, p < .001$ . In exploring the two participant age groups separately, the significant association with familiarity was present for both the 6-8,  $\chi^2 (1, N= 80) = 13.33, p < .001$ , and the 8-10 year olds,  $\chi^2 (1, N= 80) = 51.33, p < .001$ . Both groups of children drew a smile more often when they anticipated the audience would be familiar than unfamiliar (6-8 years olds: 60.0% versus 20.0%; 8-10 year olds 87.5% versus 7.5%, respectively). There were no significant associations of audience age,  $\chi^2 (1, N= 160) = .102, p = 0.750$ , which was the case also for both the 6-8 and the 8-10 year olds ( $ps > .05$ ), nor were there associations of audience age for either familiarity condition ( $ps > .05$ ).

*Waving:* There was a main effect of audience familiarity, whereby children were more likely to draw the self waving when the audience they were drawing for was familiar rather than unfamiliar,  $\chi^2 (1, N= 160) = 9.561, p = 0.002$ . This association was only significant for the 8-10 year olds,  $\chi^2 (1, N= 80) = 8.66, p = 0.003$ , and not for the 6-8 year olds,  $\chi^2 (1, N= 80) = 2.40, p = .121$ . The older children were more likely to include waving in the drawing for the familiar audience than the unfamiliar audience (present in 30.0% versus 5.0% of the drawings, respectively). Additionally, there was a main effect of audience age that was approaching significance, with children being more likely to draw the self as waving when the audience age was a child than an adult,  $\chi^2 (1, N= 160) = 3.74, p = .053$ . However, similar to the finding for familiarity, this association was only significant for the 8-10 year olds,  $\chi^2 (1, N= 80) = 5.54, p = .019$ , and not for the 6-8 year olds,  $\chi^2 (1, N= 80) = 0.27, p = .606$ . The older children presented the self waving in their drawings 27.5% of the time when the audience was a child, and only 7.5% of the time when the audience was an adult. More specifically this association with audience age for the older children was only when the audience was familiar,  $\chi^2 (1, N= 40) = 4.29, p = .038$ , where with a familiar child the wave was included 45.0% of the time in comparison to with a familiar adult the wave was included 15.0% of the time.

*Additional features in Happy drawings.* There were no significant associations for gift-giving, good weather, animals, and other person with audience familiarity or audience age.

#### *Analyses of features in Sad drawings*

*Frowning:* There was a main effect of audience familiarity, whereby children were more likely to draw a frown when the audience they were drawing for was unfamiliar rather than familiar,  $\chi^2 (1, N= 160) = 17.03, p < .001$ . In exploring the two participant age groups separately, the significant association with familiarity was present only for the 8-10 year olds,  $\chi^2 (1, N= 80) = 28.61, p < .001$ . The frown was present in 65.0% of the drawings when the audience was unfamiliar and 7.5% of the drawings when the audience was familiar. There was no main association with audience age,  $\chi^2 (1, N= 160) = 0.68, p = .409$ . There were no significant associations of audience age for either familiarity condition ( $ps > .05$ ), which was true also when looking separately at the two age groups. There were also no associations of audience age for either familiarity condition ( $ps > .05$ ).

*Tears:* There was a main effect of audience familiarity, whereby children were more likely to draw tears when the audience they were drawing for was unfamiliar rather than familiar,  $\chi^2 (1, N= 160) = 15.63, p < .001$ . In exploring the two participant age groups separately, the significant association with familiarity was present only for the 8-10 year olds,  $\chi^2 (1, N= 80) = 18.66, p < .001$ . The tears were present in 47.5% of the drawings when the audience was unfamiliar and 5.0% of the drawings when the audience was familiar. There was no main association with audience age,  $\chi^2 (1, N= 160) = 0.52, p = .472$ . There were no significant associations of audience age for either familiarity condition ( $ps > .05$ ), which was true also when looking separately at the two age groups. There were also no associations of audience age for either familiarity condition ( $ps > .05$ ). Figure 1 illustrates an 8 year old boy's use of tears in their sad drawing for an unfamiliar adult audience.

**\*\*INSERT FIGURE ONE ABOUT HERE\*\***

*Shouting:* There was a main effect of audience familiarity, whereby children were more likely to depict the self as shouting when the audience they were drawing for was unfamiliar rather than familiar,  $\chi^2 (1, N= 160) = 5.98, p = .014$ . In exploring the two participant age groups separately, the significant association with familiarity was present only for the 8-10 year olds,  $\chi^2 (1, N= 80) = 14.53, p < .001$ . The depiction of shouting was present in 45.0% of the drawings when the audience was unfamiliar and 7.5% of the drawings when the audience was familiar. There was no main association with audience age,  $\chi^2 (1, N= 160) = 0.12, p = .727$ . There were no significant associations of audience age for either familiarity condition ( $ps > .05$ ) across all children. However, when looking separately at the two age groups when the audience was unfamiliar the 6-8 year old children were more likely to depict the self shouting at a child audience than adult audience (present in 45% versus 15% of drawings),  $\chi^2 (1, N= 40) = 4.29, p = .038$ , while there were no significant associations for the older children. Figure 2 illustrates an 8 year old boy's use of shouting in their sad drawing for an unfamiliar child audience.

**\*\*INSERT FIGURE TWO ABOUT HERE \*\***

*Thumping:* There was a main effect of audience familiarity, whereby children were more likely to depict the self as thumping their foot when the audience they were drawing for was unfamiliar than familiar,  $\chi^2 (1, N= 160) = 4.44, p = .035$ . This effect was found only with all participants (not found separately for the two age groups). Therefore, generally children were more likely to present the self in their drawings as thumping when the audience was unfamiliar than familiar (18.8% versus 7.5% of the time). There was no main association with audience age,  $\chi^2 (1, N= 160) = 0.49, p = .482$ . There were no significant associations of audience age for either familiarity condition ( $ps > .05$ ); although there was a tendency for children to depict a thumping foot when the audience was an unfamiliar child than a unfamiliar adult (27.5% versus 10.0%),  $\chi^2 (1, N= 80) = 4.02, p = .045$ ; this finding did not differ depending on the age group of the children.

*Bad weather:* There was a main effect of audience familiarity, whereby children were more likely to depict bad weather in their drawings when the audience they were drawing for was unfamiliar rather than familiar,  $\chi^2 (1, N= 160) = 4.44, p = .035$ . This effect was found only with all participants (not found separately for the two age groups). Therefore, generally children were more likely to present the self in their drawings in bad weather when the audience was unfamiliar than familiar (18.8% versus 7.5% of the time). There was no main association with audience age,  $\chi^2 (1, N= 160) = 0.49, p = .482$ . There were no significant associations of audience age for either familiarity condition ( $ps > .05$ ); although there was a tendency for children to depict bad weather in their drawings when the audience was an unfamiliar children than a unfamiliar adult (27.5% versus 10.0%),  $\chi^2 (1, N= 80) = 4.02, p = .045$ ; this finding did not differ depending on the age group of the children.

*Line use:* There was a main effect of audience familiarity, whereby children were more likely to draw thicker lines in their drawings of self when the audience they were drawing for was unfamiliar rather than familiar,  $\chi^2 (1, N= 160) = 5.33, p < .021$ . In exploring the two participant age groups separately, this association was present only for the 8-10 year olds,  $\chi^2 (1, N= 80) = 3.91, p = .048$ . Thicker line use was present in 15.0% of the drawings when the audience was unfamiliar and 2.5% of the drawings when the audience was familiar. There was no main association with audience age,  $\chi^2 (1, N= 160) = 0.59, p = .442$ . Thicker line use was more likely to be used in drawings when the audience was an unfamiliar child than an unfamiliar adult (25.0% versus 7.5%),  $\chi^2 (1, N= 80) = 4.50, p = .034$ ; this finding did not differ depending on the age group of the children.

#### *Colour preferences and drawing type*

In order to determine whether there was any impact of condition, drawing type, age group or gender on the use of more or less preferred colours for the neutral, happy and sad drawn figures a repeated measures mixed ANOVA was conducted (5 (condition) x 3 (drawing type) x 2 (age group) x 2 (gender)) with age group, condition and gender entered as between subject factors and drawing type entered as the within subject measure.

A main effect for drawing type was found ( $F (2, 310) = 134.14, p < .001, \eta_p^2 = 0.43, P = 1$ ). *Post hoc* paired t-tests indicated that the colours used for the happy ( $X= 3.94, SD= 1.01$ ) figures were rated significantly more favourably than those chosen for both the baseline ( $X = 3.94, SD = 2.36, t (199) = 11.23, p = .003$ ) and the sad ( $X = 1.47, SD = 0.76, t (199) = 9.84, p = .004$ ) figures, whilst the colours chosen for the baseline figures were rated more

favourably overall than those selected for the sad figures. No further main or interaction effects for colour preference and use were found.

### *Specific colour use*

Correspondence analysis (Hammond, 1988, 1993) was used to determine which specific colours were more frequently chosen in association with the emotional characters of the figures and the intended audience age. This technique uses well-established geometric principles to provide a pictorial representation of the relationship between categories of response and groups of individuals. It permits a multi-dimensional analysis of categorical data by providing a plot in which the geometric distance between the groups and the types of response gives a direct measure of the relative degree of association between the groups and the response types. This graphical representation reveals those colour choices which are most closely associated with each group (condition or drawing type) and which therefore best discriminate children's colour choices in each subgroup. Table 3 shows the frequencies of colour use across drawing type and audience age.

**\*\*INSERT TABLE THREE ABOUT HERE\*\***

Colour frequencies across each drawing type were analysed. Two significant dimensions were found,  $\chi^2(3) = 56.87, p < .001$  and  $\chi^2(2) = 23.63, p < .001$ . Figure 3 shows that green and pink were more likely to be associated with the baseline drawings, yellow and red for the happy drawings and black, blue and brown for the sad drawings. No significant dimensions were found for specific colour and audience ages.

**\*\*INSERT FIGURE THREE ABOUT HERE\*\***

## Discussion

The present study is the first to systematically explore the role of audience familiarity in features that children include in their drawings of themselves. Furthermore, it enhances our understanding of the importance of audience information with relation to if the audience is another child and adult. This research supports previous research (e.g., Burkitt et al., 2011) showing that the age of the audience makes a difference in what features children draw. In line with aspects of children's verbal self-presentational behaviour (Banerjee, 2002; Banerjee & Yuill, 1999a; Fu & Lee, 2007; Watling & Banerjee, 2007a, 2007b; Zeman & Garber, 1996), children in the present study systematically altered specific drawn properties in light of audience characteristics; this was particularly true of the older children (8-10 year olds). More generally, consistent with earlier research (Burkitt et al., 2011), the identified features primarily were present only when audience information was provided, and the modification of strategies depending on audience information occurred more frequently in children's depiction of negative emotion.

### *Drawing size*

The pattern of height changes in relation to the affective characterisation of the drawn figures supported previous findings in that happy and neutral drawings were drawn taller than sad drawings (Burkitt et al., 2003b; Cleeve & Bradbury, 1992; Fox & Thomas, 1990; Thomas et al., 1989), with younger children producing taller drawings than the older group (Burkitt et al., 2003a; Cox, 2005; Davis, 1985a), and with boys drawings taller figures overall than girls (Burkitt et al., 2003a). However, no influences of audience age were present. This could be seen to support an appetitive-defensive (Thomas, Chaigne & Fox, 1989) explanation of size change in affectively characterised human figure drawings which entails that children minimise the threat of negative emotions by drawing smaller negatively characterised figures and scale up drawings of positively characterised figures to increase their appeal rather than for the conveyance of meaning through social scaling (Aronsson & Andersson, 1996) to an audience.

#### *Audience and colour use*

Whilst children's tendency to use more or less preferred colours for more or less positively characterised figures was evident in the present study as in previous research (e.g., Alschuler & Hattwick, 1947; Anastasi & Foley, 1943; Boyatzis & Varghese, 1994; Burkitt, 2008; Burkitt et al., 2003a, 2003b, 2004, Brechet, Baldy & Picard, 2009; Hammer, 1953; O'Hare & Cook, 1983; Melkman, Koriat & Pardo, 1976; Burkitt, 2008; Misailidi & Bonoti, 2008; Pranckeviciene, Zardecktaite-Matulaitiene & Soikinaite, 2009; Zentner, 2001), no effects of audience familiarity or type were found. Also in keeping with previous findings (Nelson, Allan and Nelson, 1971; Misailidi & Bonoti, 2008; Pranckeviciene, Zardecktaite-Matulaitiene & Soikinaite, 2009) specific colours were more likely to be used in response to the neutral (green and pink), happy (yellow and red) and sad (blue, black and brown) figures, yet again, no audience related associations were found. It could be suggested that whilst intrapersonal colour affect associations vary by context, for example if red is displayed in nature as a warning (Burkitt, 2008; Hammer, 1997) or through clothing colour choice to promote associations of confidence (Greenlees, Leyland, Thelwell, & Filby, 2008), that as a resource for intentional intrapersonal communication it is understood by children as being highly personal and not necessarily a property that would be understood by others. Indeed the development of colour-affect associations has been argued to be idiosyncratic in terms of children's experience of that colour (Boyatzis & Verghese, 1994) and may therefore not be a resource that children will use to generally communicate a particular feeling associated with that colour. The developmental literature describes colour selection as a predominately expressive, and an often idiosyncratic (Burkitt, 2008; Dalley, 1984; Nelson, Allan and Nelson, 1971; Parsons, 1987), device for children in this age group (see Golomb, 1992; Malchiodi, 1998) and thus it could be argued that children's concern for the selection of their preferred or non-preferred colours and non-representational selection of particular colours overrode concerns of communication of a particular emotion to a particular audience using colour.

#### *Drawn features as self-presentational strategies*

A range of drawing strategies were identified overall which was broadly similar to those revealed in comparable studies (Burkitt & Barrett, 2010; Burkitt et al., 2011; Jolley, 2010). Most interestingly, the majority of strategies identified varied dependent on whether the audience was familiar or unfamiliar. More specifically, for the happy drawings of the self

there were more positive features (smiling and waving) drawn when children were told that the audience would be someone familiar. In contrast, for the sad drawings of the self there were more negative features (frowning, tears, shouting, thumping, bad weather, and thicker line use) when children were told the audience would be someone unfamiliar. This is consistent with self-presentational literature whereby we wish to create a more positive impression (i.e., that we are nice) with friends than with strangers (Tice et al., 1995). Additionally, there were a larger number of features used within the negative drawings of the self than in the positive drawings of the self. Researchers have found that adults are more likely to be more motivated to use verbal self-presentation tactics with unfamiliar audiences than with familiar audiences (Leary, Nezlek, Downs, Radford-Davenport, Martin, & McMullen, 1994).

The findings indicated that not all children tended to vary features according to audience information. More specifically, it was primarily the children in middle childhood (8-10 year olds) who systematically included features depending on audience information. This is a key finding, and clearly extends work on verbal self-presentation, which shows that children around the age of 8 years become increasingly aware of how other's evaluate the self, become motivated to present themselves in particular ways, and have an understanding of how to create an impression. The fact that the 8-10 year olds in this study differentiated between familiar and unfamiliar audiences in their drawings in a consistent manner to how children use verbal self-presentational tactics (e.g., Tice et al., 1995; Leary et al., 1994) supports the idea that these children are using these tactics as a method of self-presentation.

Smiling figures in children's happy drawings were presented more often in drawings for familiar than unfamiliar audiences. Smiles are a very frequently drawn and understood feature (Cox, 2005; Jolley, 2010) and smiles are expressions of happiness that children perceive to be widely understood (Harris, 1989; 1994, 2000). Similarly, waving figures were more likely to be drawn for familiar than unfamiliar audiences, but more specifically this differentiation was made by the 8-10 year olds and not the 6-8 year olds. Particularly when the older children were advised that the audience would be a familiar child they were more likely to draw the self as waving, as if in greeting their friend. Using smiles and waves in drawings of positive emotions to familiar others allow the child to appear more friendly and welcoming, which allows the audience to think of the child positively. As with the domain of children's verbal self-presentational strategies (Banerjee, 2002; Fu & Lee, 2007; Zeman & Garber, 1996), this pattern suggests that audience characteristics, such as type and familiarity, influence the likelihood of the use of these strategies to represent positive affect in the drawing domain.

As highlighted above, in contrast to the displays of positive emotions, the additional features that were identified for negative emotions were present more often when the audience was identified as being someone not familiar to the child. Amongst those strategies that varied as a function of audience age were the depiction of frowning, tears, shouting, thumping foot, bad weather, and thick line use. All of these negative drawing features were more likely to be drawn for unfamiliar audiences than familiar audiences, with many of these features (exceptions are thumping foot and bad weather) used more often by 8-10 year olds with unfamiliar audiences. This finding is quite interesting, as children are socialised by their parents and other adults quite early to hide negative feelings

so as not to hurt the feelings of others (e.g., when get a present they do not like they should put on a smile; Zeman & Garber, 1996). Children may find it easier to express sadness this way to an unfamiliar adult where the consequences are arguably less than if expressed to a known adult. Children may be more likely to believe that negative emotional expressions should be inhibited with familiar rather than unfamiliar adults. Furthermore, it could be argued that when a child intends to draw for an unfamiliar audience, be it for a child or an adult, a strong pictorial convention of signalling sadness exists. Indeed frowning and tears have been argued to be one of the more widely recognised signs of negative emotion (e.g., Compton, 2005; Diener & Rober-Biswas Diener, 2008). Social developmental research shows that children present different verbal explanations of their own positive and negative emotions to adults compared with children (and this could extend to familiar and unfamiliar audiences) and they appreciate that there are interpersonal consequences of presenting negative emotions are different to those when presenting positive emotion (e.g Banerjee, 2002; Banerjee & Lintern, 2000; Watling & Banerjee, 2007a, 2007b ; Zeman & Garber, 1996). The present study suggests that this awareness applies to drawing behaviour.

The greater influence of audience age on drawn representations of sadness was strengthened with the finding that shouting and thumping of feet were more associated with drawings for unfamiliar rather than familiar child audiences (Zeman & Garber, 1996). These additional features could express greater negativity of emotion that would not be appropriate to display with adult audiences, nor for familiar audiences. It could be argued that the interpersonal consequences of shouting and thumping feet at an unknown child are perceived as less negative than the consequences of depicting these behaviours in a drawing for a familiar child. It could also be suggested that more subtle representations of sadness would be used for a familiar audience who children may think have a better understanding of children's more individualised expressions of sadness.

The drawing strategy of including bad weather and pressurized line use was more likely to be used by children drawing sad figures or a familiar rather than an unfamiliar child audience. This may well be a result of educational factors given that the children were sampled from similar school systems or the finding could indicate that more metaphorical creative strategies (Burkitt & Barrett, 2010; Hammer, 1997; Malchiodi, 1998) are thought by children to be better understood by familiar peers.

### *Summary*

These findings support the cue dependency (Freeman, 1977) and framework (Freeman, 1995) theories of drawing and art by providing further evidence to suggest that cues in the drawing situation directly influence the shape certain properties of the resultant drawing and that awareness of an audience and particular characteristics of different audiences influences children's drawings.

The present study demonstrated influences of audience age and familiarity that have not as yet been taken into account in previous research or practitioner use of drawing tasks for interview, intervention or diagnostic purposes (Hunsley, Lee, & Wood, 2003). It does seem to matter who the children think they are drawing themselves for and what type of affective information they are attempting to communicate. The present study has provided further evidence to suggest that adults and children, more specifically those that

are familiar and unfamiliar, are regarded as different kinds of social agents by children and that the knowledge of this mediates children's drawn communication of positive and negative affect relating to themselves. Importantly, children were asked to draw figures representing themselves which is relevant to practitioner interview and assessment procedures that utilise a range of human figure drawing tests (for the example the Draw a Family and Draw a Person tests) that assume or explicitly instruct children to draw themselves (Cox, 2005; Jolley, 2010). Drawings are complexly determined and sensitive to a myriad of cues in the drawing situation (Freeman, 1988) from cues evident in the emerging drawing (Freeman, 1995) to those of task demands (Barrett, Beaumont & Jennett, 1995). The controlled paradigm used in the present study has permitted investigation of the interpersonal cues that can influence the form of children's drawings and highlights the importance of the framework theory of art (Freeman, 1995) where pictorial appreciation is argued to involve intentional relationships between the artist, the drawing and the audience. The present study suggests that further work is needed to explore how children represent other kinds of emotional information to a range of different kinds of real life audiences, for example a new teacher, a new doctor or a known police person, and assess whether familiarity across contexts is regarded as a positive or negative influence to encourage drawn communication.

*Acknowledgements:* Many thanks to the children who participated in, and the teachers who assisted with, this research.

## References

- Aloise-Young, P. (1993). The development of self-presentation: Self-promotion in 6 to 10 year old children. *Social Cognition, 11*, 201-222.
- Alschuler, R., & Hattwick, L. A. (1947). *Painting and personality. Volumes I and II*. Chicago: The University of Chicago Press.
- Anastasi, A. & Foley, J. P. (1941). A survey of the literature on artistic behaviour in the abnormal: IV experimental investigations. *Journal of General Psychology, 187-237*.
- Aronsson, K. & Andersson, S. (1996). Social scaling in children's drawings of classroom life: A cultural comparative analysis of children's drawings in Africa and Sweden. *British Journal of Developmental Psychology, 14*, 301-314,
- Banerjee, R. (2002). Audience effects on self-presentation in childhood. *Social Development, 11*, 487-506.
- Banerjee, R. & Lintern, V. (2000). Boys will be boys: The effect of social evaluation concerns on gender typing. *Social Development, 9*, 397-408.
- Banerjee, R. & Yuill, N. (1999a). Children's explanations for self-presentational behaviour. *European Journal of Social Psychology, 29*, 105-111.
- Banerjee, R. & Yuill, N. (1999b). Children's understanding of self-presentational display rules: Associations with mental-state understanding. *British Journal of Developmental Psychology, 17*, 111-124.
- Barrett, M. D., Beaumont, A. & Jennett, M. (1985). Some children do sometimes do what they have been told to do: Task demands and verbal instructions in children's drawings. In N. H. Freeman & M. V. Cox (Eds.), *Visual order: The nature and development of pictorial representation*, pp. 176-187. Cambridge: Cambridge University Press.
- Brechet, C., Baldy, R., & Picard, D. (2009). How does Sam feel? : Children's labelling and drawing of basic emotions. *British Journal of Developmental Psychology, 27*, 587-606.
- Boyatzis, C. J. & and Varghese, R. (1994). Children's emotional associations with colors. *Journal of Genetic Psychology, 155*, 77.
- Burkitt, E. (2008). Children's choice of color to depict metaphorical and affective information, in Millbraith C. & Trautner, H. M. (Eds.) *Children's understanding and production of pictures, drawings and art: Theoretical and empirical approaches*. pp. 107-120, London: Hogrefe & Huber Publisher.
- Burkitt. E. & Barnett, N. (2006). The impact of brief and elaborate mood induction on drawing size: a question of approach? *Educational Psychology, 26 (1)*, 93-108.

- Burkitt, E. & Barrett, M. (2010). Children's graphic flexibility: A response to representational redescription, *Journal of Creative Behavior*, 44, 169-190.
- Burkitt, E., Barrett, M. & Davis, A. (2003a). The effect of affective characterisations on the use of colour within children's drawings. *Journal of Child Psychology and Psychiatry*, 44, 445-455.
- Burkitt, E., Barrett, M. & Davis, A. (2003b). The effect of affective characterisations on the size of children's drawings. *British Journal of Developmental Psychology*, 21, 565-584.
- Burkitt, E., Barrett, M. & Davis, A. (2004). The effect of affective characterisations on the use of size and colour in drawings produced by children in the absence of a model. *Educational Psychology*, 24, 315-343.
- Burkitt, E., Barrett, M. & Davis, A. (2009). Effects of different emotion terms on the size and colour of children's drawings, *International Journal of Art Therapy: Formerly Inscape*, 14, 2, 1745-4840.
- Burkitt, E., Tala, K. & Low, J. (2007). Finnish and English children's color use to depict affectively characterised figures. *International Journal of Behavioural Development*, 31, 59-64.
- Burkitt, E., Barrett, M., & Davis, A. (2004). The effect of affective characterizations on the use of size and colour in drawings produced by children in the absence of a model. *Educational Psychology*, 24, 315-343.
- Burkitt, E., Watling, D. & Murray, L. (2011). Children's Drawings of Significant Figures for a Peer or an Adult Audience. *Infant and Child Development*, 20, 466-473.
- Camparo, L. B., Wagner, J. T., & Saywitz, K. J. (2001). Interviewing children about real and fictitious events: Revisiting the Narrative Elaboration procedure. *Law and Human Behavior (Special Issue)*, 25, 63-80.
- Callaghan, T. C. (1999). Early understanding and production of graphic symbols. *Child Development*, 70, 1314-1324.
- Cleeve, H. & Bradbury, R. J. (1992). Children's productions and judgements of drawings of people of different importance. *Poster presented at the 5th European Conference of Developmental Psychology*, Seville, September.
- Craddick, R. (1961). Size of Santa Claus drawings as a function of time before and after Christmas. *Journal of Psychological Studies*, 12, 121-125.
- Craddick, R. (1963). Size of Hallowe'en witch drawings prior to, on and after Hallowe'en. *Perceptual and Motor Skills*, 16, 235-238.
- Compton W. (2005). *An introduction to positive psychology*. Oxford: Blackwell.
- Cox, M. V. (1992). *Children's drawings*. Harmondsworth: Penguin.

- Cox, M. V. (1993). *Children's drawings of the human figure*. Hove: Lawrence Earlbaum.
- Cox, M. V. (2005). *The pictorial world of the child*. Cambridge: Cambridge University Press.
- Dalley, T. (1984). *Art as therapy*. London. Tavistock Publications.
- Davis, A. M. (1985a). Conflict between canonicity and array-specificity in young children's drawings. *British Journal of Developmental Psychology*, 3, 363-372.
- Davis, A. M. (1985b). The canonical bias: young children's drawings of familiar objects. In N. H. Freeman & M. V. Cox (Eds.), *Visual order: The nature and development of pictorial representation*, pp. 202-213. Cambridge: Cambridge University Press.
- Diener, E. and Diener, R. B. (2008). *Happiness: Unlocking the mysteries of psychological wealth*. Blackwell: Oxford.
- Faul, F. & Erdfelder, E. (1992). GPOWER: A priori, post-hoc, and compromise power analyses for MS-DOS [computer program]. *Bonn, Germany: Bonn University, Department of Psychology*.
- Fox, T. & Thomas, G. V. (1990). Children's drawings of an anxiety-eliciting topic: Effect on size of the drawing. *British Journal of Clinical Psychology*, 29, 71-81.
- Freeman, N. H. (1977). How children try to plan drawings. In G. Butterworth (Ed.). (1977), *The child's representation of the world*, pp. 3-29. New York & London: Plenum Press.
- Freeman, N. H. (1995). The emergence of a framework theory of pictorial reasoning. In C. Lange-Kuttner (Ed.), *Drawing and looking: Theoretical approaches to pictorial representation in children*, pp. 135-146. Hemel Hempstead: Harvester Wheatsheaf.
- Fu, G. & Lee, K. (2007). Social grooming in the kindergarten: The emergence of flattery behaviour. *Developmental Science*, 10 (2), 255-265.
- Goodenough, F. L. (1926). *The measurement of intelligence by drawings*. New York: World Books.
- Greenlees, I.A., Leyland, A., Thelwell, R.C., & Filby, W. (2008). The influence of soccer penalty takers' uniform colour and pre-penalty kick gaze on the impression formed of them by goalkeepers. *Journal of Sports Sciences*, 26, 569-576.
- Hammer, E. F. (1958). *The clinical application of projective drawings*. Springfield, Ills.: C. C. Thomas.
- Hammer, E. F. (1997). *Advances in projective drawing interpretation*. Springfield, Ills.: C. C. Thomas.
- Hammond, S. M. (1988). CORRES 1.0: A programme for the correspondence analysis of contingency tables on IBM compatible micros. *Department of Psychology, University of Surrey, Guildford, Surrey*.

- Hammond, S. M.(1993). The descriptive analyses of shared representations. In G. Breakwell & D. Canter (Eds.), *Empirical approaches to social representation*, pp. 205-220. Oxford: Clarendon press.
- Harris, P. (1989). *Children and emotion: Development of psychological understanding*. Oxford: Blackwell Publishing.
- Harris, P.L. (1994). The child's understanding of emotion: Developmental change and the family environment. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 35, 3–28.
- Harris, P.L. (2000). Understanding emotion. In M. Lewis & J. Haviland-Jones (Eds.), *Handbook of emotions*, pp. 281–292). New York: Guilford Press.
- Huguet P., Régnier I. (2007). Stereotype threat among schoolgirls in quasi-ordinary classroom circumstances. *Journal of Educational Psychology*, 99, 545–560.
- Hunsley, J., Lee, C. M., & Wood, J. M. (2003). Controversial and questionable assessment techniques. In S. O. Lilienfeld, S.J. Lynn & J. M. Lohr (Eds.), *Science and Pseudoscience in Clinical Psychology*, pp. 39-76. New York: Guilford Press.
- Jolley, R. (2010). *Children and pictures: Drawing and understanding*. Wiley Blackwell: Chichester.
- Koppitz, E. M. (1966). Emotional indicators on human figure drawings of shy and aggressive children. *Journal of Clinical Psychology*, 22, 466-469.
- Koppitz, E. M. (1968). *Psychological evaluation of children's human figure drawings*. London: Grune and Stratton.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). London: Sage.
- Leary, M. R., Nezlek, J. B., Downs, D., Radford-Davenport, J., Martin, J., & McMullen, A. (1994). Self-presentation in everyday interactions: Effects of target familiarity and gender composition. *Journal of Personality and Social Psychology*, 67, 664-673.
- Lewis, V., Kellet, M., Robinson, C., Fraser, S., & Ding, S. (2004). *The reality of research with children and young people*. London: Sage / The Open University.
- Leibowitz, M. (1999). *Interpreting projective drawings: A self-psychological approach*. Philadelphia: Bruner Mazel.
- Light, P. H. & McEwan, F. (1987). Drawings as messages: The effect of a communication game upon production of view-specific drawings. *British Journal of Developmental Psychology*, 5, 53-60.
- Light, P. H. & Simmons, B. (1983). The effects of a communication task upon the representation of depth relationships in young children's drawings. *Journal of Experimental Child Psychology*, 35 (1), 81-92.

- Machover, K. (1949). *Personality projection in the drawings of the human figure*. Springfield, IL: C. C. Thomas.
- Malchiodi, C. A. (1998). *Understanding children's drawings*. London: Jessica Kingsley Publishers.
- McNiff, S. (1992). *Art as medicine: Creating a therapy of the imagination*. London: Piakus.
- Melkman, R., Koriat, A. & Pardo, K. (1976). Preference for colour and form in pre-schoolers as related to colour and form differentiation. *Child Development, 47*, 1045-1050.
- Misailidi, P., & Bonoti, F. (2008). Emotion in children's art: Do young children understand the emotions expressed in other children's drawings? *Journal of Early Childhood Research, 6*(2), 189-200.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*, 361-388.
- Nelson, T. M., Allan, D. K. & Nelson, J. (1971). Cultural differences in the use of color in Northwest Canada. *International Journal of Psychology, 6*, 283-292.
- O'Hare, D. & Cook, D. (1983). Children's sensitivity to different modes of colour use in art. *British Journal of Educational Psychology, 53*, 267-277.
- Parker, J. & Gottman, J. (1989). Social and emotional development in a relational context: Friendship interaction from early childhood to adolescence. In T Berndt and G Ladd (Eds), *Peer relationships in child development* (pp. 95-131). New York, NY: Wiley.
- Parsons, M. J. (1987). *How we understand art: A cognitive developmental account of aesthetic experience*. Cambridge: Cambridge University Press.
- Pranckeviciene, A., Zardecktaite-Matulaitiene, K. & Soikinaite, I. (2009): Children's color preferences and color choices for completing drawings of human feelings in primary school, *Psichologija, 39*, 31-44.
- Silver, R. A (1996). *Silver Drawing Test of cognition and emotion*. Sarasota, FL: Ablin Press.
- Sitton, R. & Light, P. (1992). Drawing to differentiate: Flexibility in young children's human figure drawings. *British Journal of Developmental Psychology, 10*, 25-33.
- Solley, C. M. & Haigh, G. (1957). A note to Santa Claus. *Topeka Research Papers. The Menninger Foundation, 18*, 4-5.
- Stefanatou, A. & Bowler, D. (1999). Depiction of pain in the self-drawings of children with sickle cell disease, *Child Care, Health and Development, 23*, 135-155.

- Thomas, G., Chaigne, E. & Fox, T. (1989). Children's drawings of topics differing in significance: Effects on size of drawing. *British Journal of Developmental Psychology*, 7, 321-331.
- Tice, D. M., Butler, J. L., Muraven, M. B., & Stillwell, A. M. (1995). When modesty prevails: Differential favorability of self-presentation to friends and strangers. *Journal of Personality and Social Psychology*, 69, 1120-1138.
- Watling, D. & Banerjee, R. (2007a). Children's differentiation between ingratiation and self-promotion. *Social Development*, 16, 758-776,
- Watling, D., & Banerjee, R. (2007b). Children's understanding of modesty in front of peer and adult audiences. *Infant and Child Development*, 16, 227-236.
- Watling, D., & Banerjee, R. (2012). Children's understanding of disclaimers. *Social Cognition*, 30, 18-36.
- Yoshida, T., Kojo, K., & Kaku, H. (1982). A study on the development of self-presentation in children. *Japanese Journal of Educational Psychology*, 30, 120-127.
- Zeman, J. & Garber, J. (1996). Display rules for anger, sadness, and pain: It depends on who is watching. *Child Development*, 67, 957-973.
- Zentner, M.R. (2001). Preferences for colours and colour-emotion combinations in early childhood. *Developmental Science*, 4, 389-398.

## Table and Figures

*Table 1: Number, mean age and age range of children in each age group*

<i>Age Group</i>	<i>N</i>	<i>Mean Age</i>	<i>Age Range</i>
<i>Youngest</i>	100	7 y 2 mo	6 y 3 mo-8 y-2 mo
<i>Oldest</i>	100	9 y 1 mo	8 y 3 mo-10 y 1 mo
<i>Overall</i>	200	8 y 2 mo	6 y 3 mo-10 y 1 mo

Table 2: Frequency of drawing strategies by condition (RG=Reference Group, FC=Familiar Child, UC=Unfamiliar Child, FA = Familiar Adult, UA= Unfamiliar Adult.), drawing type (B=Baseline, H=Happy, S=Sad), and age group.

Strategy	Drawing type	Age Group									
		6- to 8-year-olds					8- to 10-year-olds				
		Condition					Condition				
	RG	FC	FA	UC	UA	RG	FC	FA	UC	UA	
	n=20	n=20	n=20	n=20	n=20	n=20	n=20	n=20	n=20	n=20	
Smile	B	1	2	1	0	1	0	0	0	0	0
	H	3	11	13	5	3	4	17	18	3	0
	S	0	2	0	0	0	0	0	0	0	0
Waving	B	0	4	0	0	0	2	1	4	0	0
	H	2	7	6	4	3	2	9	3	2	0
	S	0	0	0	0	0	0	0	0	0	0
Gift giving	B	0	0	0	0	0	0	0	0	0	0
	H	2	3	1	4	2	2	1	1	1	0
	S	0	0	0	0	0	0	0	0	0	0
Good weather	B	0	2	0	0	0	0	0	0	0	0
	H	2	3	2	3	3	5	1	5	1	1
	S	0	0	0	0	0	0	0	0	0	0
Animals	B	0	0	0	0	0	0	0	0	0	0
	H	1	0	2	2	1	0	0	2	1	2
	S	1	1	0	0	0	0	0	0	0	0
Other person	B	1	1	0	0	0	0	0	0	0	0
	H	1	2	1	4	2	1	1	1	0	0
	S	0	0	0	0	0	1	0	0	1	0
Frown	B	1	0	0	0	0	0	0	0	0	0
	H	0	0	0	0	0	0	0	0	0	0
	S	0	4	9	9	6	0	1	2	12	14
Tears	B	0	0	0	0	0	0	0	0	0	0
	H	0	0	0	0	0	0	0	0	0	0
	S	1	6	2	8	5	0	0	2	9	10
Shouting	B	0	0	0	0	0	0	0	0	0	0
	H	0	0	0	0	0	0	0	0	0	0
	S	0	4	9	9	3	0	1	2	10	8
Thumping	B	0	0	0	0	0	0	0	0	0	0
	H	0	0	0	0	0	0	0	0	0	0
	S	0	0	3	5	2	0	1	2	6	2
Bad Weather	B	0	0	0	0	0	0	0	0	0	0
	H	0	0	0	0	0	0	0	0	0	0
	S	1	0	3	5	2	0	1	2	6	2
Line use	B	0	0	0	0	0	0	1	0	0	1
	H	0	0	0	0	0	0	0	0	0	0
	S	1	0	3	5	2	0	0	1	5	1

Table 3: Colour use counts by drawing type for each colour across all conditions

Colour	Drawing Type	Condition					Total
		R	FC	UC	FA	UA	
Red	B	5	5	3	0	2	15
	H	10	7	8	5	3	33
	S	2	0	0	2	0	4
Orange	B	3	1	3	4	2	13
	H	0	1	1	2	2	6
	S	1	3	3	0	2	9
Yellow	B	4	1	0	1	1	7
	H	15	23	18	19	18	93
	S	2	2	0	1	0	5
Green	B	7	16	16	17	13	69
	H	2	1	0	0	0	3
	S	1	2	0	0	4	7
Blue	B	0	2	7	7	2	18
	H	2	5	9	4	6	26
	S	7	21	16	14	15	73
Purple	B	9	1	1	2	1	14
	H	3	3	0	5	4	15
	S	0	0	3	0	4	7
Pink	B	9	14	11	9	19	62
	H	8	0	4	5	9	26
	S	2	0	0	1	1	4
Black	B	0	1	0	0	0	1
	H	0	2	0	0	1	3
	S	18	10	12	12	14	66
Brown	B	1	0	0	1	3	5
	H	0	0	0	0	0	0
	S	8	4	6	6	4	28

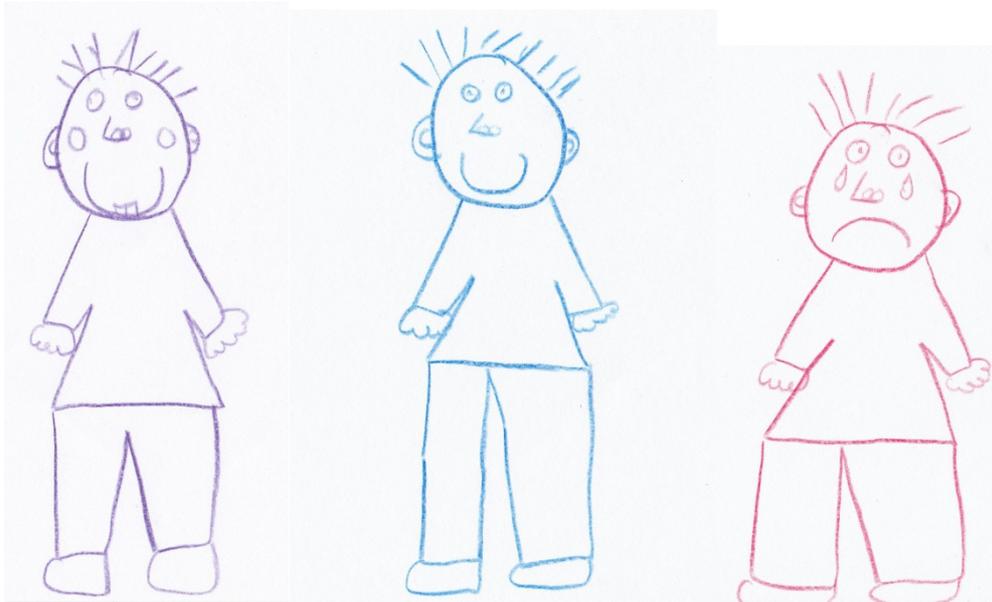


Figure 1: An 8 yr old boy's baseline, happy and sad self drawings for a familiar adult audience.

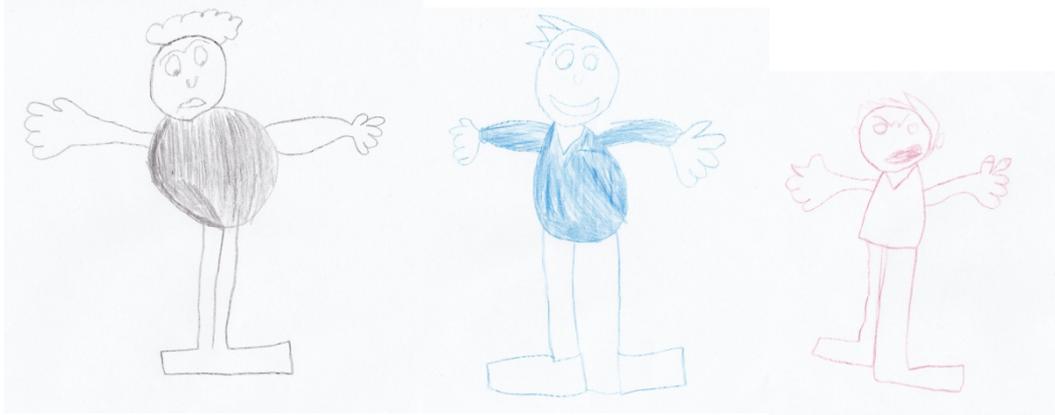
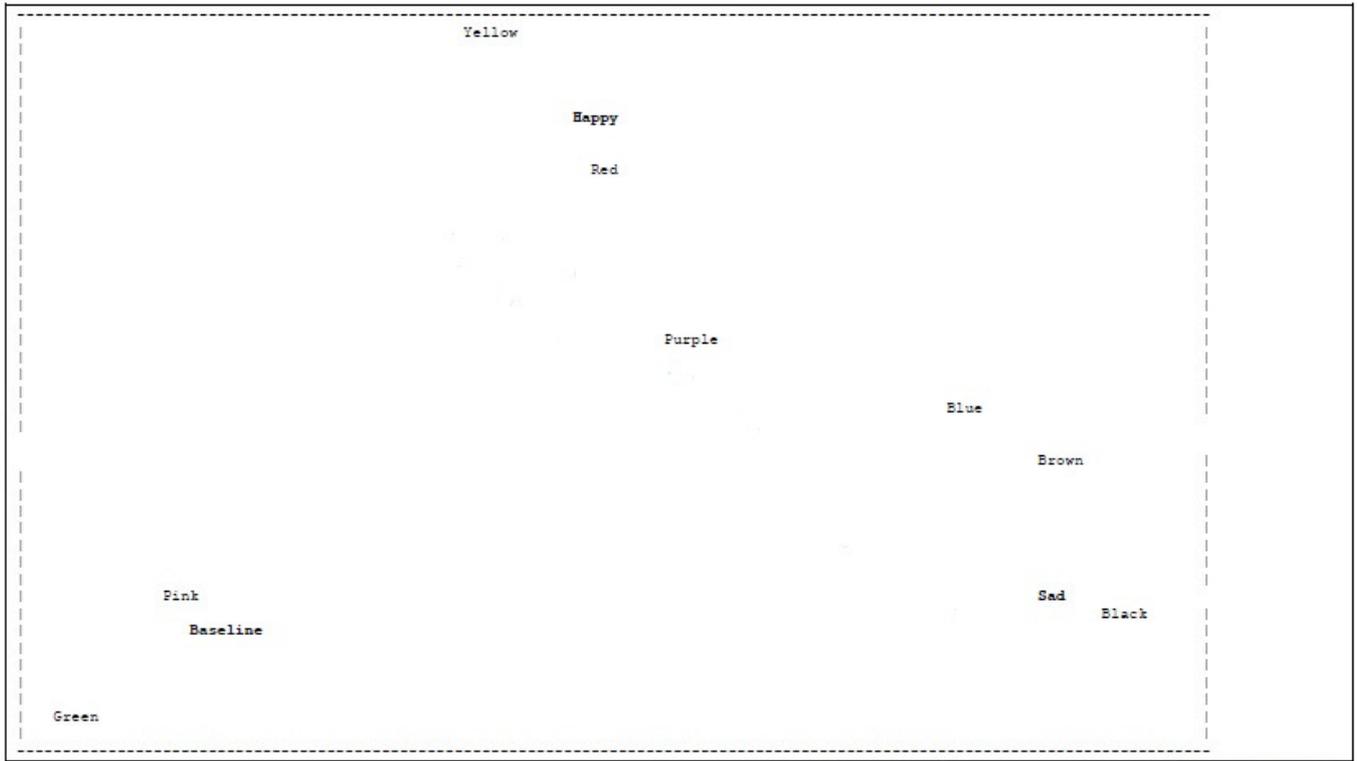


Figure 2: An 8 yr old boy's baseline, happy and sad self drawings for an unfamiliar child audience.



Two significant dimensions:  $\chi^2(3) = 56.87, p < .001$  and  $\chi^2(2) = 23.63, p < .001$

Figure 3: Colour frequencies responses for all drawing types