

# EFFICACY OF DRAWINGS AS A MEASURE OF ATTACHMENT STYLE AND EMOTIONAL DISTURBANCE: AN AUSTRALIAN CHILDREN INVESTIGATION

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## Abstract

Many studies have explored the link between attachment and emotion in children, but none have explored this through children's drawings. The current study aimed to investigate this gap in the literature. It was hypothesized that children would differ in scores of emotional disturbance based on their attachment style. Specifically, children with secure attachment would have lower emotional disturbance than children with insecure attachment. Three human figure drawings (person, self, and family) were collected from 43 schoolchildren aged between 5 and 12 years. The drawing procedure and emotional disturbance scores were based on the Draw A Person: Screening Procedure for Emotional Disturbance developed by Naglieri, McNeish, and Bardos (1991) and the Kinetic Family Drawing developed by Burns and Kaufman (1972). Using the Family Drawing Checklist developed by Fury, Carlson and Sroufe (1997), the children's family drawings were categorized into the attachment styles of secure and insecure. This is the first study in Australia to look at these variables. Children attending a mainstream school where pathology is not expected were used in the study. Some indicators of emotional disturbance were detected; however, differences in emotional disturbance indicators between securely and insecurely attached children were not significant. Methodological issues that may have contributed to nonsignificant results, practical implications, and future directions are discussed.

**Keywords:** *art therapy, drawing, children, attachment, emotion, safety, Draw A Person, Kinetic Family Drawing*

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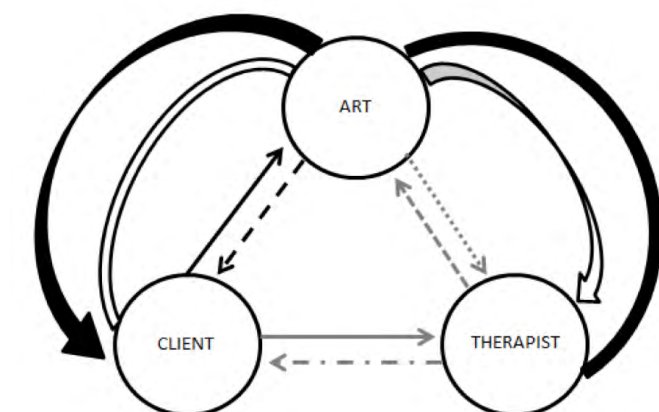
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Art therapy first emerged in psychoanalytic theory. In psychoanalysis, Freud aimed to uncover repressed events by making the unconscious conscious. This was thought to be the key to recovery from neurotic illness (Rubin, 2001). Freud also identified the importance of visual images to understanding mental illness.

With his analytical approach, Jung asked his clients to make visual representations of their dreams and fantasies as a way to enter a relationship with unconscious material (Brooke, 2006). Clients would subject the image to interpretation through a dialogue with the therapist to bring it to the collective subconscious. From the Jungian perspective, the artwork provides a buffer that mediates between the client and the therapist. Thus, instead of a dyadic relationship between client and therapist, there is a triangular relationship between client, artwork, and therapist (Figure 1).



Artwork		Client's expression
		Client's impression (visual feedback)
		Therapist's expectancies
		Therapist's perceptions
Artwork as		Communication to client in response to artwork
Mediator		Communication to therapist through the artwork
Direct		Client's perception of therapist
Relationship		Therapist's perception of client

Figure 1. The triangular relationship between client, artwork, and therapist (adapted from Rubin, 2001).

In psychodynamic theory, there is an emphasis on the therapist forming a working alliance with the client. It is through this alliance that clients become willing to recall the details of threatening material and experience safety (Prochaska & Norcross, 2010; Allison & Rossouw, 2013). The literature indicates that the client–therapist relationship is one of the most important predictors of client outcomes, accounting for

on average 30% of the variation in outcomes (Asay & Lambert, 1999). With the artwork as a buffer, art therapy facilitates the development of the working alliance where the client feels safe to explore unconscious material.

## Human Figure Drawings

A number of procedures using human figure drawings (HFD) have been developed: Recent research supports the Draw A Person: Screening Procedure for Emotional Disturbance (DAP:SPED), developed by Naglieri, McNeish, and Bardos (1991) to evaluate child emotional functioning (Naglieri & Pfeiffer, 1992; Bruening, Wagner, & Johnson, 1997), and the Kinetic Family Drawing (KFD) developed by Burns and Kaufman (1970) to evaluate children's self-concept (Veltman & Browne, 2003; Kim & Suh, 2013). HFD are useful because they are simple to administer and non-threatening for children. They can be used when other techniques are limited by factors such as language barriers, cultural background, and communication deprivation (Burns & Kaufman, 1970; Rabin, 1987). Both the DAP:SPED and the KFD can provide further insight to understanding a child.

## Neural Development and Attachment

The left and right hemispheres of the brain develop at different rates (Hart, 2008). A growth spurt in the right hemisphere begins as early as the 25th fetal week, continuing until 24 months of age (Hart, 2008), while an early growth spurt in the left hemisphere occurs between 18 months and 3 years of age. This asymmetrical growth of the brain continues throughout childhood and has an impact on childhood development (Hart, 2008).

The right hemisphere is linked with processing social, emotional, and bodily information (Hart, 2008). During right-hemispheric development, children are able to interpret the emotional content of facial expressions. This has significant effects on the bonding between infant and caregiver in early life. For example, a caregiver who is sensitively attuned to the child's responses allows the child's mind to regulate itself in the moment and develop regulatory capacities that can be utilized in the future (Siegel, 1999). Through a relationship with a steady and reliable caregiver, infants develop

a sense of self and fulfill their basic needs (Gonick & Gold, 1991). Parental sensitivity to signals from the child (e.g., crying) is the essence of secure attachment (Siegel, 1999), and these interactions between infant and caregiver allow for the creation of brain connections that are vital for the development of self-regulation (Siegel, 1999).

Humans share the need for attachment with other social animals (Grawe, 2007). The effect of attachment on wellbeing was demonstrated by Andrews and Rosenblum (1991) in a study on rhesus monkeys. In a follow-up study it was found that monkeys who experienced separation from their mothers had a stronger response to the administration of nor-adrenalin and a significantly weaker response to the administration of serotonin two and a half years later, and that they had higher concentrations of corticotrophin releasing factor (CRF) at a four year follow-up compared to monkeys who had constant contact with their mothers (Coplan et al., 1996). These findings suggested that even a mild disturbance of the attachment system can lead to long-term elevations in the stress response.

### Basic Human Needs

Epstein (1990) proposed four basic psychological needs: attachment, orientation/control, pleasure maximization/avoidance of pain, and self-esteem enhancement/self-esteem protection. Building upon Epstein's basic needs model, Grawe (2007) developed the consistency-theoretical model of mental functioning. Grawe's model states that our experiences and behavior are driven by our motivational schemas—the means we develop throughout our life to satisfy our basic needs and protect them from violation (Grawe, 2007). There are two motivational schemas: approach and avoidance. If a child grows up in an environment that is oriented to the fulfillment of his/her basic needs, then the child will develop primarily approach-motivational goals and will gain great experience in achieving such goals. On the other hand, if a child grows up in an environment in which his/her basic needs are repeatedly violated, then the child will

develop avoidance schemas in order to protect him/herself from further harm. The current study focuses on the basic needs of attachment and orientation/control, both of which are shaped by early life experiences with the primary caregiver (Grawe, 2007).

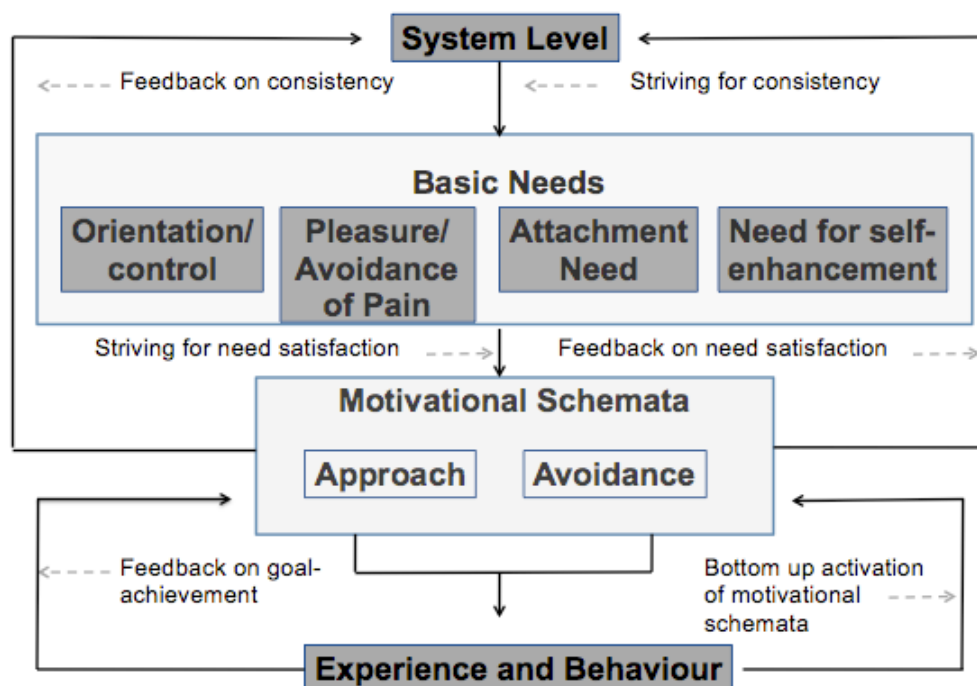


Figure 2. Consistency-theoretical model of mental functioning (Grawe, 2007).

### Attachment and Emotion

A number of studies have investigated attachment and emotion in children. For example, Borelli and colleagues (Borelli et al., 2010) examined the association of attachment and emotion reactivity/regulation in 97 schoolchildren between 8 and 12 years of age. Emotion reactivity/regulation was measured in three ways: self- and parent-assessments of emotion, neuroendocrine reactivity, and a fear-potentiated startle response. Children participated in a fear-potentiated startle paradigm (Borelli et al., 2010). Cortisol levels were measured using a saliva sample and recorded electromyographic (EMG) activity. The findings of this study indicated that greater attachment security was related to: greater child-reported positive trait- and state-level emotion, lower cortisol levels pre self-report of emotion, higher initial startle magnitude during threat, and a faster decrease in startle magnitude during threat—in other words, that attachment security is related to emotion.

### Drawings and Attachment

An emerging body of the literature focuses on the analysis of attachment security in children's family drawings. Kaplan and Main (1986) developed a fam-

ily drawing system, the Kaplan-Main System (KMS), to analyze a child's family drawings based on attachment. The KMS categorizes children's drawings into the insecure attachment styles of avoidant, resistant, and mixed insecure based on a number of indicators for each attachment style. Fury and colleagues refined the KMS with the Family Drawing Checklist (FDC) and included indicators for the disorganized/disorientated attachment style in children's family drawings (Fury, Carlson & Stroufe, 1997). A series of global rating scales were also developed as a second approach to scoring the drawings (Fury et al., 1997).

## **The Study**

### **Aim and Hypothesis**

The literature has indicated attachment styles are associated with differences in emotion regulation of schoolchildren. However, there is a gap in understanding as to whether children's drawings can detect attachment styles and emotional states. The current study aimed to investigate this gap. It was expected there would be differences in children's emotional disturbance scores on the DAP:SPED across attachment style. Specifically, it was predicted that children with a KFD indicating a secure attachment style would score lower on the DAP:SPED than children with a KFD indicating an insecure attachment style (avoidant, resistant, and disorganized).

## **Method**

### **Participants and Materials**

Participants were 43 children (24 male, 19 female) from a mainstream primary school in south-east Queensland aged between 5 and 12 years of age ( $M = 7.4$  years,  $SD = 2.41$  years). The children lived with their biological parent(s) and were from a low socio-economic background. With parental consent, they participated voluntarily in the study.

Drawings from the participants were obtained individually in the experimental room outside the classroom. Children were verbally given information about the study and were asked to give their verbal consent. The DAP:SPED was administered before the KFD to help ease participants from a simple single-figure drawing to the more detailed drawing of the family. All drawings were done on a plain white A4 sheet of paper placed on the table directly in front of the participant at a diagonal (45°). A 2B pencil and

eraser were placed in the center of the paper.

### **DAP:SPED Procedure**

The DAP:SPED requires the participant to produce three drawings: man, woman, and self. There is a time limit of 5 minutes for each drawing (Naglieri et al., 1991). Only drawings of one person and the self were obtained in the current study. This part of the DAP:SPED was modified because it was considered there may be gender differences when boys and girls are asked to draw a man before a woman. Furthermore, drawing three human figures followed by a family drawing (KFD) may be taxing on a young child. The 5-minute time limit also was not used in case it elevated the stress response in participants who take longer to complete a HFD, potentially disrupting the limited amount of time the experimenter had to build rapport with the children.

For the DAP:SPED drawings, participants were asked to draw the best picture they could do of a whole person and of themselves. After the drawing was finished, children were asked a set of questions. This inquiry phase included questions such as "Who is he/she?" and "How does he/she feel? Why?"

### **KFD Procedure**

For the KFD, children were asked to draw a picture of their family (including themselves) doing something. There was no time limit. An inquiry phase asking the child to indicate each family member and what each family member is doing is part of the KFD procedure (Burns & Kaufman, 1972). The children were also asked who they live with.

### **FDC Procedure**

The FDC was used to classify the child's family drawing into the attachment styles of secure and insecure (avoidant, resistant, and disorganized/disorientated) based on the indicators developed by Fury et al. (1997). Family drawings that did not meet the attachment style indicators were classified as securely attached, the default attachment style.

## **Results and Discussion**

### **Data Cleaning**

The original sample was 43 children. However, one child did not draw any human figure drawings and another child did not meet the age criteria (6 to 17



years) for evaluation on the DAP:SPED (Naglieri et al., 1991). Therefore, the final sample was 41 school-children (22 male, 19 female;  $M = 7.46$  years,  $SD = 2.44$  years).

### Hypothesis Testing

Secure attachment was predicted to score lower on the DAP-SPED self-drawing than an insecure attachment. To test this hypothesis, attachment styles of secure and insecure were first compared with mean scores on the DAP-SPED self-drawing, shown in Table 1.

Table 1

*Attachment style mean raw scores on the DAP-SPED self-drawing*

		M	SD	N
Attachment style	Secure	5.43	2.69	21
	Insecure	6.45	2.37	20
Total				41

An independent groups t-test was conducted to determine differences in DAP-SPED self-drawing scores across attachment style. A non-significant difference was noted between children with secure attachment ( $M = 1.14$ ,  $SD = .36$ ) and insecure attachment ( $M = 1.20$ ,  $SD = .41$ ),  $t(39) = -.475$ ,  $p = .637$ .

At the time of the study the participants were attending a mainstream school. In order to be able to function at school, a certain level of emotional adjustment is required. Borelli et al. (2010) were able to find differences in cognitive, social, emotion behavioural adjustment as well as emotion reactivity/regulation in their study of schoolchildren; however, the findings of the current study were not consistent with these results.

Nevertheless, the study by Borelli and colleagues (Borelli et al., 2010) had a larger sample size (97 children), which enhanced the ability to detect true effects. Furthermore, their study investigated attachment security and adjustment of children in middle childhood, between 8 and 12 years of age (Borelli et al., 2010). In contrast, the current study investigated a broader age range of children between 5 and 12 years of age. It is possible there could have been differences in emotional needs across age which were not accounted for in the current sample.

### Descriptive Analyses

Figure 3 shows the attachment styles assigned to children's drawings with the FDC.

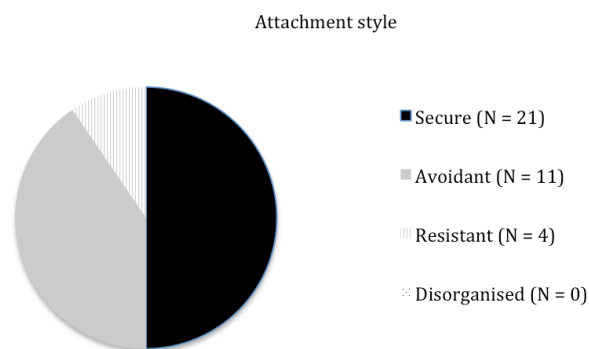


Figure 3. Attachment style assigned by FDC.

The sample indicates that 50% of children had secure attachment, 40.48% had anxious-avoidant attachment, 9.52% had anxious-resistant attachment, and no children were found to have disorganized/disorientated attachment. The global distribution of attachment is 65% secure, 21% anxious-avoidant, and 14% anxious-resistant (van Ijzendoorn & Kroonenberg, 1988); these figures are based on a meta-analysis of 32 strange situation studies from 8 countries, not including Australia (van Ijzendoorn & Kroonenberg, 1988). The current study had a small sample, which is a limitation on generalizing the results to the wider population. It also included Australian children from a low-socioeconomic background, and the distribution of attachment styles found in this study reflected characteristics of this specific sample. Therefore, the sample size and cultural difference could explain the differences in attachment style distribution.

### Strengths of the Study

A strength of the current study is that it highlights the subtlety of emotional wellness and unwellness. The study investigated children from a nonclinical, mainstream school where cases of emotional unwellness are expected to be low. Nevertheless, these children still produced drawings with some indicators of emotional disturbance.

As far as the researcher could identify, no other studies have investigated the link between attachment and emotional disturbance in children's drawings. The current study has therefore addressed this gap in the literature. Furthermore, it provides data on attachment and emotion in drawing based on an Australian sample of schoolchildren.

## Practical Application

This study has applications for the therapeutic relationship. The triangular therapeutic relationship in art therapy described above (Figure 1) may be an opportunity for individuals who have had adverse attachment experiences to feel safety. Drawing is a safe way for clients to explore experiences of a threatening nature and gain stability in their environment (Cooper, Hoffman, Powell, & Marvin, 2005; Prochaska & Norcross, 2010). It down-regulates distress and unhelpful neurotransmitter firing of stress hormones such as norepinephrine, corticotrophin releasing factor, corticotrophin hormone, adrenalin, and cortisol (Rossouw, 2012). A good therapeutic relationship of safety down-regulates the distress response and promotes the formation of new neural connections—and, ultimately, new neural pathways that facilitate approach rather than avoidance motivational schemas (Grawe, 2007). The goals of attachment and control can thus be attained through safety created in the therapeutic relationship (Allison & Rossouw, 2013).

The present study also contributes to the use of drawing as an additional measure of attachment style whereby attachment is measured from the child's perspective. Clinicians working with children may use the DAP:SPED and KFD projective techniques to illuminate attachment relationships, family dynamics, and emotion, as well as to assist children in understanding and expressing these experiences. School personnel and other mental health practitioners may also include these projective techniques in their assessment of children.

## Future Directions

Future research could include some additional measures of attachment style, for example, child and parent self-report assessments (Target, Fonagy, & Shmueli-Goetz, 2003). Additional emotional indicators (e.g., neurochemical measures) and subjective measures such as the Child Behavior Checklist (Shiakou, 2012) could also be included; and a wider sample is needed. These changes could provide a clear picture on the association between attachment style and emotion.

The current literature on attachment styles in children's drawings focuses on secure, anxious-avoidant, and anxious-resistant styles of attachment; however, no empirical research on children with disorganized/disorientated attachment has been conducted. Children in foster care are likely to have a disorganized/disorientated attachment style due to continuous vio-

lations of their attachment and control needs by their primary caregivers and changes in foster care placement (Stovall & Dozier, 1998; Mann & Kretchmar, 2006). As a result, they develop a deep mistrust for adults and experience behavioral, cognitive, and emotional adjustment difficulties. Future research could explore the family drawings of these children.

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