

**Children's Knowledge about Drawing Techniques for the Differential Depiction of  
Characterised Stimuli**

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## **INTRODUCTION**

The literature offers contrasting findings about whether children vary their graphic response when asked to draw an affectively characterised topic (Thomas, Chaigne & Fox, 1989; Jolley, 1995). However, research has shown that, under specified experimental conditions, children will vary the formal properties of their drawings of topics characterised as nice or nasty. Children have been shown to increase the size of positively characterised figures (Burkitt, 1999; Cleeve & Bradbury, 1992; Thomas, Chaigne & Fox, 1989) and reduce the size of negatively characterised topics (Burkitt, 1999; Craddick, 1961, 1963; Thomas, Chaigne & Fox, 1989). It has also been found that children will alter their choice of colour for differentially affectively characterised versions of the same topic (Burkitt, 1999).

Such findings can be viewed from the perspective of children's graphic flexibility being manipulated via task instructions. Such observations have been made extensively within research investigating cognitive-procedural influences on children's drawings (e.g. Freeman, 1980; Barrett & Bridson, 1983; Light & Simmons, 1983; Sutton & Rose, 1998). However, relatively little work has documented the flexibility of children's representational strategies in response to affectively characterised stimuli within an experimental drawing situation.

## **AIMS**

This study was designed to investigate how children vary formal elements (i.e. size and colour) in their free-hand drawings of affectively characterised topics, to explore other additional strategies which they might employ, and to assess which strategies they are able to report using in their own work for differentiating nice and nasty figures. Results pertaining to the following specific questions will be presented:

1. Do children use and report content strategies (e.g. use of detail, mutations) for differentiating positive and negative figures?
2. Do such categories of response reflect those observed by adults in the children's drawings?

## **METHOD**

### ***Participants***

253 children (129 boys, 124 girls) were randomly selected from mainstream primary schools in Surrey, U.K. The age groups are shown in Table 1.

Table 1: Mean ages of children in the three age groups

	Age Group	
<i>Youngest</i> (n = 109)	<i>Middle</i> (n = 72)	<i>Oldest</i> (n = 72)
Mean = 6y 0m Range=4y 3m-7y 6m	Mean = 8y 1m Range=7y 7m-8y 10m	Mean = 10y 0m Range=8y 11m-11y 6m

Children were randomly assigned to one of three conditions, with equivalent numbers from each year group, drawing either a man (n=84), a dog (n=85), or a tree (n=84).

### **Materials**

10 colour cards (red, orange, yellow, green, blue, purple, pink, white, brown and black), 10 crayons of the same selection of colours, A4 plain paper and lead pencils were used.

### **Procedure**

Children were seen individually in a quiet area of their school. All children completed three drawings of either a man, a dog or a tree. The children drew a baseline drawing first, and then completed two further drawings in counterbalanced order: one following positive affective topic characterisation, and one following negative topic affective characterisation. Each drawing was removed before presentation of the subsequent drawing task.

The instructions for the children drawing the man were as follows. Equivalent instructions were given to the other groups.

#### **Baseline drawing task instructions:**

*“I’d like you to draw a man. Use the pencil to draw him, and just one of these colours to colour him in. Draw the whole man as well as you can.”*

#### **Nice drawing task instructions:**

*“Now, think of a man who is a very kind nice man, and who is very pleasant and friendly to everyone. Draw the man, remembering what a nice person he is. Use the pencil to draw him, and just one of these colours to colour him in. Draw the whole man as well as you can.”*

#### **Nasty drawing task instructions:**

*“Now, think of a man who is a very nasty horrible man, and who is very mean and unfriendly to everyone. Draw the man, remembering what a nasty person he is. Use the pencil to draw him, and just one of these colours to colour him in. Draw the whole man as well as you can.”*

### ***Questions***

After their completion, children’s nice and nasty drawings were placed in front of the child in counterbalanced order, and the following questions were asked:

“Tell me how you showed that this man/tree/dog is nice.”

“Tell me how you showed that this man/dog/tree is nasty.”

The children’s responses were recorded verbatim.

## **RESULTS**

### ***Formal properties of size and colour***

Statistical analyses showed that children did draw nasty figures significantly smaller than nice figures, and that they used different colours for the differently characterised topics. Specifically, children used more preferred colours for the nice figures and less preferred colours for the nasty figures. These findings replicated those found in two previous studies into size and colour changes according to the affective characterisation given to the topic (Burkitt, 1999).

### ***Additional response strategies***

Two types of content analysis were conducted. One focused on the strategies which 2 adult judges observed in the children’s drawings. The other was an analysis of children’s self-reported strategies in answer to the question of how they showed that the topic was either nice or nasty.

Table 2 displays children’s self-reported strategies, as well as the strategies observed in the same drawings by adult judges. The level of inter-rater reliability obtained by adults judging the use of these strategies in the children’s drawings is also shown. There was only one strategy which the adult judges observed which was not reported by the children (line quality).

*Table 2: Children’s self-reported, and adult-observed, strategies for depicting positively and negatively characterised topics*

<i>Strategy</i>	<i>Reported by children</i>	<i>Reported by adult judges</i>	<i>Percentage adult inter-judge reliability in attribution of strategy to drawings</i>
Details	Yes	Yes	93%
Actions	Yes	Yes	90%
Use of line	Yes	Yes	85%
Use of colour	Yes	Yes	97%
Size variations	Yes	Yes	89%
Directional size Change	Yes	Yes	97%
Mutations	Yes	Yes	97%
Words	Yes	Yes	98%
Characterisations	Yes	Yes	89%
Multiple techniques	Yes	Yes	94%
Line quality	No	Yes	89%

Table 2 shows that children were able to report on a wide range of strategies when depicting topics that have been given differential affective characterisations. The children’s strategies were, save one, the same as those observed in the children’s drawings by adult judges.

***Comparison of strategies reported for the depiction of positively and negatively characterised versions of the same topic***

Further analyses were conducted to compare directly the techniques children used for the depiction of nice and nasty topics. Separate analyses were conducted for each child-reported strategy, and for each strategy which the adults observed.

For each strategy (see Table 2), the characterised drawings were scored as 1 or 0 depending on whether the characterised drawing exhibited a change in strategy use from that reported or observed in the children’s baseline drawing. For example, if the child had used an action in their baseline drawing, and one in the positive drawing, the positive drawing would receive a 0 for actions, as a change in technique from baseline had not occurred.

Four-way ANOVAs were conducted for each response strategy (age group \* sex \* condition: man vs dog vs tree \* type: nice vs nasty)<sup>1</sup>. This allowed comparison of the use and report of each strategy for both nice and nasty drawings (compared to baseline drawings).

The analysis of the children's self-reported strategies will be presented here. It will also be pointed out where the same differences emerged following ANOVA analysis for the adults observations of children's use of each strategy.

### *Children's reported strategies for the depiction of nice and nasty drawings*

#### **1. Detail use overall**

This category included such changes from baseline drawings as children including a neat hairstyle in their nice drawings, and a messy hairstyle in their nasty drawings. Children reported more use of details for completion of their nice rather than their nasty drawings ( $F=26.98$ ,  $df=1, 235$ ,  $p<0.05$ ). This effect also occurred with adult judgements about the use of this strategy. The youngest group reported less detail use overall than the other two groups ( $F=7.28$ ,  $df=1, 235$ ,  $p<0.05$ ).

#### **2. Actions**

This category included drawings where, for example, figures were drawn crying or laughing, and dogs were drawn as jumping (for joy!) or gnashing their teeth. The youngest children reported the use of action less than the older groups ( $F=11.79$ ,  $df=2, 235$ ,  $p<0.05$ ). This effect also emerged through the adult reports. More actions were reported from the groups drawing men and dogs ( $F=20.83$ ,  $df=2, 235$ ,  $p<0.05$ ). Adult judgements differed in that more use was seen in the children's drawings of men, than in the drawings for both the dogs and trees. Girls reported more use in their nice drawings, whereas boys reported more for their nasty drawings, ( $F=21.84$ ,  $df=1, 235$ ,  $p<0.05$ ). This also converged with adult reports.

#### **3. Line use**

Drawings in this category included those which the children reported, or adults judged, had been drawn neatly, or where aspects had been drawn messily. For example, where children said that they had drawn a nasty figure using scribbles. This technique was reported more for the nasty drawings ( $F=26.59$ ,  $df=1, 235$ ,  $p<0.05$ ) than for the nice drawings. Adult

observation indicated the same. Greater line use was reported by the children in the man and tree conditions than in the dog condition ( $F=6.58$ ,  $df=2$ , 235,  $p<0.05$ ).

#### **4. Colour use**

Characterised drawings which were drawn in a different colour from baseline drawings were included in this category, for example, where children had used pink in their nice drawing and brown in their nasty drawing. Children reported more use of altering colour for their nasty as opposed to nice drawings ( $F=5.14$ ,  $df=1$ , 235,  $p<0.05$ ). Analysis of adult observations showed the same results.

#### **5. Size use**

No main or interaction effects of age, sex, condition or type on children's nice and nasty drawing size emerged (i.e. children employ this strategy regardless of age, sex or drawing topic).

#### **6. Directional size change**

Drawings were included in this category when nice drawings were scaled up from, and nasty drawings were scaled down, from baseline drawings. More use was reported by children for their nice drawings ( $F=31.51$ ,  $df=1$ , 235,  $p<0.05$ ), as with adult observations. More use was reported in the tree condition than the dog condition ( $F=3.62$ ,  $df=2$ , 235,  $p<0.05$ ). This pattern also occurred in analysis of adult reports. The youngest group reported more use than the oldest group ( $F=4.53$ ,  $df=2$ , 235,  $p<0.05$ ).

#### **7. Mutations**

Examples of drawings in this category included when children altered and/or exaggerated certain features of a figure. For example, some children drew peculiar shaped trees to emphasise nastiness, whereas some children drew disproportionately large claws on nasty dogs. More use was reported for the nasty drawings ( $F=66.83$ ,  $df=1$ , 235,  $p<0.05$ ), as with adult observations. The greatest use was reported by the oldest age group ( $F=3.11$ ,  $df=2$ , 235,  $p<0.05$ ). More use was reported in the tree condition than in both the man and dog conditions ( $F=10.26$ ,  $df=2$ , 235,  $p<0.05$ ), as with adult observations. More use was reported by boys than by girls ( $F=6.76$ ,  $df=1$ , 235,  $p<0.05$ ). This also emerged for the adult observations. More use

was reported by the oldest group than by both the middle and youngest age groups ( $F=4.72$ ,  $df=2$ , 235,  $p<0.05$ ). This also converged with adult observation.

## **8. Word use**

Children often drew speech bubbles containing positive or negative words or figures wearing clothes which displayed positive or negative wording. Drawings where children had included writing to show that a nasty dog was growling were also included in this category. The middle age group reported less use than the youngest and oldest age groups ( $F=6.20$ ,  $df=2$ , 235,  $p<0.05$ ). More use was reported ( $F=13.72$ ,  $df=2$ , 235,  $p<0.05$ ) in the man condition than in both the dog and tree conditions, as with adults observations. An interaction effect was found between age group and condition ( $F=4.54$ ,  $df=4$ , 235,  $p<0.05$ ). For the oldest age group, there was more use reported in the man condition than in both the tree and dog conditions. Also, more use was reported by the oldest group compared with the youngest group in the man condition.

## **9. Character use**

Drawings were included in this category if the characterised figures were drawn as distinct characters. For example, if the child had drawn their favourite footballer, a super-hero, or a clown in their nice drawings, and negative characters such as the devil in their nasty drawings. More use was reported in the man condition than in both the dog and tree conditions ( $F=9.02$ ,  $df=2$ , 235,  $p<0.05$ ). This was also observed by adults.

## **10. Line quality**

This category was generated on the basis of adult observation. The children did not mention this technique. Drawings were included in this category when, for example, a different line pressure was observed between the drawing types. Children sometimes used a heavy line when drawing nasty figures, and a lighter pressure when drawing nice figures. More variation of line quality was observed for the nasty drawings ( $F=13.33$ ,  $df=1$ , 235,  $p<0.05$ ).

## **11. Combined techniques**

When children used more than one of the above techniques, drawings were included in this category. For example, when children changed their colour use and also made the figure a super-hero in their nice drawings, or when they drew a negative character shouting and

waving a sword in their nasty drawings. Children reported a using a combination of techniques more for their nasty rather than nice drawings ( $F=9.29$ ,  $df=1, 235$ ,  $p<0.05$ ). This converged with adult observation.

Figure 1 shows a child's baseline drawings of a man, which was coloured red. Figure 2 shows the same child's nice man, which was coloured blue, labelled as Daddy, and wearing a jumper displaying a love heart. Figure 3 shows the same child's nasty man. The man is coloured brown, labelled as a stranger, and holding a bag.

### **CONCLUSIONS**

1. Children as young as 4 years old are able to use and report a wide range of techniques to depict nice and nasty versions of the same topic.
2. The techniques are used and reported differentially for nice and nasty topics.
3. Children's ability to use and report their graphic strategies is neither stimulus-specific nor gender-specific nor age-specific.
4. Overall, the strategies reported by children mirror those seen by adults in their drawings.

The strategy of line quality was the only one additionally reported by adults; it could be the case that children perceive line quality and line use as being the same strategy. Further empirical work is needed to assess this possibility.

No evidence for developmental trends emerged. Thus, children's ability to produce drawings of affectively characterised versions of the same topic operates simultaneously with their ability to report the strategies they use to differentiate the characterised figures. Furthermore, both of these abilities are present from the age of 4 years onwards.

This study suggests that children are able to use a variety of strategies to draw differentially characterised topics, and can discuss their drawing techniques in comparable terms to adults.

***Footnote***

<sup>1</sup> Although categorical data are not normally analysed using ANOVA, it is well established that ANOVA does yield accurate outcomes when used to analyse categorical data scored and 0's and 1's (Gabrielsson & Seeger, 1971; Greer & Dunlap, 1997; Lunney, 1970).

## Illustrations of Combined Techniques



Figure 1: Baseline Man



Figure 2: Nice Man



Figure 3: Nasty Man

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