Boys’ Art, Girls’ Art: A Rural Study

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Abstract

This article describes a longitudinal, rural project undertaken with 40 Australian preschoolers across the transition from early childhood centre to school. Developmental differences regarding gender were identified in the children’s drawings both at preschool and school levels, some of these indicating changes had occurred across the transition to school. Preschool girls for instance excelled in the areas of basic form, colour and spatial integration, but at school level this pattern was all but reversed. Differences between the content of the drawings were also analysed. The implications for the teacher’s role are discussed.

Introduction

Children’s drawings have been a focus of interest to researchers for a number of decades and continue to be as new areas of enquiry open up. Previously literature in the area has focused on a broad range of topics such as the development of realism in children’s art (Rosenblatt and Winner, 1988), the development of perspective (Willats, 1977), how children might transpose three dimensional objects into two dimensional form (Nicholls and Kennedy, 1992), how depiction of people emerges (Jameson, 1968; Freeman, 1988; and Gardner, 1980; to name but a few), children’s abilities to appreciate features of style and aesthetics (O’Hare and Westwood, 1984; Spensley and Taylor, 1999), and patterns of creative development (Urban, 1991; Daugherty, 1993).

Research that explores gender differences in children’s drawing and painting has also been undertaken. Silver (2001) found significant gender differences concerning the expression of positive and negative attitudes, portrayal of relationships, attitudes about the opposite sex and depictions about food and eating, but could not identify differences in relation to spatial concepts when testing for horizontality and verticality. Boyatzis and Albertini (2000) reported that boys’ drawings more frequently included the supernatural and vehicles and machinery, while girls’ drawings centred round animals, houses and stereotypical depictions of hearts. Boyatzis and Eades (1999) found stereotypical gender preferences in the drawings of four and five-year-olds as well as in their choice of pictorial topics when selecting pictures to colour in. Tuman’s research demonstrated that the drawings of primary school children revealed girls’ drawings to be more humanistic and socially oriented and boys’ drawings to contain more aggressive and adventurous themes (Tuman, 1999).

According to the psychological literature, gender differences have also been identified in relation to some of the cognitive (perceptual) abilities that are necessary for a person
to perceive form in increasingly complex ways. This ability is relevant to the process by which children learn how to perceive and then depict visual form. Research in the area of visual spatial tasks for instance has shown that generally males perform better (Hyde, 1981; Maccoby and Jacklin, 1974). Similar trends have been found regarding spatial orientation tasks (Ottman, 1968), the mental rotation of objects and also in transformation tasks (Linn and Peterson, 1985; Newcombe, 1982; Voyer, Voyer and Bryden, 1995).

The study reported here is part of a larger one where gender differences in children’s depictions were not initially a focus of investigation. However once the drawings and paintings were collected and the processes of analysis had begun, distinct differences between the work of the boys and girls emerged that were enough to prompt the present study. Consequently the research question for this project was an open one: Are there any differences between the drawings of boys and girls across the 12 month period encompassing the last six months at an early childhood centre and the first six months of commencing school?

Theoretical framework

A combination of Gibson’s ecological theory of visual perception, and contemporary schema theory provided the interpretive framework for this cognitive analysis of children’s drawings.

Gibson (1950; 1979) analysed children’s drawings in terms of what the child actually chooses to attend to or self selects as being important in the ‘optic array.’ Those salient features that children select to draw and that re-occur in their drawings Gibson labelled as ‘invariants’. The word ‘selection’ is important here, denoting that the process is to a degree, voluntarily executed therefore it can be assumed that the resulting drawing will represent a collection of things that matter most to the drawer. As such this cognitive aspect of drawing could also be described as a subjective one.

Schema interpretations of cognition which are similar but not identical to Piaget’s notions of schemes in that they emphasise mental rather than behavioural internalisations, are also relevant to the cognitive focus of this study. Barret and Light (1976) argued that young children’s drawings tend to be generic, that is they are based on the use of a ‘genus’ to which the drawing topic belongs, rather than being the representation of a single identifying idea used in isolation. The notion of a genus (or genera) here is not unlike that in cognitive scheme theory, specifically cognitive scripts which describe an abstract network of understandings about an experience or event, including temporal as well as causal elements (Flavell, Miller and Miller, 2002; Nelson, 1986). Nutbrown (1999) also employs the notion of schema and scripts in her work on children’s drawing.

Cognitive scripts are considered to be foundational elements in the development of complex and abstract thought (Berk 2003), hence it is to be expected that they have a direct bearing on the thinking of preschoolers which would of course encompass their drawing, as well as other areas of imaginative play. The reason for this assumption is
twofold. Firstly there is a leap in children’s perceptual/analytical ability between the ages of four and eight years (Birch, and Lefford, 1967; Spitz and Borland, 1971) so one could expect that this would have implications for drawing development. Secondly there is a significant cognitive shift forward in children’s ability to reason and think during the same period (Nelson, 1998; Flavell et al. 2002). These changes would augment the use of scripts as memory networks to record events and experiences and in turn therefore, children’s schematic use of the pictorial invariants that constitute the ‘genera’ in their drawings. Given children’s transitional cognitive status at this age it was felt a collection of drawings from across the transition to school would enable a clearer understanding of the genera that children select as a basis for their drawings. This is of interest when looking at the drawings of both genders because the genera that are selected provide an encapsulation of those things most salient to the young drawer’s mind.

Methodology

Participants were 40 children, randomly selected from across two rural preschools and two rural childcare centres in three small, country towns (populations 5,000-10,000). The sub-sample for the present study was selected from a larger one investigating other aspects of children’s art, and contained ten children from each centre (equal male/female numbers). This provided a stratified sample, the mean age of which was 4.5 years. All children were commencing formal schooling the following year. Of the sub-sample of 40, all were born in Australia; ten were from culturally diverse backgrounds although they all spoke English fluently. Of these, seven were second generation Australian-Italians, two had Indian parents and one child had German parents.

In contrast to Boyatzis and Eades’ (1999) cross sectional study of drawing in preschoolers and school beginners, this study adopted a longitudinal approach, following the same children for a twelve month period. A weekly sample of children’s spontaneous drawings was collected across the four centres during the last six months of enrolment at an early childhood centre through to the first six months of school commencement. However both the early childhood teachers and parents collected a good deal more. For the purposes of this study only children’s drawings were used as it was not possible to include the total sample of art that had been collected. A total of 720 drawings (approx 18 per child) were used as the data for the research reported in this article.

Once the children commenced school, only home drawings were collected to minimise the inclusion of work sheets, colouring-in exercises and other formal adult controlled drawing activities. This ensured as far as possible that the children’s work continued to be spontaneously produced as it had been at their early childhood centres and thus was not influenced by adult expectations. To achieve this, the parents of the children in this study attended two training sessions in which the aims of the study, the role of drawing and painting in children’s development and the adult’s role were discussed. In both settings (early childhood centre and school) the children did not know their art work was being collected. This last procedure was an attempt to ensure the children’s
drawings were genuinely spontaneous and not contrived in any way and was supported by the parents as being a less intrusive way of collecting data.

A mixed mode method of data analysis was used. Glaser and Strauss’ (1967) notion of grounded theory guided the content analysis of the drawings and paintings. The three key elements of this procedure are theoretical sampling, constant comparative analysis and theoretical saturation. This procedure enabled the analysis to be undertaken as a continuing process and provided a rigorous framework for the identification of themes or categories in the children’s drawings. Consequently the coding and analysis of data were undertaken as the data were being collected over a period of twelve, monthly intervals. As similar codes were noted, categories were formed. Initially eight categories were identified but through a process of constant comparative analysis the categories were reduced to five. At the point where analysis and categorisation reached a plateau where no additional elements could be identified (Glaser and Strauss, 1967), theoretical saturation was reached.

While undertaking this qualitative analysis it became clear that complexity of drawing would be another prominent element of the study as changes were noted to have occurred in complexity across the transition to school. Complexity was analysed using quantitative methods (non-parametric statistics) and the criteria for this part of the analysis were taken from Gardiner’s visual arts scoring criteria (Krechevsky, 1994) used in Project Spectrum and was based on both Gardner’s theory of Multiple Intelligences and Feldman’s theory of non-universal cognition (Gardner, 1993; Feldman, 1980). The criteria best felt to exemplify complexity in drawing was in the category ‘Representation’ which included sequential levels ranging from random to purposeful to recognisable placements in the use of basic forms, colour, and spatial integration. Given the ordinal nature of this scoring system a two sample Mann Whitney U test was used which tested the difference in the median differences between boys and girls, both before and after school commencement.

**Results**

The research question was: Are there any differences between the drawings of boys and girls across the 12 month period encompassing the last six months at an early childhood centre and the first six months of commencing school? Using a mixed mode analysis of 720 drawings, gender differences were found in terms of the themes these rural children used, and gender differences were also found to be statistically significant regarding changing patterns in complexity.

**Qualitative Analysis**

Results of the constant comparative analysis revealed the following five categories that best describe the children’s drawing themes over a 12 month period.

1. Experimentation with drawing people (ranged from tadpole to stick figures to better developed figure representation). These figures ranged from free floating figures to grounded figures where other elements were also included (objects,
trees etc). This stayed a strong theme across the school transition for both groups.

2. House and garden scenes, often including one or several family members. This theme also remained across the school transition although after school commencement girls predominantly used this genus. Individual elements in these scenes such as flowers, fences and people became increasingly balanced and symmetrically placed during the second six months of the study. Figures 1 and 2 below provide examples of both these categories.

**Figure 1.** Chrissie drew her family four months into school (at 5.1 years).

![Figure 1](image1)

**Figure 2.** Stephanie (5.3 years, 4 months into school) drew Annie’s family from her favourite story.

![Figure 2](image2)
3. Once children started school the above two categories still appeared but now often with letters and numbers randomly positioned around the border of the page or throughout the actual drawing. These were seemingly unrelated to the drawing itself. This was common in the drawings of both girls and boys. Figure 3 illustrates this.

**Figure 3.** Montanna (4.9 years, 6 months into school), drew this family depiction with letters. An adult later wrote the family’s names.

4. Vehicles. During their last six months at preschool, both boys and girls sometimes drew simple outlines of vehicles where wheels were often the main or only detail. Interestingly, during the first six months of school commencement, drawings in this category became very detailed and thus more complex, and were produced quite often. Although complexity was present in terms of detail however, the designs were not always symmetrical or balanced as the drawings in Category 2 tended to be, although this did increase across the six months at school. Of greatest interest is the fact that it was the boys who mostly depicted themes of this kind once they commenced school. Examples of Category 4 drawings can be seen in Figure 4 and Figure 5 following:
**Figure 4.** Lachlan (5 years, 6 months into school) has drawn a fire engine racing to a theatre.

![Fire Engine Drawing](image)

**Figure 5.** Oliver (4.7 years, 4 months into school) drew a ‘construction site vehicle’

![Construction Site Drawing](image)

5. Depictions of interesting life events (a football match, rounding up sheep with a grandparent, on the beach during holidays etc). Drawings in this category were again spatially complex containing many elements, and were not always symmetrically balanced. After school commencement it was again the group of boys who mostly explored this theme while the girls’ drawings tended to typify Categories 1, 2 and 3. Examples of Category 5 can be seen in Figures 6, 7 and 8 below.
Figure 6. Blake (5.9 years, 3 months into school) drew about ‘our play in the shearing shed’ (he and his brothers had put on a play for the shearers).

Figure 7. Mitchell (4.9 years, 4th month into school) drew ‘Pop checking on the sheep.’
Figure 8. William (5.1 years, 5th month at school) drew ‘At the football in Sydney.’

Quantitative Analysis

Results of the Mann Whitney U test regarding the levels of complexity in three key areas as identified in Project Spectrum (Krechevsky, 1994), can be found in Tables 1 and 2 following.

Table 1. Complexity of drawings prior to school commencement: a gender comparison

<table>
<thead>
<tr>
<th>Representation</th>
<th>Median values (girls)</th>
<th>Median values (boys)</th>
<th>P value (Mann Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic forms</td>
<td>1.430</td>
<td>0.675</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>Colour</td>
<td>1.900</td>
<td>1.000</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>Spatial integration</td>
<td>1.100</td>
<td>0.360</td>
<td>P&lt;.05</td>
</tr>
</tbody>
</table>

Table 1 results indicate that during the last half of the year in an early childhood centre, girls’ use of colour in the shift towards representational depictions was significantly higher (levels in this category were: 1 - random use of colour with no relation to objects portrayed, 2 - multiple colours used with some representation of true colour, and 3 - multiple colours used and deliberately (realistically) placed, few/no unrealistic colours). Significant differences in the girls’ drawings with regard to basic forms and representational detail also existed, thus it could be said that the girls’ drawings prior to commencing school were more complex than those of the boys.
However once the children commenced school, a reversal of this gender difference appeared with the boys’ abilities at depicting basic forms and representational detail becoming significantly stronger albeit not as symmetrical, and with the difference in use of colour between the two groups no longer being significant, as Table 2 below shows. This is in contrast to Tuman’s (1999) results where girls used colour in more complex ways throughout Grades One to Five.

**Table 2.** Complexity of drawings following school commencement: a gender comparison

<table>
<thead>
<tr>
<th>Representation</th>
<th>Median values (girls)</th>
<th>Median values (boys)</th>
<th>P value (Mann Whitney U Test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic forms</td>
<td>1.390</td>
<td>2.650</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>Colour</td>
<td>0.450</td>
<td>0.657</td>
<td>p&gt;.05 (ns)</td>
</tr>
<tr>
<td>Spatial integration</td>
<td>0.650</td>
<td>1.465</td>
<td>p&lt;.05</td>
</tr>
</tbody>
</table>

**Discussion**

Once school commenced, the boys’ drawings assumed more of a narrative style in that they recorded their life experiences outside both school and their home (i.e. they did not include many static, typical house and garden scenes). The scenes they drew were more complex spatially and in greater detail than the girls’ drawings although not always as symmetrical. Casual discussion about the drawings took place with the children after the drawings had been completed, but only if initiated by the children. Such comments were noted by the adult present. All the boys chatted about their drawings. The descriptions they gave nearly always involved telling about an event that was happening and included a sequence of actions, very much along the lines of a cognitive script. (Example: in relation to Figure 7 “That’s Pop in the tractor – see the bicentennial flag on it? He’s still got it on!! Pop’s moving the last few sheep in to the gate. I’m waiting on the other side of the gate – but you can’t see me here – and Snap and Bingo” (sheep dogs) “are just moving around here. Only problem is the gate is coming in and I’m not sure which way the sheep are gonna run now.”)

In comparison to this, the girls tended to continue using themes of people and houses and present a ‘one-off’ or static view of house and garden scenes (Category 2) rather than a narrative view. As with the previous example of Mitchell’s drawing, this was usually endorsed by their comments. Fifteen of the sample of 20 girls chose to chat about what they had drawn. (Example: Figure 2. “This is Annie’s family.” (Stephanie’s drawing was about a book called *Annie’s Dream.*) “This is her mother, this is the sister and that’s the neighbour Pat. That’s the house.”) The girls’ drawings often reflected characters or events in the stories they were using at school and less frequently the stories they were read at home so there was a constant renewal of this particular source of inspiration. Even so, most of these drawings did not reflect a range of themes. Thus the invariants that the girls adopted contrasted with those the boys were internalising and emphasised a more domestic or home related perspective that did not often reflect...
the genera of the external world they were living in, especially with regard to rural themes and recent family events.

Of the five categories noted in the qualitative analysis, Category (1) experimentation with people and Category (2) houses and garden scenes, were found to be consistent with those identified previously in the literature (Botyatzis & Albertini, 2000; Cox, 1993). Category 3 which encompasses these two but includes scatterings of letters and numbers throughout and/or around the drawing has been noted in the research literature but still does not receive much in-depth attention. It is usually addressed in relation to the emergent reader’s desire to provide a meaningful explanation of the drawing (Kamler and Kilarr, 1983; O’Brien and Comber, 2000; Whitehead, 1999). However this does not correspond to what was generally observed in this study where the inclusion of random letters and numbers was seen by the adults present to be purely serendipitous because it was not accompanied by attempts from the drawers to explain their drawings. Consequently it was interpreted simply as a reflection of the school child’s new found interest in writing, to the extent that both forms of graphics were sometimes spontaneously integrated.

While the genera of vehicles and life experiences (Categories 4 and 5) in children’s art have been reported by previous researchers (Boytazis & Eades, 1999; Tuman, 1999), there has not been much systematic investigation using a rural sample or a longitudinal one covering the period of centre–to-school transition. In the present study where such a sample was used, the last two categories, (4) vehicles, and (5) depictions of interesting life events were explored more often by the boys once school commenced. As discussed in the results of the quantitative analyses, their drawings at school were significantly more complex in terms of details but not as well organised symmetrically, which was in contrast to the girls’ drawings. Tuman (1999) found similar results in her study of (non rural) boys across the primary school years. “In general boys’ action packed, asymmetrical compositions contrasted dynamically to girls’ figure centred symmetrical images” (1999; p.41). Interestingly, the same gender pattern in terms of themes and preferences has been found in relation to children’s early writing (Gilbert, 1998; Swann, 1992).

Generally the numbers of drawings boys did also increased considerably after they started school. These drawings reflected meaningful invariants of the boys’ lives, and were mostly of a rural nature (e.g. harvesting, swimming in the dam, moving sheep with dad, etc). As noted in the results section of this article, one of the strongest comparisons between the two groups is that following the school transition, boys became far more outward looking in their use of genera. As a whole, girls’ drawings depicted various domestic themes, often around the stories they were being read at the time and were not necessarily reflective of their rural environment. The interesting question this raises is why each gender tended to select different genera to base their drawings on, and why there was little change in those used by the girls across the twelve month period which included the transition to school?

One explanation could be that the girls in this sample spent more time indoors than playing outside, and had limited family experiences to draw on. However upon
checking with their parents it was revealed that many of them did spend a lot of time outdoors, a number of them lived on farms and a large number of them had older brothers and sisters with whom they spent a lot of time outside, usually playing sport or other games.

Another explanation is that the girls’ tendency to use story-based domestic themes could well reflect what has been recognised previously as their propensity to fare better in relation to linguistic development and literacy (Berk, 2003; McDevitt and Ormrod, 2004). If so then it could be expected that they could prefer books as a leisure time or play activity and would therefore be exposed to them more frequently. This greater exposure would in turn be more likely to provide key themes for their play, which of course includes drawing. (However one could argue that even so, children’s stories are not always centred round domestic themes.)

Further reading of the child development literature regularly identifies other preference patterns. Girls’ preferences for imaginative and dramatic play and their higher performance at fine muscle activities are usually noted as are boys’ preferences for more active, large muscle play at both preschool and school levels (for example Clarke, 1999; Johnson, Christie, and Yawkey, 1999). If boys tend to develop more slowly in the area of literacy and fine motor skills and display a preference for large muscle activity as the literature shows, it is arguable that they may be less likely to spend a lot of time with books and more likely to prefer physically active play which would provide them with the genera for their drawings. Upon this basis it might also be argued that boys’ preferences for physical activity could contribute to their more advanced spatial awareness as was indicated in this study by the increased complexity of the boys’ drawings in the first six months of school. Further support for this argument comes from research in the area of cognitive psychology that reveals males perform better on tasks of a visual spatial nature, as discussed earlier in the literature review of this article. However more research would be required to test such a hypothesis as the interplay of maturational and environmental influences are complex. Nonetheless gender differences such as those found in this study are still surprising given all the attention that has been paid to gender stereotyping over the last few decades.

There may be yet another reason for the differences between the girls’ and boys’ drawings in this study that relates to the socio cultural contexts these children are growing up in. Current research in rural sociology clearly shows that even in today’s world, rural communities are still known to hold more conservative values and this could be reflected in the children’s choices and preferences (Luloff and Krannich, 2002) that are in turn, a result of the socio cultural contexts they are growing up in (neighbourhood, suburb, community etc), regardless of individual family values. If so, this clearly reflects the interactional nature of these contexts as a form of scaffolding for growth and development, which would of course include the development of children’s drawings and thinking.

The gender based preferences, or genera, identified in this study of rural children reflect a mixture of both social contexts and maturational preferences. Nonetheless this does not mean that schools have no role to play in redressing what could be described as an
imbalance. Broadening children’s exposure to and awareness of topics, themes and imagery becomes a more meaningful practice when children are encouraged to discuss these things. Developing self knowledge about the issues and themes in story books and in other kinds of media is important in order to create a metacognitive awareness of what one’s preferences actually are and how they can be influenced. Moreover as this study - and many others in the general area of developmental psychology - shows, it could well be critical to have these discussions with the very young child as much as it is with a child reaching the middle or end of the primary school years. If rural communities do tend to hold more conservative values as Luloff and Krannich’s work suggests, then the need for this is indeed critical in country schools, particularly in relation to girls. The socio-cultural scaffolding that surrounds us contains many different kinds of visual literacies that will feed into whatever we produce in life, the question therefore needs to be, how can we empower children such that a balance is maintained? It is as beneficial for girls to actively explore spatial complexity and diverse themes in their drawings as it is for boys to consolidate domestic thematic depictions and investigate symmetry.

To the adult mind the results of this study also raise a question about what drawing means to the young child. Is it something children do for emotional reasons, to deliberately express an idea, to relax, to encapsulate a memorable event, or to extract the salient aspects of something? Is it a form of play, a form of pre writing development, an arena for practising skills or a way to extend creative thinking? Whatever the answer to this question, gender is an issue.

References


**ABOUT THE AUTHOR**

Beverley Lambert is a Senior Lecturer in early childhood education and Associate Head, School of Education (CSU). Her main area of research interest is cognition, specifically reasoning and problem solving. Beverley’s current work in the area of children’s drawings resulted from her interest in domain specific cognition, especially schema theory. Further publications in this area are continuing.