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Play as a complex landscape: imagination and symbolic meanings

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Introduction

This chapter explores data gathered for the first phase of an ethnographic study for doctoral research. The main focus is on ways children explore meanings though making 'signs' or mental tools within their play, signs that include 'visual, textual and artefactual' practices (Pahl, 2002: 145) that are the precursor of symbolic languages such as writing (Vygotsky, 1978). Vygotsky recognised that 'Superficially, play bears little resemblance to the complex, mediated form of thought and volition it leads to. Only a profound internal analysis makes it possible to determine its course of change and its role in development' (1978: 104). In the current study empirical data is drawn from observations of children age 3-4 in two nursery schools in England. Analysis of their imaginative play has uncovered their *complex meanings and communicative modes*.

The first section explores the theoretical framing of the study. The second part of explores the practice of making observations of children's self-initiated play, and what 'readings' of the data are possible in terms of identifying children's meaning-making and their visual, textual and artefactual practices. The findings indicate that observation and analysis of play by practitioners can lead to a deepening of professional knowledge and pedagogy, suggesting that research and critical reflection play a significant role in professional development.

The Research

Background

The current study builds on previous research into young children's graphicacy in mathematics (Carruthers & Worthington, 2005; 2006). My aim is to explore the theory 'that make-believe play, drawing and writing can be viewed as different moments in an essentially unified process' (Vygotsky, 1978: 116) and to trace *children's mathematical graphics* from their emergence in imaginative play. Young children employ a range of means and use various media and resources to externally represent and communicate their internal, mental representations by creating external 'signs': their signs are semiotic resources that have potential to signify meanings. The terms 'signs' and 'symbols' are often interchanged: symbolic languages such as written mathematics include symbols such as '+' and numerals,

and 'texts' are generally understood to refer to written texts: however, in the literature on children's symbolic play, 'signs' and 'texts' are also used to refer to the meaning potential of models; language; gestures; arrangements other resources and graphical representations. A direct relationship exists between children's ability to make meanings in play and to use marks and symbols to signify meanings: just as physical tools enable us to solve physical problems, semiotic activities result in *symbolic tools* that can be used flexibly to resolve particular mental problems.

Studies of meaning-making (semiotics) has revealed the social significance of meanings and research into the development of young children's meaning-making and underscores the complexity of their symbolic actions and representations. It suggests that children's meanings may not always be readily available to adults, especially if there is little time to observe and understand children's imaginative play and emphasises the need for 'profound internal analysis' of children's imaginative play.

Imaginative play

'The concept of 'what might be' – being able to move in perception and thought away from the concrete given… and ultimately, to the purest realm of fantasy – is a touchstone of that miracle of human experience, the imagination' (Singer and Singer, 1990: 19).

Whilst there is no consensus about a definition of play in early childhood education, in Vygotsky's view it is 'Action in the imagination sphere, in an imaginary situation… all appear in play and make it the highest level of pre-school development', (1978: 102/103). Van Oers has observed that the word 'imagination' originates from the Latin *imago*, meaning 'to form an image' or 'to represent' and 'is at the roots of human thinking' (2005: 5).

The role of play was seen by Vygotsky 'as a leading factor in development': he emphasised connections between behaviours in play that are 'accomplished by movement in the field of meaning – which subordinates all real objects and actions to itself. Behaviour is not bound by the immediate perceptual field. This movement in the field of meaning predominates in play', (1978: 101). However, van Oers asserts that it is 'the kind of agency that the child can appropriate in the context of playful activities'. Imagination 'is a basic element for individual empowerment within play and for the development of critical cultural agency' that promotes development (2005: 7/8). Vygotsky argued that 'each step' supports the role of imagination in cognition, resulting in cognition becoming 'more complex and richer' (1987: 349). 'Children continuously weave in and out of play, transferring 'real world' knowledge, skills and understandings form other areas of their lives. Play is also rich with meanings that children create for themselves', (Wood and Atfield, 2005: 7).

Research on role play reveals a range of different purposes and outcomes for children's learning and development. For example, Broadhead (2004) focuses on

supporting social skills and cooperation through play and acknowledges the benefits of open-ended role play (2004, 130). Rogers and Evans (2008) provide similar perspectives enlarging on the children's views and providing methodologies for studying this aspect of play. Role play also enables children to explore narratives: for example, through her sensitive observations and reflections Gussin-Paley shows that as play scenarios children's own narratives can support psychological, intellectual and social development (2005).

Vygotsky's research into children's symbolic play explored some of the ways in which they make meanings. In more recent years research by Kress (e.g. 1997) into children's semiotic explorations has shown the significance of 'multi-modal play with many materials and resources and led to Pahl describing such play in which children's meanings are embodied in visual media such as drawings; written texts and arrangements of items and the use of resources; models and cut-outs as 'visual, textual and artefactual' practices' (2002: 145). Kress views signs as 'always transparent to their makers …' and, at the same time, 'more or less opaque to readers':' (1993: 180). This is especially pertinent in relation to children's self-initiated sign-making with found objects, models, cut-outs and drawings in play, in which the child selects 'those characteristics which he regards as most important for him in the thing he wants to represent… The relation which united form and meaning is one of analogy… (Kress, 1997: 93).

Methodological approaches and research methods

The current research aims to explore Vygotsky's theory 'that make-believe play, drawing and writing can be viewed as different moments in an essentially unified process' (Vygotsky, 1978: 116), and to trace children's symbolic representations from their emergence in imaginative play. In this study, *imaginative* play is interpreted from a *multi-modal* perspective (Kress, 1997) and includes role play; junk-models and cut-outs; drawings and other forms of graphicacy. The first phase of this research focuses on young children's imaginative play and began during the year in which the children were 3- and 4-year olds, in their final year in two nursery settings. Both nursery settings are in the south-west of England: one is a maintained nursery located within an inner-city Children's Centre and the other is a small private nursery in a rural area. The nursery schools provide a 'play-based' curriculum that spans the years from birth to 5 years of age (DfES, 2007).

The research draws on ethnographic theory and involves immersion in the field of study and observation in order to 'construct pictures of that groups' cultural and perceptual world'. It is applied to a wide range of social contexts such as classrooms and depends on 'participant observation, triangulation, interviewing and qualitative analysis – essentially, interpretation – in order to arrive at an understanding of the observed patterns of behaviour engaged in by those being studied' (Burns, 2009: 394/95).Since ethnographic research concerns people, an important aspect of the research are ethical considerations which include gaining informed consent of

everyone involved; ensuring confidentiality and being open with the findings of the research.

The intention of the doctoral study is to explore the relationship between meaning-making in play and the emergence of children's mathematical graphics: it will also explore any socio-cultural influences on the children's representations and how these contribute to their developing semiotic modes. This chapter draws on some of the data collected for the first phase of this research and was collected from a total of 16 children, of whom 12 were boys and 4 were girls. For the purposes of this chapter I have analysed some of the data using categories of *functions of the imagination* (van Oers, 2005).

The qualitative data is drawn largely from written observations and photographs of children's imaginative play and graphicacy. Observations were made both by the children's nursery teachers and practitioners and by the researcher to ensure reliability and were discussed collaboratively. The observations are supported by other 'rich data', including questionnaires, interviews and regular discussions with the nursery teachers and practitioners. The teachers and practitioners were partners in the research and during the year were given several papers on play which, with the observations, became a focus of collaborative discussions (teachers, practitioners and researcher).

Understanding imaginative play

Van Oers proposes that play is 'a *process of continuous recontextualization*' through which children develop towards more abstract forms of activities (1998: 141). During a research programme investigating children's play, he acknowledged that reflections and discussions of their data 'showed that the notion of imagination was more complex than it looked at the beginning'. The researchers 'encountered many new and unexpected productions of children that could be related to creativity' identifying 'emergent qualities of the phenomenon of imagination in the play activities of young children', (2005; 8/5) leading the researchers to identify two categories of 'funtions of imagination' that were based on their empirical research.

Using the examples gathered for the current study, a systematic analysis of observations of imaginative play episodes was undertaken using van Oers *functions of the imagination* (2005)*.* However, when discussing and assigning examples to van Oers's two original categories it became clear that some of my observations did not fit neatly into either of the original categories and suggested the creation of a new category. Following further discussion with an independent researcher and with the teachers I originated a third category, *imagination as an act of dynamic change* enabling me to extend the existing research. In order to ensuring inter-rater reliability I invited the independent researcher to also assess examples. A small percentage of observations (4%) were rejected, either because they were ambiguous or because we failed to reach agreement. The characteristics of these three categories are described below and listed in the appendix.

Functions of the imagination

'Conceptualising imagination…' and 'trying to understand the novelties in children's activities or verbal narratives ', van Oers found the 'products' of imaginative play (i.e. images or 'signs') served particular functions in the play of children 4 – 7 years, The two categories of *functions of the imagination* (2005: 8) are described in the following section and their characteristics are set out in the appendix.

Imagination as etcetera-act

This *function'* serves the goal of abbreviating an ongoing sequence of actions… referring to the invisible, by suggesting – with the help of some symbolic means – that a given series or rule can be continued' (van Oers, 2005: 8). Van Oers provides the following example to illustrate this category: six-year old Inge explained her drawing of a boat on the sea, adding "I did not draw all the fishes, you know; there are also two traffic lights, a red and a green one. The fishes also see the crosses". Van Oers explains that Inge 'combined 'different elements from her everyday experience into a new configuration… illustrating Vygotsky's combinatorial view on imagination' (2005: 8/9).

Analysing imaginative play episodes in the current study revealed several episodes of *imagination as etcetera-act*. However, since they are from children younger than those described by van Oers, they reveal aspects of children's abstract thought that emerges at an earlier point in their development. For example, 3-year old Joshua made scribble-marks on paper with a green pen and making several cuts across it remarked: 'doggie' (figure 1): it appeared he intended his cut-out to signify its head and body; and the tiny piece its tail. This example includes sufficient visual information for Joshua to communicate his intention, whilst the lack of detail (face, ears and legs) can be said to 'refer to the invisible' and his cut-out may have allowed him to make a more explicit sign than a drawing.

Figure 1: *Joshua's 'doggie'*

Hamzah was drawing in the graphics area: after a while he turned to the adult observing nearby, explaining he had drawn 'cars'. Later that he added two black dots beneath the row of brown dots (on the left) and finally drew a rectangular outline with 'wheels' and a 'driving wheel' at the foot of the page (figure 2). Although Harun only spoke one word to communicate his meaning, we can see that he had captured what was to him, the most significant feature of cars, combined in an abbreviated representation and allowing him to communicate his symbolic intention. Kress includes a very similar example of a 3 year old's interest as 'condensed' meaning: 'For him a car, clearly, was first and foremost defined by the criterial characteristic of having wheels… representing these features of *car,* namely wheels, or 'wheelness', (1997: 11).

Figure 2: *Hamzah's 'cars'*

It can sometimes be difficult for adults to understand a young child's intention when they represent their ideas. Nathan chose an envelope and screwing up some purple and green paper he tucked the pieces beneath its flap and secured it with masking tape. He explained he'd made 'an astronaut' and announcing 'Blast off' lifted it above his head to make it 'fly to the moon'. He showed how, by lifting the masking tape the 'astronaut' could get out of his space-suit (the envelope). The materials Nathan had chosen allowed him to communicate his intended meanings and we can see that Nathan has combined some elements from his every-day experience of dressing and undressing, to signify new meaning. The lack of visual details in his astronaut was balanced by his actions and words and was sufficient to ensure that others understood his meaning.

Figure 3: *Nathan's astronaut*

These examples suggest that young children's images are personal expressions of internal (mental) representations, which, through external representation allows then to communicate personal meanings to others. Their symbolic tools have an economy that captures some of the essential elements, here for example, of a dog; of cars or an astronaut in his suit. Rather than the child's words illuminating the invisible, we are sometimes left to continue the children's own 'rules' ourselves.

Imagination as an act of generating alternatives
In this *function* children make 'alternative representations of objects, situations and actions. It consists of how the world *could* be… mental constructs, which picture the world differently from how it is commonly seen' (van Oers, 2005: 9). Van Oers proposes that Vygotsky's description of a child substituting a stick for a horse is an example of this *function,* developing 'out of social interaction and exteriorization of the positions of different people, eventually resulting in divergent thinking' (2005: 9).

Playing with several friends, Sophie hid various artefacts in a box of hay they found. Felicity held out a toy wheel, naming it as a 'chocolate cake' and others followed her lead, naming various cylindrical objects as 'chocolate' and 'strawberry' cakes. Sophie suggested they have a picnic and handed out wooden blocks as 'ice-creams' and gave a large sea shell 'to eat' to an adult nearby. Lifting the block to her mouth the adult paused, asking if she should eat it, adding 'It's very rough and might hurt my mouth'. Sophie hesitated, watching warily as the adult put her finger inside the shell and licked it, then smiling remarked it tasted 'delicious'. It was clear that Sophie was anxious to see if the adult understood the 'rules' implied in their spontaneous game: would she spoil it by saying that she couldn't eat a sea-shell? Did she understand that for that moment it was important that all the players in the game shared the same 'rule' - that the objects that they employed signified food? The players in the game needed to have a shared understanding of the rules and meanings in this play: the adult's action (pretending to scoop out some ice-cream and eat it); her use of language; her tone of voice and smile as she commented 'delicious' allowed

meanings to be negotiated, confirming that the adult understood and was able to share in their pretence and sustain play. Finally, as if to affirm acceptance of the adult as a full player in their game, Omar reached for the shell and said 'Let's have some!'
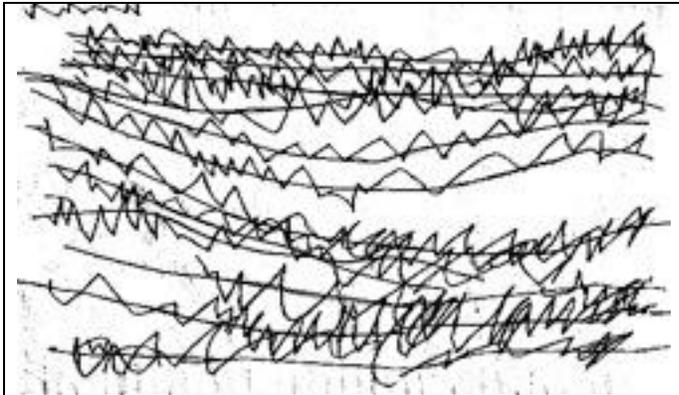

Figure 4: *Nathan's writing*

In the next example Nathan used one sign to explore two different meanings. Nathan's mum had made a 'caterpillar'-shaped birthday cake for his recent 4th birthday. Nathan drew a horizontal line with zigzags as his 'birthday cake' *(not shown)* and turning his paper over, repeated the same lines and zigzags, now referring to them as 'writing' (figure 4). For his representation of his cake, the zigzag appeared to suggest the shape (and possibly the movement?) of a caterpillar. Duplicating the same marks Nathan then used them to represent something of the appearance of writing, or perhaps the movement of a hand as someone writes. Exploring these dual meanings through one sign also enabled him to further explore the flexibility of signs and the way in which there needs to be shared understanding in order to communicate our meanings to others. Pahl describes a child exploring a range of meanings as she transforms her model:

> ''Her mind was 'internally 'gluing together' different concepts … The things that are linked in the mind have become linked in the material world…using one idea the children are driven by internal links within them to explore other possibilities. This reflects both the children's inner thoughts and their interest in how the object looks… The meanings change and grow inside their minds... These meanings then develop as they move from one concept to another' (1999b: 20 – 21).

Figure 5: *Finley's whale*

Working with young children can sometimes challenge our understanding of their symbolic representations and it is important that we tune into the child's personal meanings and as they create signs and tools, children need to communicate their meaning in order to establish shared rules, meanings and understandings. They have to 'make sense' in the context of their imaginative worlds although this may not always make sense to an outsider who does not have access to shared and negotiated meanings.

Figure 5 shows Finley's representation using junk materials. Finley explained this was 'the sea and a whale' and that the clear plastic was 'rubbish in the sea' that will injure creatures living there. Staff at his nursery knew that Finley had a keen interest in animals and often talked about them: the previous week the television had featured news about floating 'islands of plastic' in the Pacific and it is possible that he may have heard adults discussing this.

Imagination as an act of dynamic change function
As we observed the children's play a number of examples revealed an aspect of imagination that was significantly different from the *two functions of imagination* above. The children's representations embodied complex ideas and actions that placed the child or children as central players, able to exert a direct influence on what happens next in their play and led to an additional 'function', *imagination as an act of dynamic change*.

The data showed that boys particularly drew on their love of adventure and gadgets. Their experiences and interest in new media and technologies such as televisions and remote controls; computers; game consoles and electronic toys combined with popular culture and 'super-heroes' such as 'Nintendo'; 'Power Rangers' and American wrestling, which exert strong influences on children's play (Marsh, 2006). The children assigned specific powers to the signs they created, using these to 'operate' their imagined technologies to effect change.

Mason was pressing the buttons on a real calculator, yelling excitedly, 'Yeah! Fighting games! Video games!' He reached for a small spiral-bound notebook and made marks on the first page before tearing it off; 'this is a *different* calculator with computer games on!' Mason's interest triggered other play episodes of 'paper calculators' that involved several other children over an extensive period. Alfie made marks on a notepad saying 'Lots of fighting!' and a week later Mason announced 'I've made a calculator. I'm putting Batman on it – black and green'. The boys involved in this play returned to it many times over a period of two terms and during this time there was little attempt to write numerals (although several of them including Mason, had done so for other purposes during this period). Many of the children made rapid marks, either drawing 'buttons' on their calculator or (as here) using scribble-marks,' and combining these graphic representations with talk. Exploring layers of meanings over an extended period 'allowed the children's understanding to evolve over time.

Figure 6: *Mason's paper calculator*

A later example from Mason showed that he was now a champion of this '21st century' play. Having finished his work, he decided to draw at the writing table. Next to him Leola was making vertical snips around a folded piece of yellow card: Mason watched Leola and finding a piece of yellow card, folded and snipped similar cuts around its perimeter. Next he wrote letters and numerals, reading 'sk'; '7146p10' and lifting it to his face explained it was 'a spy gadget… 'sk' is 'to keep the password safe. To switch it on you have to say '714bp10' '. I asked if there was a way to switch his 'spy gadget' off and picking it up he replied excitedly 'Yeah! You have to read it backwards!' promptly reading, '10 pb6417'. Nathan had invested special technological powers to his gadget and, drawing on his considerable knowledge of passwords and controls, includes these in his imaginative play.

Figure 7: *Mason's 'spy gadget'*

These play episodes suggest 'a construct of fantasy (that) may represent something substantially new… once it has been externally embodied, that is, has been given material form, this crystallized imagination that has become an object begins to actually exist in the real world, to affect other things' (Vygotsky, 2004: 20/21). The observations reveal how young children's understanding of new media and technologies populate their imaginative play and suggest that communication (of the function of their technologies) is essential to establishing shared meanings and actions in their play.

Discussion

Analysis of these examples of imaginative play has uncovered some of their complex meanings and communicative modes as they created, adapted or co-constructed signs to fulfill specific semiotic needs. Brief verbal explanations could be understood in the context of their sign-making, for example, cutting his paper allowing Joshua to arrange the pieces into a new arrangement to communicate his meaning. In other contexts (as in Sophie's picnic and the paper calculators') children made greater use of talk to negotiate and co-constructed meanings about their symbolic tools. Sometimes open-ended junk materials provided the most satisfactory mode to communicate meaning as in Nathan's astronaut. In contrast, marks made with pens (for drawing and writing) offered the most appropriate media for Harun and Nathan to signify their meanings and revealed the emergence of graphical symbols that will develop into symbolic written languages such as writing and written mathematics.

The two categories developed by van Oers provided a valuable tool to help understand the 'potentials of imagination' and led to a new *function of imagination.* Van Oers proposes that the 'products' of their semiotic activities, gradually evolve 'in close relationship to the function it serves *in different contexts'* (2005: 9: italics added to the original) and I would argue that written mathematics requires children to use many of the same *functions of imagination* that have been identified here. These related functions include the ability to 'refer to the invisible – with the help of some

symbolic means – that a given series or rule can be continued' and to 'generate alternative representations of objects, situations and actions' (van Oers, 2005). The third category deals with operating signs to effect change, a vital skill that is at the heart of understanding calculations. It seems possible therefore, that imagination underpins children's understanding of the abstract symbolic language of mathematics in ways that we are only beginning to understand, supporting the gradual evolution of *children's mathematical graphics*.

Implications for pedagogy

The observations revealed how important it is for young children to make personal decisions and choices about the media and 'modes' they use to explore, represent and communicate personal meanings. Play is not straightforward and children's thinking and the complexity of their ideas and signs deserve closer attention if we are to understand and truly value their meaning making. The data has revealed the importance of understanding children's symbolic communicative competences. It has provided an insight into their early meaning-making as symbolic written languages emerge, revealed through a 'profound, internal analysis' which underscores the significance of imagination and highlights the relationship between adults' involvement and understanding and the power of imaginative play for making meanings in diverse contexts.

The examples explored in this study were gathered through teachers' and practitioners' observations of children's self-initiated play and showed that the pedagogical feature that appeared to contribute most to imaginative play was adults' focus on children's *meanings*. The implications for practice are that detailed observations of children's play provide an invaluable tool to support adults in their understanding of children's play and meaning-making. Collaborative discussions that focus on observations with colleagues will allow adults to make sense of the children's imaginative play and symbolic tools and representations that often reveal surprising insights into their thinking and understanding, and their ability to construct, co-construct and communicate complex and abstract ideas. Significantly the findings also imply that pedagogical support and interest on children's meaning-making and communicative practices also support their understanding of the written language of mathematics: this highlights the need for practitioners' collaborative discussions to embrace the full range of children's early semiotic representations and consider the inter-relationship between imagination and mathematics. Such analysis of imaginative play can enable practitioners to explore and appreciate this complexity and extend our understanding beyond the reductive lens of the curriculum goals of the Early Years Foundation Stage.

One of the key pedagogical challenges for practitioners is how they might use observations as a form of enquiry that allows them to understand and support this complexity through deepening understanding of their pedagogical roles and strategies. The findings from the research explored in this chapter suggests that paying close attention to children's semiotic activities and co-construction of events

and meanings in children's imaginative play can support practitioners in gaining greater insights of play and the beginnings of symbolic languages.

Associated reflection and discussion points and related research tasks

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Enquiry into observations of imaginative play: deepening understanding through collaborative dialogue

- With colleagues, collect examples of imaginative from your own settings to discuss in relation to children's and meaning-making and symbolic representations

- Using the *functions of the imagination* explored in this chapter, analyse your observations. How much has this added to your understanding of the potentials of imaginative play for their meaning-making?

- Compare your observations with colleagues and discuss their potential for supporting assessment.

Appendix

Table 1: characteristics of 'functions of the imagination' (van Oers, 2005 & Worthington, 2009)

Category:	Indicators / characteristics:
Imagination as etcetera-act	- Refers to the invisible - Suggests that – with the help of some symbolic means – that a given series or rule can be continued - Combines different elements from every day experience into a new configuration - Abbreviates an on-going sequence of events
Imagination as an act of generating alternatives	- Making alternative representations of objects, situations and actions - Picturing how the world *could* be - Using an object to signify something else - Using common elements from their environments that were part of a pervious experience

Imagination as an act of dynamic change	- Representations embody complex ideas and actions that place the child as a central player - combines elements from their experience - reflects interest in new media and technologies - child assign special powers to their imaginary technologies, 'operating' their signs to effect change

Texts given to teachers involved in the research:

Kress, G. (1997) *Before Writing: Re-thinking the Paths to Literacy',* London: Routledge.

Pahl, K. (1999a) 'Making models as a communicative practice – observing meaning making in a nursery', *Reading,* November, 1999.

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