

EXPLORING THE NEED TO MEAN:
a multimodal analysis of a child's use of semiotic
resources in the mediation of symbolic meanings

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Abstract

This study is concerned with social semiotic theories of learning and literacy with respect to the development of understandings about the purpose, nature and interpretation of semiotic objects to which children are introduced when very young, and which retain long term educational significance. The focus of the study is on the multimodal nature of children's activity around such texts. A high level of independent control over the interpretative process and the process of learning itself is demonstrated. The hypothesis that this involves an epistemological disposition, a need to mean, underlies the analysis in the thesis. The main data are derived from a video film of a twenty three month old child's interpretative activity as she shares a book, makes a mothers' day card and plays with sorting games in collaboration with her father. Three questions are addressed: the nature of the semiotic resources drawn on and the means by which these are mediated; the process of selecting and combining the resources in order to achieve interpretative effectiveness; and the relationship between resources and social environment. The research is conducted by means of an analysis of sections of the video tape. A structural semiotic analysis is applied to selected episodes, demonstrating the mediation of meaning through the modes of language, vocalisation, gesture, gaze and action; this is followed by a micro level description and discussion of the analysis. It is shown that semiotic resources are derived from material experiences, are multiply constituted, and are selected, combined and transformed to be used for symbolic purposes. The modes of mediation are also shown to be multiply constituted and used in refined, independent and motivated ways to place selected constituents of resources in the right place at the right time for the most effective achievement of meaning.

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Chapter 1

Introduction

My interest in the questions in this thesis arose from my observations of how children, young children in particular, approach the matter of engaging meaningfully with texts. These observations raise questions which have at their centre a concern with what appears to be a powerful motivation to interpret, a need to mean.

A number of personal and professional events were significant in engendering this interest, not in any road to Damascus sense, but rather as a set of evidence that connected at a particular point in time, and that led to a review of some of my assumptions about how children learn about texts, and indeed about how they learn. The relationship between teaching and learning in this process has always seemed a finely balanced one; it started increasingly to look to me as if teaching was more about providing what could be called appropriate semiotic opportunities, than telling children what to do in any instrumental sense; and learning was more about the active and motivated manipulation of the resources which these opportunities provided, than about simply following instructions.

One event which was influential in developing my thinking was my son, Krishan, when he was about six, telling me that I had taught him to read. This came as something of a surprise, since I had no recollection of having done so! In spite of considerable professional experience in this area, I had nevertheless assumed that learning to read was something which he would be taught to do at school, and indeed he duly went through an identifiable set of 'learning to read' activities and duly learnt to read at school, as I saw it. Having said this, I acknowledged that the opportunities which he had had at home to look at and play with books, pictures, toys, puzzles, objects and so on, would have had a positive influence in the sense, as I saw it at the time, of providing examples and experiences which would match well with those he was receiving at school. Nevertheless this was not the same as *teaching* him to read in an active, pragmatic sense; one of us must have misconceived the situation. Upon reflection over time though, I decided that the misconception might have lain with our different perceptions of what this activity was all about. His were rooted in the freshness and

immediacy of recent experience, indeed an ongoing recent experience; my memories of the process of learning to read were very distant and had also been considerably transformed by my professional engagement with the activity. Consequently his view could not be disregarded. It could be that the semiotic experiences that had been shared with him, provided not just some kind of background support, but resources which *he* could organise and use independently. From his point of view, these were key semiotic resources from which he was able to construe what reading meant, not just in the sense of being able to do it, but also, more importantly, in an epistemological sense. In other words, it is possible that he already had an awareness of the grounds of his own learning which were not the same as those which I was applying to the situation at the time. His comment about who had taught him to read could be seen as an articulation of such an understanding.

There are three other observations which I shall discuss briefly at this stage as a means of continuing a discussion of the issues which gave rise to the questions that are the focus for this thesis: the first was a cumulation of observations of different children in different classrooms over a period of about five years; the second is an earlier observation of my son engaging with a particular text; the third, taking place around four years after the second, is an observation of a social situation involving two adults and two children of which different kinds of engagement with texts was a part. Each of these situations is in one sense unremarkable and unsurprising in that they reflect common, day to day activities in which children are involved, either directly or indirectly, in engaging with texts; in another sense it is their very ordinariness, their apparent transparency, that makes them remarkable.

Observation the first

This first observation is in some senses a development of the ideas discussed in the previous event; an extension from the personal to the institutional. In my capacity as teacher and later as an advisory teacher, I had observed a widely differing range of literacy experiences which children encountered during the early years of schooling. In particular, the years in which I worked as an advisory teacher gave me a privileged overview of the kinds of literacy activities which went on in nurseries and primary classrooms in one part of the country. These years (1987-1995) spanned a period of

time which included the years immediately prior to the publication of the first English national curriculum proposals (National Curriculum Council 1988). The dominant model of teaching in the primary classrooms in the area of the country in which I worked was, at this time, that of planning activities based around a theme; the emphasis was on children learning by means of direct experience. It is not within the remit of this thesis to discuss the origins or purposes of this approach, but it needs to be mentioned in light of the effect it had on the approach to texts within many classrooms. In terms of literacy, the interpretation of this model by teachers and its translation into classroom practice varied enormously: at one extreme some teachers refused to plan any explicit textual activity, since they felt that texts in general and fiction in particular did not constitute direct experience; at the other extreme some teachers, as yet unrestricted by the demands of a national curriculum, incorporated the reading, discussion, writing and even dramatisation of texts into their curricula on a regular and extensive basis; however these were the exceptions rather than the rule. In most of the classrooms which I went into, the teacher did not consider that the discussion or analysis of texts had a very significant role to play in children's learning, if the omission of such activities from the curricula can be considered, at this informal and anecdotal level, as evidence. The exceptions to this were the use of books, often part of a 'scheme', as a means to practice 'reading skills', and the use of texts, which had a clear relationship to the topic, to extend the children's factual knowledge base or empathetic understanding. The anomaly which emerges from all of this is that, in spite of what in some cases were very different kinds of literacy curricula, and in some cases the lack of anything which could overtly be called a literacy curriculum, most children learned to read and write successfully.

Not only that, but in terms of the experiences of individual children across different schools and classes, there was sometimes a considerable mismatch between what they were taught and what they learned. In some classrooms, as has already been mentioned, literacy teaching was both varied and explicit; children were provided with a range of texts and early attempts at reading and writing were explicitly supported in a variety of ways; in other words, there was a sense in which literacy could be said to be actively taught. In some of the other classes I have mentioned however, a lot of literacy learning could be described as happening incidentally, in the sense that it was not actively

planned for. Even the kinds of activity which it was considered constituted the teaching of reading, primarily ‘hearing children read’, mainly involved children demonstrating to the teacher what they knew, rather than providing much in the way of overt instruction. In addition, across individual schools, and within schools and even individual classrooms, there was considerable variation in terms of the kinds of books which were used, how much time and support particular children were given and by whom. My intention here is not to pass judgement about the effectiveness of any particular approach, method or lack of it, but to use these observations to point to what, for me is the one constant and significant factor. If, as would seem to be the case, most children still succeeded as literacy learners in spite of this variability in teaching, then the key factor would appear to be the way in which the children had, at a symbolic level, used and transformed what could be termed semiotic resources (see also van Leeuwen 1998) in ways which had informed their own learning. To return to my previous discussion, if Krishan perceived the semiotic resources he had encountered at home as being significant in this process, then it is likely that other children did likewise; what is available at school is only part of the story. And if this is the case, given the inevitable variability of these resources across any group of children, it is also likely that any such set of resources would include things which do not, in an obvious pedagogical way, relate directly to literacy. Generally speaking then, these resources can be described as socio-cultural in nature. An interesting and significant development of this would be the questions which are then raised about the nature of these resources and the possibility of describing them more exactly.

I have left out of this personal and impressionistic description of the variation in classroom based literacy experiences, specific to a particular time and area, reference to many of the other issues it raises. There is a long tradition of looking at *difference* in the outcomes of language and literacy learning in relation to social experiences and class, ranging from the work of Bernstein and of Labov in the early seventies, through to current concerns to ameliorate differences in outcome by regularising teaching approaches through the framework of the National Literacy Strategy (Literacy Task Force 1998). What interested me, though, was the converse of this: not how to account for what children had failed to accomplish, but how to account for what they had succeeded in accomplishing in spite of such an inconsistent set of experiences both

socially and pedagogically. This then raises questions not just about semiotic resources but also semiotic processes; about how this apparently consistently independent learning is managed. Wells (1993) has used the term 'semiotic apprenticeship' to characterise such a process. In order for semiotic resources to be used successfully, learners have themselves to understand their use, to consider them suited to the achievement of their desired ends. In other words the user of the resource has to understand at some level the operation of the means by which they construct their own learning. As Wells says, 'the emphasis is on the learner and on the conditions that enable him or her to master the means for full participation in the activity of enquiry,'(p19). For Wells however, language is the most important resource; the difficulty with this view is that it suggests a hierarchy of resources; if language is the most important resource, it could be argued that it must therefore always assume a dominant position wherever it is present and irrespective of the nature of the semiotic activity. In the light of the second observation, where language is not the principal resource for much of the semiotic activity, this particular view would seem to be problematic.

Observation the second

When my son, Krishan, was just four, he was given a copy of one of Herge's 'Tintin' series. He would lie on the floor on his stomach, either in his bedroom or the sitting room, and spend long periods of time looking at this book with great concentration, and I observed his eyes move left to right across the page and from frame to frame, looking closely at the pictures. At the end of each double page he turned over and started the procedure again; in other words he appeared to be reading the book, except that he was not able at this stage to make out the writing. He moved onto other 'Tintin' books and approached them in the same manner. This activity was an almost entirely silent and independent one, with no adult intervention asked for or welcomed; this was an unusual state of affairs in his case since he tended to ask for adult involvement with most of his activities, and his previous experiences with books were almost entirely interactive ones.

At around this time, one of the television channels showed a series of Herge's 'Tintin' in an animated version which, not surprisingly, he made a habit of watching whenever possible. The cartoon frames were taken directly from the frames in the books, although

in reduced quantity and with a voice-over providing the dialogue which in the printed version is incorporated into speech bubbles. Often I watched with him, and I remember one of these occasions in particular: the story was one called 'The Black Island', and it included a sequence of frames where Tintin and his dog Snowy are chased into some rocky caves as the tide is coming in. During this sequence, Krishan provided a commentary in which he told me not just what was happening on the screen at that moment, but also what was about to happen in the next frame.

What these commentaries revealed, were not just a detailed knowledge of the drawings within each of these frames, but also an understanding of the story narrative carried by the pictures. He had extensive experience of looking at pictures in different kinds of books, and of the sequential structuring of a text through a series of frames with pictures and writing, through his experience of looking at comics; the Tintin stories were far more complicated however, in terms of a narrative picture sequence, than anything else he had seen. This led me to wonder just how exactly he had used the pictures to construct a relatively complex story; I also wondered, given that he had declined any interaction during his study of the books, whether the process of construction was mediated by language, or whether it was largely or entirely a visual process.

Processes involved in the first observations recur again here: the evidence suggests that Krishan's interpretative activity was independent, and necessitated the use and transformation of those semiotic resources whose function he understood, and whose usefulness in the interpretative process he could anticipate. However, since one of the resources, written language, was not available to him and he had chosen not use language in its spoken form, questions are raised about the place of language during this activity and the nature of the other resources used; however they were mediated, the visual resources within the book undoubtedly played a dominant part during Krishan's independent engagement with the text.

Observation the third

During the period of time when my son was young, I became very familiar with the type of social scenario in which adults try to maintain some kind of consistent conversation

whilst their children appear to make persistent sorties to hijack any attempt at continuity, either directly or indirectly. This results in a curious form of discourse in which multiple topics are developed and maintained simultaneously in order to incorporate the often conflicting linguistic needs of adults and children, and in which physical activity directed at the children (picking them up, administering to their physical needs, playing with them and so on) is often a central part.

Although such a scenario was a familiar one, I became aware of it anew at around the time I was embarking on this research. I was visiting a friend, Rose, who had two young daughters, Helen who was three and Rosie who was two. As Rose and I talked, Rosie got upset and angry with her sister, and Rose offered to read to her to restore the peace. Listening to Rose reading David McKee's *'Not Now Bernard'* to Rosie, it struck me how much of the ongoing social interaction in the room was either being carried on alongside this reading or was incorporating and transforming elements of its narrative. The reading reflected the diverse social circumstances in which it was situated: Rose read the written text to Rosie and talked to her about the pictures, or they talked about the pictures and Rose then read the written text; but at regular intervals the reading was interspersed with interaction with me or with Helen. Helen had been playing on her own in one corner of the room since Rose had moved away, and she was engaged in a game that involved preparing some imaginary food and then offering these items round to every one else in the room. This took place simultaneously with the reading of the story so that the verbal comments that went with Helen's offerings, 'thank you very much, that was delicious', almost seemed to become part of the story. At some point during her play session, Helen decided to incorporate the monster from the story into her game, using it to help her prepare the food. Rosie protested vigorously about this, as if Helen had physically cut the picture of the monster out of the book.

All this led me to wonder what Rosie and Helen's views of that text must have been like. On the one hand its boundaries must have seemed very fuzzy with no clear distinction being drawn between what was part of the story and what was not, to the extent that the main character could apparently be 'removed' from Rosie's story and incorporated into her sister's game. On the other hand Rosie seemed to be able to make a clear distinction between text and play when it came to the matter of ownership; it

seemed as though she saw the monster as in one sense belonging to *her*; a character from *her* book, part of a personal period of interaction between her and her mother. The book was at the centre of a process which seemed to involve all the protagonists in an interchange between the interpersonal, affective, visual, literary, bodily and experiential modes. Both children were acting interpretatively around the text, but in different ways; using different resources in different combinations. Here there seems to be some tentative evidence of independent and purposeful *combination* of wide ranging and very different kinds of semiotic resources, particularly in the case of Helen's play. Language was part of this, but apparently as one element of a finely tuned process of combining resources from the different modes. To return to Wells' point, Helen appears to be demonstrating her understanding of the operation of the resources through this process of combination. Questions then arise about how this process of combination is used to refine understanding and achieve meanings.

The Questions and the Data

These three very different observations nevertheless have a number of similar features. Four common conditions seemed to pertain to these young children's interpretative activity around texts. Firstly, all their activity was rooted in a social environment and, at some point either directly or indirectly in social interaction; secondly, the children appeared to be capable of operating independently within this situation; thirdly, it deployed a range of semiotic resources both at the levels of representing and interpreting meanings; and finally it appeared to involve a process of epistemological exploration which was evidenced by their conscious and motivated control of the process. These conditions give rise to the questions I shall be considering in this thesis. At this stage I shall state them quite generally as befits the level of evidence I have been considering. At the end of the following chapter, when I have discussed the issues and evidence in more detail, I shall refine them accordingly.

The first question considers the nature of the different semiotic resources used; the second looks at how these resources might be combined and the effect of such a combinatory process on children's interpretative activity; the third concerns the nature of the relationship between the social environment and the semiotic resources on which the children draw during the course of their activity. These questions of necessity divide

the territory up in order to make analysis manageable. However, they are not discrete and bounded; rather they are part of the wider question referred to in the initial paragraph; the hypothesis that the characteristics of children's interpretative activity demonstrates a powerful motivation to make sense of textual activity; that they have a need to mean.

The observations that have led me to these questions do not, of course, constitute substantive data. However they have been invaluable in developing my thinking in its initial stages. I shall continue to draw on two of them, observations two and three, in the theoretical discussion which follows since they have a specificity which can be drawn on to clarify and develop the argument. The subject of the main body of data, which will be discussed and analysed in detail in Chapters 4, 5 and 6, is a two year old girl called Anna who is engaging in interpretative activity with her father, Rob. These data provide valuable opportunities for detailed description and analysis, but are nevertheless part of a continuum of evidence, including these more impressionistic observations, which support the generation of theory. These methodological issues will be discussed in more detail in Chapter 3.

In this chapter, I propose to consider two theoretical areas which underlie these questions: firstly, the relationship between the social environment and interpretative activity; and secondly, the nature of semiotic modes and how they function during such activity.

The Social Environment

To trace the relationship between the social environment and the kinds of semiotic resources which children are using, I shall first return to a micro level of description drawing on my initial observations, before extending the discussion to a consideration of other theoretical issues which pertain to this question. In each of the examples described, the children's activity around the texts took place in a social situation in which particular social roles were entered into and particular cultural values and mores were evident. In the case of two year old Rosie, her engagement with the story of 'Not Now Bernard', was part of a pattern of social relationships which were taking place in the room and which extended beyond it. Rose was a teacher in a local primary school,

and she and I had what I would describe as a friendly professional relationship, with the professional at the forefront. This professional relationship had a history involving a shared milieu of attitudes, ideas and relationships. Nevertheless, we talked about other things as well, acquaintances and interests in common, bringing up children and so on. Elements of the social and cultural world outside the room were brought in through our talk, but also in the way we physically positioned ourselves, moved and gestured. Rose, with the book in front of her and Rosie on her knee, used not only language to direct communication to Helen or to me, but also gesture and gaze. These modes also carried social and cultural information: Rose physically pointed to particular pictures in the book, stressing words which she felt would emphasise the meaning she wanted to convey to Rosie, and looking at her whilst saying them, “‘There’s a monster in the garden and its going to eat me,” said Bernard.’ Such an emphasis conveys its affective import through the long cultural history of fearful connotations which attach to monsters in stories (Bettelheim 1978). Rose’s knowledge of this and the skill which she deployed in conveying it to her daughter, were available to her from her personal experience and in her roles as both professional and parent.

Rose’s response to her other daughter’s play was also active; her reaction to Helen’s passing round of her ‘cooking’ was physical as well as verbal: extending an arm and gaze towards an imaginary plate; directing gaze at the imaginary items and pretending to put it in the mouth and chew it. All this enacted cultural rituals around the presentation of food and politeness, as well as a positive affective response towards Helen’s play. Helen’s proffering and the gestural response it engendered also changed the physical organisation of the social space in the room, transforming it from two areas, one with Helen playing on her own and the other with Rose, Rosie and myself engaged in textual and linguistic interactions, back into a single interactive space. Kendon (1990, 1992) suggests that the type of physical, spatial arrangements adopted during interactions are not simply a matter of background, but are motivated manoeuvres which demonstrate to the other participants their orientation to interactive activity. In addition in this case, the separate spatial arrangements are connected symbolically by the monster from the story, linking the text that Rosie and Rose were looking at in one area of the room, with the game that Helen was playing in another. Each of these spaces had both a physical and a symbolic frame (Goffman 1986) and was also an area in which

a distinct set of activities, carrying particular social and cultural messages, could take place (Bernstein 1990). Goodwin and Duranti (1992) use the term 'focal event' to describe those linguistic activities which stand out 'from a more amorphous ground as the official focus of attention.' (p32 n5). However, whilst it is true to say that participants do foreground certain events and interactions in the course of activity, in the cases under discussion here, the ground retains a significant semiotic role; 'focal' used in this sense would therefore seem to suggest a sharper boundary between event and ground than is the case here. Nor do Goodwin and Duranti extend their frame beyond the linguistic. Van Leeuwen (1993) uses the term 'semiotic act' to describe a basic unit of structural analysis, and which makes it possible to incorporate non-verbal and non-linguistic options into the description. In order to take account of activity which extends beyond the linguistic, and to include in the description the kinds of vocalised, gestural, visional and physical activity which is being discussed here and in the following chapters, the term 'central semiotic event' will be used to describe multimodal events which are framed and marked by participants.

In Krishan's case, what was marked about the role he adopted when looking at the Tintin books was not the social interaction in which he engaged, but the fact that in this instance he eschewed it. The activity was, nevertheless, a social one in which those adults he usually called on to read books with him were present but required to be silent. This generation of a silent space in a potentially socially interactive situation was an active choice, and one that was maintained throughout these readings; his silence was communicative (Kivik 1998) and indicative of a high level of symbolic activity. At this point in time, he seemed to have the cultural and textual resources he needed to be able to choose to engage in interpretative activity independently. The principal resources he used were pictures, visual representations of objects in the world around him. Generally speaking, Herge's illustrations have a high level of resemblance to the real object, but even so still require a considerable level of symbolic knowledge to be understood: perspective, meaning of colour, illustrative conventions (that an increased density of lines around car wheels represent speed for example), which objects in a frame are likely to be significant in terms of a narrative, and so on. Such knowledge had been accessible to him over a period of time in a range of ways: through experiences of looking, often interactively; talking about illustrations in books and the frames in

comics; looking at shapes being transformed in an active way (Krishan's father is a sculptor); transforming shapes himself through drawing and making.

Initially, all I was able to know was that he was deeply interested in these texts; the focus of this interest was not clear. The TV series happening at the same time was a happy coincidence which gave me insights into his interpretative activity which I would otherwise not have had. Watching the cartoon versions of those books with which he was familiar became a linguistically interactive process; he matched the frame he remembered from his reading to the frame on the screen (a non-linguistic process) and then, whilst it was still on the screen, gave me a linguistic account of the following frame, not simply of the objects that were in it, but of the narrative relationships between them; in other words, he told me what was going to happen next. At this point it was clear that the focus of his previous interpretative activity was relating and transforming his knowledge of story structure, gained through both verbal and textual experiences of stories, to his knowledge of visual representation. All these experiences were rooted in the social and cultural interactions that constituted his day to day activities.

In summary, the previous discussion suggests that the particular children which have been discussed will be coming to school steeped in semiotic experiences which have their origin in social situations. Indeed by expanding the set of semiotic resources considered relevant to interpretative processes to include constituents normally considered transparent, such as visual representation, gesture, use of space and so on, it would have to be said that this applies to all children. These experiences will differ according to the kind of semiotic activity and interpretative processes which commonly feature in their families and communities (Scribner & Cole 1981, Heath 1983, Minns 1990, Snow, Barnes, Chandler, Goodman, & Hemphill 1991). There will also be variation in this activity and these processes within family and community according to their function and purpose. Nevertheless the semiotic processes discussed thus far have all involved social interaction, either directly between participants at the time, or indirectly through reflecting and drawing on previous relevant interactive experiences; this interaction is not just linguistic, but also involves gesture, gaze, and physical movement and positioning as modes of symbolic interaction, as well as visual and

affective interpretative resources. It draws on both immediately available cultural resources in both physical and symbolic modes, and previously experienced ones. These processes do not have discrete boundaries in space or time, tending more to a flexibility to allow for maximal ease of combination and use. Hodge and Kress (1988) describe this as a process of semiosis in which meanings are both reproduced and changed through these interactions and the engagement with and production of texts. Children are active participants in this process through which, as 'individual semiotic agents' (p240), they engage in constructing and reconstructing meanings in the face of an increasing acquaintance with 'the larger semiotic system'.

Extending the Social and Cultural Environment

A significant extension of this semiotic system occurs when children first arrive in school: the roles, values and mores, and systems of semiosis which were familiar to them previously, have to undergo a re-assessment as they become part of a new, and often very unfamiliar kind of social institution with new sets of social and semiotic practices (Barton 1996, Minns 1990, Wells 1986). Children need to go through a process of reviewing what they already know in the light of the new knowledge and experience which they are encountering, what Bourdieu (1991) calls a 'rite of institution'. The variation in match between the familiar and the new practices encountered in educational institutions, particularly in the case of certain social groups, is well documented (Bernstein 1973, Heath 1983, Bourdieu and Passeron 1990), but for all children, certain features of their previous semiotic practice are likely to need re-framing or transforming in an institutional environment; so for example, use of space, either physical or interactional, is likely to become subject to different constraints (Bernstein 1990); and certain semiotic resources, such as gesture or visual representation are likely to be subordinated to linguistic and literate modes (Harste, Woodward & Burke 1984, Rowe 1994, Woodward & Serebrin 1989). In other words, new or different boundaries are set around these resources and around the process of semiosis itself. The interactions between adults and children which, in my initial observations seemed to have a significant mediating role in the process of semiosis, are also affected by the shift in boundedness which the structure of the institution, the school, imposes (Bourdieu 1991); so, for example, when young children move from their home environment to an institutional one, interactive relationships change from

being predominantly between one adult and one child to being, most of the time at least, between one adult and a large group of children; in other words, what children are experiencing is a change in social relationships.

This relationship between, at a macro level, the social roles in which children engage and the social institutions of which they are part and, at a micro level, the detail of the semiotic constituents of the objects of their interpretative activity is also mediated by a conjunction between the material and the symbolic elements of the process of semiosis. So the social and cultural experiences which Krishan brings to his interpretation of the increase in density of the black lines around car wheels are mediated by his physical relationship to the material object: lying on the floor with his eyes very close to the page of the book, surrounded by both physical and interactive space. And, as discussed above, different institutional settings affect the relationships between body, space and movement pointing to a merging of physical and the symbolic levels of description (Bourdieu 1986, 1991). This is also apparent when considering the sequence of interpretative activity around the Tintin book from a different point of view; the producer of the black lines, originally Herge, also brought a set of social and cultural experiences to his task of representing a physical activity in a symbolic mode, in his case mediated by his physical deployment of artistic tools and secondarily, by the process of printing, marketing and distribution. In other words, by viewing this process from the position of the producer of the material object, the macro and micro levels are reversed. This raises the question of the boundaries between the text and semiotic activity again. Helen did not see the monster in 'Not Now Bernard' as being confined to the pages of the book symbolically speaking, even though it remained there as a material presence (Eco (1994) refers to this tension as being between symbols which are paradigmatically open to 'infinite meanings' (p 21) but syntagmatically constrained by the context of the text); it could be argued that the text as a specific material embodiment of certain meanings is the point where there is an area of shared social and cultural understanding between the producer and reader of the text; but that the connections which the individual reader and producer can make between these shared understandings and other areas of social practice of which they are part are likely to generate different and divergent meanings. To put this in plain terms, Herge and Krishan share an understanding about the material conventions which attach to the visual representation

of speed (amongst other things) but this will generate quite separate patterns of associations in connecting to the very different social worlds which they inhabit.

Social Environment as Context

The social and cultural practices in which children engage and which have been seen to inform their interpretative activity have up to now been described in broad terms (roles, institutions, experiences) whereas the activity around the particular objects (books, visual representations, play) have generated a more detailed level of description (shape, lines, movement, space). The task of tracing the relationship between the individual semiotic resources and the social environment presents certain descriptive problems, given an imbalance in the level of description; on one side, at a macro level, 'social roles', set against on the other at a micro level, 'density of black lines'; on the one hand the singular 'social environment', balanced against on the other the plural 'semiotic resources'. Duranti (1985) notes the need for units of analysis which can integrate these different kinds of data 'in a coherent and meaningful way.' (p197).

The term 'environment' has been used thus far to describe the conditions which pertain to incidents of semiotic activity. Goodwin and Duranti (op cit) suggest that the relationship between these conditions and a 'focal event' is much like that between 'environment' and 'organism'; this analogy can be used to consider the nature of the environment: whether it is relatively stable or changing, local or extended; also the quality and nature of dependency between semiosis and environment. Halliday (1975) also uses the term, suggesting that from the very earliest stages of language learning, children are learning a system of meanings which always take place in an environment; this could refer to what is happening at the time, in a local sense, or to the entire social system in which children's semiotic activity is situated. However, both Halliday and Goodwin and Duranti revert to the more commonly used 'context' in discussing the social and cultural situations in which specific semiotic activity takes place.

Cook-Gumperez (1986) talks of literacy as being socially constructed 'within a contemporary schooling context'; she considers negotiation of meaning as happening in many 'different contexts' such as historical and 'present-day contexts'. Such a view represents research which concentrates on analysing literacy as a social process in which

linguistic features are analysed 'along with 'the cultural values and social characteristics of participants in naturally occurring situations' (p viii), also described as 'context-bound ways'. Here the term 'context' is used to provide some connection between social processes and descriptions of practice. This can be distinguished from research which focuses on 'autonomous' models of literacy (Street 1984): literacy either as a context-free cognitive process or as an institutional issue.

However the term as it is used here does not suggest any descriptive detail of social processes and practices. When combined with a referent like 'school' or 'present-day' some further description is possible, but even then it still only provides what Bernstein (1990) refers to as a very low level of description. The term also lays itself open to metaphorical implications of embeddedness and separateness: something which surrounds but is other than the particular phenomenon which is being studied (Gilbert 1992). Gilbert also talks of it as suggesting the provision of a general backcloth against which the action takes place; the context is a background which seems external to the text or situation. Goodwin and Heritage (1990) describe this as 'a "bucket" theory of context,' (p286) in which the situation is treated as anterior to the action which takes place within it. Fairclough (1989) considers a similar distinction which is set up by positing a relationship between language and society; the implication here is that these are separate entities 'which just happen to come into contact occasionally' (p 23). The boundaries which this manner of description sets up also potentially extend to the relationship between social contexts, so that semiotic activity takes place in particular sites which do not necessarily connect to other sites. In terms of my own examples, this would mean that each would have to be considered in terms of its own 'social context', making it difficult to consider them as other than discrete examples of particular kinds of semiotic activity, and making comparisons between semiotic activity taking place in different contexts problematic.

Meinhof and Richardson (1994) point out the very broad range of meanings which are covered by the term: a set of meanings which might range from 'context' referring to global structures to 'context' as a description of the evaluative frameworks which readers provide in the process of interpretative activity; such breadth again indicates the low descriptive power of this term. On the other hand they do suggest that the

boundaries between text and context are 'variable, unstable and operative at different levels' (p19); and they conclude that this process of movement between text and context is not a random one, but something which is 'operationalized in fairly specific ways'. Street (1995) offers a more 'layered' view of the term in which he says that discourse cannot be understood simply in terms of its immediate 'context of utterance' (p165); the meaning of both discourse and context of utterance needs to be informed by an understanding of their 'broader social and conceptual framework'. Street acknowledges the need for methods of analysis to draw on those aspects of disciplines such as linguistics and ethnography which emphasise processes of ideology and power and are dynamic rather than static; these, he suggests are likely to be sensitive to 'social context'. This would seem to introduce a degree of circularity into the discussion with 'processes of ideology and power' informing understanding of a social context of which they could be considered a part (see Fairclough 1989); 'context' cannot be used as an explanation for itself (Fairclough 1992). However Street identifies the need for comparisons and generalisations which are cross-cultural and which need to be conducted at the 'interface' between disciplines; this could be considered a point at which an understanding of the operation of boundaries between text and context and between contexts themselves could generate a more detailed level of description of the constituents of social context and allow for greater comparison and connection between different sites of semiotic activity.

The focus of Street's discussion of social processes and context is primarily linguistic. The texts he is concerned with are literate texts in which language is the marked and privileged mode of meaning making and semiotic activity. Indeed in discussing the nature of differences between oral and literate modes, he refers to 'paralinguistic features' (in the sense of such things as voice quality and facial expression) being evident in both written and spoken language. Language is the 'dominant norm' (Lemke 1995) with other modes of meaning making being subsumed under a linguistic definition. Such description would seem not only to reduce 'paralinguistic' features to a transparent state, but also, in some cases, to overstate the role of language in semiotic activity, or to misrepresent its position in the semiotic process. And if a strong relationship between context, meaning and form or mode is assumed (Hodge and Kress 1988), then a level of description which does not privilege one mode of description over

others is important. Street's own argument, that to claim that writing does not exhibit non-verbal and para-linguistic features is a result of using too narrow a definition of 'social context,' would seem to apply as strongly to the privileging of language over other modes. In addition an explanation of the nature of the relationship between social context and semiotic resources would seem to require not just a wider definition of the former, but also a more narrowly descriptive one of both macro and micro levels of the constituents of both social context and semiotic resources.

In the case of my original examples, in attempting to analyse these constituents, it becomes clear that the boundaries between the macro and micro levels of description are far from distinct. In Rose's sitting room, there were two adults and two children: both adults had social roles which pertained to the education of young children at an institutional level; these roles were not the same however, nor was the route by which they had arrived at these roles. And although the adults had a friendly relationship which was informed by common views about teaching and learning on the one hand and about such things as life experiences and mutual acquaintances on the other, nevertheless the friendship was primarily a professional one which normally took place in a professional setting; in addition, I was also there as a learner, observing interactions in the light of the needs of my own studies. Both adults were parents, but only Rose was actively engaging in this role as only her children were present at the time; and the fact that Rose was the mother of two daughters and I was the mother of one son, meant that our experiences of parenting were different, both at a practical and at a cultural level. Each constituent of each of these roles could be further described at a micro level of detail which connected materially to the semiotic interactions taking place in the room. So Rose's roles as mother, teacher and friend are realised materially through activity around particular objects and also in the way she physically places herself in relation to other people and artefacts in the room, her physical manner, the gestures she uses, the direction of her gaze and the way in which she interacts linguistically. And Helen's play, involving a combination of her social and textual experiences, is likewise mediated through a variety of interactive modes. A full ethnographic description of what was happening in the room could have been developed (see Heath 1983, Minns 1990). However such a description would not simply constitute a background context against which semiotic activity takes place, since it would appear that the ways in which

these social roles are materially embodied are part and parcel of the activity itself. Goodwin and Duranti, drawing on Heritage (1984), also note this interdependency in referring to talk as 'doubly contextual'; an utterance invokes '...the social field from which it emerges while simultaneously creating a new arena for subsequent action.'(p29)

Social Environment as Habitus

This relationship between social practice and the material detail of physical interactions, is at the centre of Bourdieu's concept of habitus. According to Bourdieu (1984, 1991), class conditioning is internalised and consists of systems of dispositions which embody the social structures and conditions in which individuals live. This can also be extended to include other facets of social role which might be related, for example, to gender, occupation or age. These dispositions are often inculcated through early childhood experiences; individuals are likely to then maintain these styles of action and reaction as adults. Thompson (1991) describes these as often ordinary routines of every day life, 'mundane processes of training and learning' (p12) such as being told to sit up straight or not to speak with your mouth full. They also involve dispositions which could be described as affective: dispositions to want certain things or, as in the case of Helen and Rosie, to expect certain kinds of responses to certain kinds of actions. Such dispositions can also be transferred to new situations in which they continue to generate actions and responses. In this respect Bourdieu also talks about the way in which such transference can generate inappropriate responses and perceptions when the habitus is not applicable in a new situation and, it could be presumed, does not include the perception that this is the case. To return to my example, Helen is able to transfer certain social dispositions which she has observed to pertain to the preparation and offering of food to an imaginative play situation; she also has a disposition to expect that the other people in the room will receive this transference in a positive way.

The habitus also incorporates bodily dispositions. 'The schemes of habitus' incorporate 'the most automatic gestures or the apparently most insignificant techniques of the body-ways of walking or blowing one's nose, ways of eating or talking' (Bourdieu 1984 p466). In this way both cultural and, according to Lemke (1995), sub-cultural dispositions are embodied in seemingly mundane physical actions; the body is a carrier

of semiotic meaning, a 'semiotic body'(p85). These physical activities also incorporate the kinds of repeated, sometimes ritualised activities in which communities engage and which form what Lemke calls 'action genres'(p31) and might include activities such as game routines, writing a cheque or taking a train. At another level these would extend to more complex social and cultural activities: sports events, economic activity or travelling. This 'activity formation' would also involve the kinds of actions and routines which I have been discussing in my examples, specific modes and styles of activity engaged in whilst playing or responding to play or whilst reading aloud or listening to a story. Different routines around young children are likely to be followed by different social groups, but in all cases they are likely to be commonly understood and followed within those groups, the membership of which would tend to share a view about their efficacy in achieving certain educational ends (Heath 1984).

Gee (1992) suggests that habitus includes cognitive dispositions, involving mental structures through which individuals perceive the physical and social world and which shape how they respond to situations in which they find themselves. This view would seem to be incorporative of all semiotic activity, including dispositions to symbolic and interpretative action. Thompson (1990) talks of symbolic action involving the interpretation of symbols which embody the patterns of meaning through which individuals share their experiences and beliefs. The process involved in this activity is highly analytic: one of interpretation not simply description; the interpreter seeks 'to discern patterns of meaning, to discriminate between shades of sense, and to render intelligible a way of life which is already meaningful for those who live it.' (p132). It is this kind of process which Krishan's interpretative activity around the Tintin books involves, with his detailed visual analysis of its narrative structure and meaning. Geertz (1983) however, implies that there is a previous level of symbolic interpretation involved here; an understanding of the structure of the system of symbolic forms which Herge is using must be a precursor to their interpretation. In other words, interpretative activity requires an understanding of how the different systems of symbolic forms 'organise their significant world' (p151) by providing, what Ricoeur (1984) describes as 'rules of meaning' (p58). This raises a question about the nature of the disposition involved in understanding at this level; such a disposition would need to predispose towards, at the minimum, an inclination to look for meaning. Such a disposition would

seem to describe some of the activity and understandings which the children discussed in the introduction demonstrated. Calhoun (1993) suggests that a 'theoretical attitude' should be considered as 'a variety of habitus' reflecting what he describes as 'a certain social placement' (p81) from which social positioning such a habitus derives. However, 'epistemological disposition' might more accurately describe what is required at this more structural level of interpretative action.

Any description of the relationship between the social roles in which children engage and the semiotic constituents of their interpretative activity will need to be informed, not just by an ethnographic level of description, but also by an analysis of the affective, material, bodily and symbolic dispositions which are carried in these constituents. An analogy might be drawn here with the way in which genetic information is carried by DNA and can be traced in the constituents of living organisms. Traces of social practices at personal and institutional levels are identifiable in the dispositions evident in interpretative practice; in this sense the concept of habitus could be said to involve a kind of semiotic DNA.

Modes, Tools and Resources

In this section I propose to focus attention on the first of the broad questions, namely the identification of the various semiotic resources being deployed in the process of interpretative activity. If, as has been suggested, these resources are multi-modal, then it is necessary to first consider what is meant here by the term 'mode'. Kress and Van Leeuwen (1996) discuss the multiple modes of communication used to produce all texts, written or spoken, and the different potential for meaning making which each of these modes has. Mode here is used in the sense of the symbolic channel or wavelength (Halliday 1975) deployed to communicate or realise meanings. Here too the relationship between channel and meaning is a flexibly bounded one in which not only are meanings affected by the choice of channel or mode, but the patterns of meaning making of one mode can influence or even transform others (Duranti 1985). In both my observations, this multi-modal quality of the activity is striking: for Rosie, the text she is looking at contains visual representations of real and imaginary forms as well as the graphic representation of the story which her mother reads to her, using not just linguistic means in the straightforward sense of reading it aloud, not just prosodic

means such as pace and pitch and emphasis, but also other modes such as gesture and gaze and movement. In addition, elements of previous social and cultural interactions beyond the room are encoded through these different symbolic channels; a possibility acknowledged by Cole (1994) in his discussion of the way in which material artefacts embody previous actions in symbolic form. The modes, as can be seen, are both material and symbolic; they are also individually complex, having a variety of mediums of expression. The term 'semiotic resources' has been used thus far, and will continue to be used, as an inclusive term, covering all modes. The resources on which Rosie is able to draw in order to generate meanings from the text could be seen as a sub-set of 'interpretative resources'. The primary activities in which she is engaged are looking at the images represented in the book and listening to her mother reading the words written on the page; other activities she engages in, talking to her sister angrily about the monster, watching her mother's face as Rose turns to say something to me, are incorporated into this central semiotic activity; so whilst she is watching and talking, she remains sitting on her mother's lap with her hand on the book, bodily and gesturally retaining the centrality of the book-sharing activity, physically holding onto her space as it were, but at the same time using language and gaze to interact with the multiplicity of other activities going on in the room beyond the boundaries of this space. In other words, her interpretative resources are multi-modal and are therefore flexible enough to be directed both towards the activity of the central semiotic event, and towards more marginal activities without losing their central focus.

In Krishan's case, it was the integrity of an individual mode which was of particular significance; the visual mode of representation within the text was mediated by him using his gaze. Both the use of the visual mode and the use of gaze also encode previous experiences in other modes as has already been discussed above. On one level this can also be seen as a multi-modal process, but on another level it is his knowledge and understanding of the unique form of this particular medium of the visual mode which has motivated him to use it in the way he does. He uses his gaze in a structured and systematic way, moving his eyes from the top of the left hand page, to the bottom, moving from left to right, frame by frame and then repeating the process on the right hand page. He has learnt to use this mode so efficiently and it is so effective for his purpose, that he has chosen to use it exclusively, without any linguistic mediation.

Likewise, he is able draw on his knowledge of the symbolic features of the pictures in order to generate the meanings which he does. The modes are interpretative resources which he has combined to achieve the meanings he is interested in achieving.

The debate as to whether the modes are homogeneous in their signifying is also significant in the case of all the modes I have mentioned. Gesture and gaze, for example, are rarely considered to have an independent signifying role, except in the case of sign languages (Morford 1996, Sacks 1991) or certain kinds of theatrical performance (Laban 1971); an extension of Kress & Van Leeuwen's argument about the complex nature of individual modes of representation to modes like gesture and gaze is even more uncommon in descriptions of communicative and interpretative practice (though see Bremmer and Roodenburg 1993). In reality however, it would appear that every mode is multiply constituted and capable of independent signification, both material and symbolic.

Modal Transformation

It has been argued that multimodal activity of the kind which has been discussed, does ultimately involve a process of translating meanings generated through non-linguistic or non-representational means into other modes for the purpose of fully achieving them; if, as Vygotsky suggests, language is the most important semiotic resource, then other modes would have to be translated into a linguistic form in order to realise their full communicative potential. Kristeva (1980) talks about semiotic practices which are considered in this way as translanguistic, as operating through and across language. This would seem to suggest some kind of hierarchy of meaning-making potential across modes with language holding a dominant position, although it has already been noted that such a view is problematic. Barthes (1973) considers that meaning in non-linguistic modes is confirmed by language; that it is through language that meaning is fully realised by enabling the signifiers to name the signifieds. These meanings do not, he says, exist independently of language. In other words, it is language which provides coherence for the different modes in the process of signification. It is certainly the case that language often appears to dominate communicative and interpretative activity; a multi-modal activity such as Rose reading to Rosie is likely to be described in terms of its language or literacy with modes such as gaze and gesture subsumed under these

broad descriptors (although see Harste, Woodward & Burke 1984, Streek 1993, Woodward & Serebrin, 1989).

If, however, the view that individual modes have the capacity for independent generation of meaning is accepted, then the debate starts to centre around the question of the differential functions of the modes, rather than their relative semiotic pre-eminence; put simply, that by their nature modes can be used to generate and communicate meanings in different ways. As I have already said, in looking at the Tintin books Krishan resisted any linguistic mediation. When we watched the illustrations in cartoon form on television, we were watching a transformation of aspects of the illustrative mode, principally from static forms to moving ones. However, when Krishan recounted verbally certain events which he had interpreted from the illustrations, he was transforming his previous interpretative experience into a linguistic form for communicative purposes, but not in any sense the illustrations themselves; in other words it would appear that he had initially operated exclusively in a visual mode and it was only when, on a different occasion under different circumstances, he chose to talk about the story that language became involved (see also Eco 1979, p206-207 and Kress and Van Leeuwen, p34-35 for related personal reflections). In that first instance the visual mode was autonomous, not part of what Barthes (1973) calls a 'linguistic admixture'. Likewise, the visual representation of the monster in Rosie's book is not transformed into language; it remains as part of a semiotic object, the book, but is then transformed by Helen, mediated by the language of her play, into a symbolic interactant. For Rosie, the character of the monster is mediated by Rose, on the one hand through her reading of the written mode, but on the other through her facial expressions and her use of prosodic forms of language. Each of these modes has a particular and unique function in interpreting the monster.

Materiality of Modes

The term mode covers channels of communicative action like language, gesture, gaze and bodily movement, but it also includes types of visual textual representation like still illustrations, images moving on a screen, and writing or other kinds of notation on page or screen. Kress (1997b) describes these multimodal texts I have been discussing as 'semiotic objects'. Such objects invite activity: the two books and the television

cartoon invited interpretative activity, mediated by interpretative resources. This activity is both physical, given the material nature of these modes, and symbolic, given their potential to represent meanings. The material nature of the modes is particularly significant in the semiotic activity of young children, where the physical aspects of texts are often as new and unfamiliar to them as are the symbolic. Kress & Van Leeuwen discuss the view that material aspects of meaning, particularly of its visual representation, tend to be seen as homogeneous. They argue, however, that different material practices of representation, different brush strokes on a painting for example, or the use of different texture on surfaces, use different signifying systems and that details of material expression are always significant. This argument also applies to a materiality which is rooted in the physical activity of drawing or painting such as making different densities of lines to reflect speed or perspective, or mixing and using a range of colours. To reiterate Cole's point, even if the final outcome is a printed version, the original material activity is still evident in a represented form. This is particularly pertinent in the case of Krishan's use of the Tintin illustrations, where I have suggested that it is these representational signifying practices which guided him in his interpretative activity.

The Function of Resources

A distinction is now beginning to emerge between resources as part of the semiotic object and resources used in interpretative or communicative action around such an object. Communicative actions enable a subject to interact socially to communicate interpretations of semiotic objects: to act as mediational means (Wertsch 1991). Vygotsky (1978) describes these mediational means as tools which enable children to solve problems. This is a useful metaphor for the discussion of the multi-modal activity I have been describing, although his view that language is the most important of these tools would tend to determine description of their operation. Wertsch extends the metaphor to that of a tool kit, in order to allow for the diversity of mediated action which is generated by differences in social and cultural circumstances. It can also be extended to incorporate the idea of sub-groups of tools which are used in specific instances of these circumstances. So the sub-set of 'interpretative resources' which has been previously posited would be a case in point.

Wertsch does acknowledge that the metaphor implies questions about the nature of these tools; so whilst the idea of sub-sets of tools might be one way of developing this analysis, it still raises questions about the nature of the tools within any sub-set, their relationship to other tools and to different social and cultural circumstances. Kress (1997b) states that in a multimodal system, meaning can be articulated in different ways through different semiotic means, and with each mode having 'multiple articulation'. In addition, these means also have at least a dual function, having the potential to act as both text and as means of generating text. Van Oers (1994) calls this the 'double function' of signs within semiotic activity, in which they are both the object of semiotic activity and 'the mediational means to regulate the semiotic activity itself...' (p24). For Rosie, language, in its written form is part of the semiotic object, the book, but it is also used in its verbal form by Rose to mediate the meaning of this book; the monster is a visual representation of a mythic character, as interpreted by the illustrator of the book and mediated to Rosie by Rose through her gaze and through prosodic means; its symbolic meaning is incorporated by Helen into her play, mediated by language, gesture and movement. These are complex relationships with the tools apparently having the potential to undergo a number of transformations in the course of semiotic activity. Indeed Barthes, (1977) writing about the relationship between photograph and written text, suggests that it is necessary to 'exhaustively' study the structure of the individual mode in order to fully understand its relationship to another. In the case of the Tintin book, the illustrations have integrity as a set of representative tools, semiotic matter which can be subject to specific interpretative activity; at the same time, the tools also enable Herge to represent particular meanings and mediate them to an audience of readers. And it could fairly be surmised that a detailed analysis of the illustrations as a set of tools would enhance understanding of how other modes are used in the process of interpreting them.

Although the terms 'tool' and 'resource' are not synonymous, nevertheless the way in which they have been used up to this point has tended to suggest equivalence. Extending the metaphor however, whilst all tools can be considered a resource, not all resources are tools; a resource exists in a ready, but still potential state and may or may not be needed during semiotic activity. The question arises as to whether a greater clarification of the terminology used here would help towards an understanding of this

process. One way in which this possibility could usefully be explored would be to extend the terminology used to incorporate another level of description. The term 'semiotic matter' could usefully be posited to cover the potential range of semiotic constituents. Since not all semiotic matter is available or accessible as resources to all actors, semiotic resources themselves become a sub-set of semiotic matter. However, 'availability' of matter is not a straightforward issue: for Krishan, the written mode within the Tintin books is matter which is not available to him as a resource to elucidate the writer's exact meaning, in the sense that he does not yet fully understand the rules of meaning which apply; nevertheless his knowledge that rules of meaning do apply, even though he does not yet know what they are, means that the writing is available as a resource which can be drawn on in considering the nature of meaningfulness itself.

The semiotic resources which comprise an object (both material and symbolic), and the semiotic resources which are used as a means of mediating meaning, could also be considered as separate sub-sets of semiotic matter. To return to Wertsch's tool kit analogy, within the sub-set of interpretative resources, there are a range of tools which can be used to do the interpretative job in hand; however, when the analogy is applied to the semiotic object the question of agency becomes problematic. To return to an example: Krishan applies interpretative tools to Herge's book; he is the agent of this action; he was not the agent of the action to create the book however, Herge was. In other words, during this particular episode of semiotic activity, the semiotic constituents of the book are resources which Krishan can draw on, but they are not tools in the same sense as they were for Herge. The metaphor is effective where there is agency; where use of tools for semiotic work involves some kind of physical, bodily mediation. In the case of the semiotic object, agency, both material and symbolic, is at a remove and it would seem to involve a process of physical mediation to make resources available as tools for interpretative activity. The distinction between resources as part of the object and resources as bodily means of mediation suggested at the beginning of this section, is maintained when resources are transformed into tools.

Chapter 2

Introduction

This chapter will consider the type and nature of the semiotic resources which the children being discussed use in their interpretation of semiotic objects; in other words it will take up Barthes' challenge to study the modes and how they are constituted, if not exhaustively, at least at a greater level of detail. Firstly, the nature of the non-linguistic, analytical resources will be discussed; the term 'cognitive resources' will be used to describe these, in order to distinguish them from those resources which are more obviously materially available (such as language, gesture or making marks, for example). This is not to suggest that the more overtly visible resources do not involve cognitive processes, nor that cognitive resources do not have any material outcome; it is more a matter of acknowledging the existence of significant resources which are involved in stages of the interpretative process which are not easily accessible to the researcher, but which still require analytic scrutiny. Secondly, resources concerned with visual perception, and constituents of those visual modes which constitute the semiotic objects will be discussed. Finally, the use of bodily tools in the process of mediating interpretative and generative activity, both in the observations and in the main data, will be discussed. This is not intended as a definitive theoretical division at this stage, but as an organisational one for the purpose of this analysis. A distinction would seem also to lie in the intention of the sign makers in relation to resources used; the spoken language, vocalised sound, gesture and gaze and action which are discussed in this section are not intended by their producers to have a continued material existence in the same way that physical marks are. In this second section in particular, the main body of data will be anticipated in the selection of resources to be discussed.

In the penultimate section, the nature of the sign will be discussed in relation to the question of how semiotic resources are combined in the course of interpretative activity. In the final section of this chapter, a small number of studies which cover areas of similar concern to this thesis will be also considered. Following this, the questions posed in the first chapter will be refined in the light of the theoretical issues raised in both Chapters 1 and 2.

Cognitive Resources

One of the problems when it comes to considering the nature of the type of silent semiotic activity in which Krishan was engaged is, as has been mentioned above, the apparent inaccessibility of the processes involved. As was discussed in the previous chapter, evidence of the existence of such a process is often verbal, and therefore tends to determine some kind of underlying linguistic explanation of the activity; in other words to go for a translinguistic account of the activity. A decision as to whether the dominant mode of the activity is linguistic or not, however, does not provide information about the nature of the process. And given the young age of the children being discussed, in particular Anna, the question of age-related capabilities with respect to interpretative processes, including those involving the use of language, also needs to be considered.

It could be argued that a key cognitive activity in interpreting the Tintin pictures would involve thinking about the sequence of the illustrations and how they linked together to tell a story, in other words some kind of silent reasoning (see Johnson-Laird 1990). A developmental view however, might reject the logic of this by suggesting that a four or five year old was too young for such reasoning. Piaget (1967) claimed that young children were not capable of the kind of abstract, deductive, and linguistically based reasoning which adults use, and which the process I have just described might require or rely on; it is not until adolescence that they become capable of operating with this kind of thinking, moving from concrete to formal operations. This view has, however subsequently been much disputed. Bryant (1974) demonstrated that in fact, children are able to use deductive inference from a very early age by using framework cues to connect different objects and experiences. Similarly, Girotto and Light (1992) discuss the ability of young children to apply pragmatic reasoning schemas, based on their social experience, to problems requiring deductive inference. Contrary evidence has also been produced by Donaldson (1978) who points to the need for the procedures and apparatus of inferential tasks to make social sense to young children; where this is the case, she concludes, then the gap between their ability and that of adults in their deductive reasoning abilities is less significant. Even the youngest children, she points out, have systematic reasoning strategies, though the systems they use are likely to be different to those used by adults. DeLoache and Brown (1987) come to similar

conclusions with respect to the strategic effort which young children deploy during memorising tasks. Siegal (1991) challenges the evidence that young children are not capable of reasoning, by pointing to the way in which adults can mislead children in their questioning and use of language, in some cases driving them to respond affectively rather than rationally; for example by interpreting a question as insincere or suspicious in seeming to require too obvious a response. Harris (1990) talks of children developing a meta-theory, 'a set of culturally specific beliefs about the origins, dangerousness, and controllability, of particular types of behaviour and experience.' (p217); in which case, Siegal's examples too, could be construed as evidence of a process of rational theorising.

However, it is not just that children are acting in response to the situation of the activity as these scholars suggest, rather than to the abstract requirements of a relatively fixed stage of development: it is also the case, as Feldman (1987) points out, that the objects of knowledge themselves do not have an invariant form across ages and levels of development. As epistemic procedures become familiar to children, they can become the subject of discussion and reasoning, becoming part of 'the child's potential store of things that *are*.' (p136). So, for example, the process of reading from frame to frame has become for Krishan part of his store of things that are, and for Helen her familiarity with the textual concept of 'monster' enables her to use it as an object in her play. This process of epistemological consolidation, described as 'ontic dumping' by Feldman, suggests a control of semiotic action on the part of these children which would seem to be a direct contra-indication of a strong form of Piagetian explanation. What this process does allow for is the building up of semiotic resources in a range of modes including the linguistic, which are then available for use and re-use.

The question still remains as to the nature of the cognitive resources involved in interpretative activity and the different modes which are deployed in carrying it out. If, as has been argued, young children are capable of linguistically based logical reasoning from an early age, then linguistic thought of some kind cannot be ruled out. However other modes might also be contenders. Bruner (1990) argues that children learn to organise their experience 'narratively' from an early age through the discourse they encounter in their families; what he terms 'family drama'. It is here that they experience

and learn narrative roles in the course of active engagement with them. This could be seen as an example of use of a framework or schema, but also of the way in which, as Harris suggests, children impose theories on their observations of cultural practice. The theorising of the organisation of experience within their homes, leads to the early development of narrative tools which enable children to produce and comprehend stories well before they could be expected, according to the Piagetian view that has just been discussed, to handle certain kinds of logical propositions. Bruner (1996) describes these narrative tools as involving the relating of events, acts and utterances to agents, actions, goals, settings and timings. In other words, the site of this 'actional mode' of meaning making activity is social, cultural and historical and includes material and affective as well as logical meanings. Children 'appropriate' culturally defined understandings from their activity in cultural sites (Mercer 1992). Feldman and Kalmar (1996) extend this view to the organising of textual experience; what they call 'genre patterns' (p107) are derived from exposure to different kinds of texts, which then provide cognitive models for interpretative activity. Both the theorising of narrative, and of textual structure, can also be seen as examples of what has previously been called an 'epistemological disposition'.

Visual Resources

Whilst it might be the case that reasoning and narrative tools were involved in, for example, Krishan's interpretative process with *'The Black Island'*, it was Herge's illustrations which provided the focus for their action in this case, and which made interpretative activity possible, in the sense that they were recognisable (in a way that the written symbols were not for him at this time) and therefore interpretable. Gardner (1993) suggests that intelligence consists of a number of intellectual competencies which include a specific spatial intelligence; such an intelligence is usually developed through visual experiences, though it is not an exclusively visual capacity since it is not necessarily lacking in people with visual impairments. Nor is this intelligence a unitary one; rather it has a number of different constituents which could be drawn on depending on the specific spatial situation; so in the case of Rosie and Helen during the reading of *'Not Now Bernard'*, visual-spatial capacities were required, on the one hand by Rosie, to make sense of the layout of the book and the way the artist represented reality through the illustrations, and on the other by Helen, to make sense of the physical

arrangement of people and space in the room with respect to the organisation of her play. Gardner also links evidence of spatial intelligence to the ability to draw on visual memories when recalling, for example, the layout of a familiar geographical location. Such a cognitive technique would also apply to the ability to recall the visual layout of texts; in the Tintin example I have been discussing, the principles of Herge's spatial layout and method of sequencing frames of illustrations, for example, are likely to have been the subjects of visual recall. Vurpillot (1976) points to the way children use structured visual strategies during tasks requiring spatial skills: in an activity where very young children were required to put geometric shapes into matching spaces, after an initial trial and error approach, they made comparisons between the piece and the shape by systematically moving their gaze from shape to space before making a decision. However, as they become familiar with visual-spatial activities, they develop algorithms of 'exploratory activity' (p269) which can be used in unfamiliar variations of the activity. This is reminiscent of Feldman and Kalmar's genre patterns, and provides further evidence of children's epistemological disposition.

The understanding of visual images, according to Arnheim (1974), is not a matter of simple recognition, but is a process of active interpretation. Goodman (1976) points out that there is not a necessary relationship between resemblance and representation; even a photograph can only show an object from the angle of view of the position of the photographer (Berger 1972). Moxey (1992) goes as far as to say that it is the apparent connection between what is seen in the real world and what is seen in mimetic art, that has given rise to 'a systematic misunderstanding of the nature of artistic representation' (p41). Foucault (1983) makes a useful distinction between resemblance and similitude: the former presupposes some primary mimetic reference point, whereas the latter develops in a non-hierarchical series which can move easily in a number of directions. Arnheim discusses how looking at an image involves a close interplay between the properties of the object and the nature of the observing subject. Even in the case of young children, the images they produce reflect a transformation of their own experience into a two dimensional medium. These experiences and the motivation which subjects bring to their looking, focuses their visual perception, informing both their manner of looking and what they see; which elements of the image or object they apprehend, and how a transformation is performed. So, children's early attempts to

represent perspective are not wrong, but are examples of logical solutions to spatial problems. Vurpillot also discusses this, suggesting that at a primary level the child concentrates on the relationship between elements in a very small perceptual field; at a secondary level, the perceptual field is much wider, enabling links to be made between the different elements. However Vurpillot relates these levels to Piaget's stages of development; in other words, what can be perceived is dictated by the age and stage of development reached. Arnheim (1969) sees the matter differently: mental growth, he suggests, is 'not the capacity to connect percepts by some secondary operation but the condition that allows perception gradually to exercise more of its natural intelligence.'(p86). In this sense intelligence could be construed as the control of the increasing range of semiotic resources that can be brought to bear on perceptual activity as social, cultural and material experience develops. For Arnheim the process is one of active problem solving; looking is a matter of 'visual thinking'.

The question of the constitution of the semiotic object needs to be returned to at this point: the perception of the object changes or evolves, depending on the resources being brought to bear on its interpretation. So for example, as Arnheim shows, children will see perspective and other elements of visual representation in different ways at different times depending not just on what perceptual experiences are brought to bear on the looking, but also on the material and technical resources deployed by the maker of the object. Vurpillot cites an observation of a child turning the pages of a picture book and coming across two adjacent pages, one with a picture of a little boy standing, and the other with a picture of a clown doing a hand-stand; when she noticed the picture of the clown, she turned the book round so that the positions appeared reversed, and then continued this procedure several times in succession. Vurpillot then goes on to observe with some surprise that the same child was observed an hour or so later turning over the pages of the same book upside down. However, for the child what was apparently interesting about the book was the way its material form made it possible for her to transform the visual images on the page. From her point of view, if a significant page was one where the images could be rotated in such a satisfactory way, then it was immaterial which way up the book was held. She responded to the material and technical features of the book in a way that was relevant for her at that particular time. Kress and Van Leeuwen suggest that not even the fine detail of material representation

and technical activity such as this can be considered transparent. However, how such resources are deployed by the creator of a semiotic object are likely to make its viewing more or less accessible depending, as Goodman says, on the viewer's habits of looking, and knowledge and experience of different genres and styles of artistic representation.

Semiotic Object

Visual Constituents

An ability to interpret visual images is not only informed by the kinds of cognitive resources discussed above, but also by a knowledge and experience of visual images that derives in varying degrees from the long and complex history of the constituents of visual representation: there is, for example, a significant body of semiotic analysis of European Classical painting (Foucault 1970, Berger 1972, Kristeva 1980, Hodge & Kress 1988, Scholes 1989, Kress & Van Leeuwen 1996), which highlights the relationship between the material and technical choices made by the painter, the specific semiotic devices used to frame the viewer's looking, and the social and cultural conditions in which they were painted. Whilst it is not intended to suggest that the visual resources which children use in interpreting visual images are informed in any direct sense by a knowledge of this history, nevertheless it informs the cultural environment in which children learn to look at and create representational images. Having said this, the tradition which is being discussed is not unique. There are many other cultural traditions of visual representation which will be part of the experience of many children within a dominant European culture. In this sense, both representation in particular (Moxey *op cit*) and the dominant visual culture in general, can appear deceptively transparent (Beauchamp-Byrd 1997, Mosquera 1992).

Kristeva, in discussing Giotto's painting, describes the use of colour as a complex code which is used by the artist to influence the visual attention of the viewer in particular ways but which also reflects the ideological values of any given culture. The artist's choice of colour may reflect cultural, affective or psychological meanings which had particular symbolic significance at that period of time; at a material level, the choice might also have reflected a stage of scientific development, in the sense of having to select colours from what was available at that point in time. Colour selection was also a

constituent of the artist's pictorial system, a semiotic device used as part of the structuring of visual meaning. Kristeva also talks of the relationship between colour and space, the way in which Giotto's use of a mass of colour gives his figures an impression of depth and volume. Light too, comes into this relationship between shape, space and colour: Scholes, in discussing a seventeenth century French painting, '*The education of the virgin*', describes the way an artist has painted candlelight falling on a book, using the contrast with the darker areas of the painting to structure the space in a section of the canvas and foreground and frame a particular element of the painting, drawing the viewer's attention to its symbolic importance.

Scholes goes on to discuss the significance of narrative to both painter and viewer. The details provided by the painter suggest a narrative which needs completion and seem to urge the viewer to answer the questions which are raised by the presence of certain objects in the painting and their relationship to its title: questions about the book that is being read; the identity of the child in the picture; reasons for a biblical figure having the clothing and domestic accoutrements of seventeenth century France. Scholes suggests that the answering of these questions is an active interpretative process in which the viewer uses imagination to relate the clues provided by the objects on the canvas to their own life experiences, both affective and active. These life experiences also involve knowledge of other texts, including knowledge of systems of visual representation on the one hand, and of the stories within the culture which are drawn on by painters and artists on the other. The narrative of the painting does not exist discretely, separate from its material construction; it is the artist's technical ability to paint light and shade and so cast light on the child's face and the book, which draws attention to this area of the painting and so gives rise to questions about its narrative content.

Foucault, in his analysis of '*Las Meninas*', shows how Velasquez uses the direction of the gaze of the subjects represented on the canvas to structure a complex relationship between painter and viewer, and what is represented but cannot be seen: the painting shows a painter standing at his canvas, of which only the back is visible to the viewer; the painter's gaze, and that of other subjects in the painting, is directed outside and beyond the canvas at the sitters who are only visible to the viewer as a reflection in a mirror at the back of the room. The lines of gaze form a number of geometrical shapes

relating subjects within the painting to the unseen sitters at whom they are looking. Kress and Van Leeuwen discuss another plane of connections between subjects represented in a picture and those who view it, in which they use the term 'vector' to describe the line of gaze which appears to generate a direct address to the viewer; visual representation of gesture can also create this kind of relationship. These invisible lines are a technical means by which the painter organises the space of a canvas; they also intersect in an affective sense with the subjects in the painting, following through the direction of their interest and attention, and in a semiotic sense by transcending the boundaries between the material form of representation and the represented. And in a historical sense, as Foucault points out at the end of the discussion of 'Las Meninas', the painting is itself a representation of a system of representation contemporary to the period in which it was painted.

The way in which the spatial relationships between the subjects on the canvas are set up are described by Hodge and Kress as 'spatial codes': the physical positions of subjects in a picture, relative to each other, provide information about the relations of power which are likely to exist between them; distance can signify indifference or alienation, whereas proximity might signify strength in a relationship, either love or caring or at the other extreme, hostility. In a discussion of an Italian painting, '*The Annunciation*', they point out that the spatial codes which prevail in the painting derive from the social, economic and cultural system of Renaissance Italy; hence the organisation of spatial relationships in the painting have to be understood in terms of the spatial codes which prevailed at the time. The viewer also draws on other constituents of visual representation, including colour, narrative, lines of gaze and gesture. The experiences which viewers bring to the viewing enable them to act interpretatively in relation to those constituents which have semiotic resonance for them; the historical distance of this painting from the contemporary period is likely to produce a transformation of the original codes into more contemporary ones which facilitate this interpretative process.

Another facet of the relationship between the viewer and the subjects in the picture is the extent to which the viewer is enabled to perceive what is seen as a realistic representation, as resembling a familiar physical world. By means of certain geometrical

techniques, spatial relationships within pictures were used to give an impression of physical reality. Berger discusses the way these techniques of perspective arrange the visible world of the picture so that its centre of focus is the eye of the viewer whose gaze appears to be drawn into the represented world. Perspective was a technique which was introduced during the early Renaissance period, and taken up enthusiastically by painters who used its rules as a means of tackling problems of representation in which there was much interest at that time (Plumb 1961). This was not just a matter of technical development however; Kress and Van Leeuwen discuss the way in which these changes in methods of representation were part of a change in social values and attitudes, taking place at a time when the visible, natural world was being seen as manifesting a scientific rather than a divine order. There is a dialectical relationship however between these cultural and technical developments: if there was a need to see natural objects as they appeared in their natural environment then techniques for representing them in this way were needed; at the same time, the development of such techniques made a 'scientific' manner of representation possible. And it could be argued that the development of a more 'realistic' style with a strong correlation between representation and resemblance, contributed to the perception that visual representation is a transparent mode; that there is something 'natural', in the sense of 'common sense' (Geertz 1983), about a mode of representation that allows a familiar object to be recognised.

Visual constituents then, provide ways of organising space, representing spatial relationships, colour, physical reality; technical devices for visually representing aspects of physical experience and social and material relationships. They also combine to represent experience narratively and metaphorically. Finally they have an interpersonal function, mediating between artist and viewer.

Writing

Writing is also a combination of visual constituents, many of which have already been discussed in the context of pictorial representation. In contrast to spoken language, 'time and temporality are replaced by space and spatiality.' (Kress 1997a, pp 16-17). Graphemes are arranged to conform to visual spatial codes which are specific to particular writing systems and genres of writing. In children's picture books, for

example, the written mode of language is often placed in a discrete rectangular block or a number of blocks underneath or to one side of the pictorial images, foregrounding the distinction between pictorial and linguistic meanings. However, writing can also be incorporated into the pictorial images, highlighting the metafictional quality of the book, its structure as a material object (Styles 1996).

The graphemes also have a spatial relationship to one another, not unlike that of the relation of perspective between objects. They can be different sizes and colours and drawn using different styles, in ways which produce variations in how the same character is visually represented, but only insofar as this can happen without affecting the organisation of the elements of any particular system of written notation (see Goodman 1976); in other words, a letter can be represented in different ways so long as it retains the unique characteristics of that letter in relationship to others. Just as the relationship between representation and resemblance is not a transparent one, neither is that between the visual and spoken modes of language. Indeed, Olson (1994) suggests that systems of writing were not created originally to represent speech, but to communicate information: 'The relation to speech is at best indirect.' (p67). Writing systems were used as models of speech, providing a theoretical and epistemological structure for the analysis of language. Viewed this way, a system of writing is not a temporary visual mode, whose meaning is realisable only through transformation into spoken linguistic form, but a complex system of visual signs in its own right. In this respect, the connection with spoken language is parallel to the relationship of resemblance between systems of representing visual objects and the objects themselves, whereby the former provide structures from which greater analytic insights into the nature of the latter can be derived. It is also similar in being mediated by a material, physical process, during which, particularly in the case of young children, 'the act of literally forming the words may well be, or become, the dominant or absorbing activity' (Emig, 1983 p112). Ormerod and Ivanic (1998) point out that traces of the technical process of writing invariably remain in the material product and reflect the social practices which were involved in its generation. Furthermore, according to Clark and Ivanic (1997) the physical nature of the act of writing (and even writing by means of a keyboard is a physical activity), contributes to the development of a disposition towards

the activity: 'expectations and habitual reactions enter the mind through the muscles of the hand.' (p 47).

A detailed analysis of the process by which children become writers, such as that undertaken by Bissex (1980, 1984), Ferreiro and Teberosky (1982) and Ferreiro (1984), reveals the constituents of writing which young children uncover in the course of reconstructing the system for themselves. So, for example, Ferreiro suggests that one of the first things that faces children is to establish the difference between a drawing grapheme with a strong connection between representation and resemblance, and graphemes which are 'linked with the object only by an act of attribution' (p155), in the sense of having a symbolic role which is established by the child. Writing graphemes have one of the weaker relationships between representation and resemblance, at least in alphabetic writing, and therefore a high degree of abstraction. The idea that a grapheme means or 'says' something might then be explored by the child placing an image of a written grapheme in close spatial proximity with the object to which it is meant to belong. This belonging relationship might sometimes be strengthened by placing the grapheme physically within the boundaries of the object, although this then raises the difficulty of distinguishing between a mark which is part of the drawing, and a mark which refers to the drawing. In developing their ideas about the relationship between the individual written graphemes, young children also explore ways of organising them on the page, as a set, and of differentiating between the individual marks.

What all children are engaged in in this exploration of writing is what Kress (1995) calls 'a constant, incessant, relentless analytic enterprise' (p 77). What seems to interest them is how the system works; what kinds of theoretical arrangements underlie the organisation of lines and shapes on the page such that they can mean things which they do not in any obvious way physically represent. The constituents of the system are the familiar lines and shapes and spaces of their social and material world; even the relationships of similarity and difference, which are an essential part of the process of theoretical reconstruction, are rooted in the experiences of differentiation which arise in the course of making sense of how people and objects relate to one another and fit into the world. The reconstruction of systems of two dimensional visual representation is a

highly abstract enterprise where one part of the system, in which the constituents more closely resemble the objects they represent, provide resources for theorising the more abstract parts of the system.

Resources for Mediating Meaning

Linguistic Tools

Words

Much reference has already been made to language in its mediating role: providing insights into silent semiotic activity, and being used in the mediation of semiotic objects. The theoretical position, that language has a unique role in interpretative activity and is the mode into which all other symbolic modes need to be 'translated' to be fully understood, has also been discussed and seriously questioned in the previous chapter. The evidence as far as it goes suggests that *each* mode has a unique function in the interpretative process, and the relative pre-eminence of any one, or even particular constituents of any one, is determined by the ways in which social roles and social environments effect the conduct of the process. Halliday (1975, 1978, 1993), sees a child's development and use of language as a socially interactive process in which language is used to express and interpret experience; the semantic system is a 'network of meaning potential' (Halliday 1978, p 40)) through which a 'theoretically infinite range of options in meaning,' (Halliday 1975, p16) is generated.

During the kind of interpretative activity which has been discussed, the nature of the semiotic object narrows down the potential of the semantic network. At a basic level, the semantic constituents then relate the material or symbolically represented object to a word or words which enable it to be realised linguistically. Such a view of semantic constituents could be interpreted as suggesting that all that is required is an appropriate level of knowledge of an existing word stock relevant to the object, its 'sense', and its related meanings, its 'reference'. Vygotsky (1986) develops this view, discussing the way in which children develop the concepts which are represented by the words in a language; a concept however is not 'an isolated, ossified, and changeless formation, (p98)', but a dynamic part of an intellectual process which involves communication, the development of understanding, and problem solving. In other words, the term

‘meaning’ is complex and opaque; it involves far more than simply linking an established definition to a previously agreed sign. Indeed, Vygotsky suggests that the development of this process involves children in making their own logical connections between semantic items, initially different to those connections made by adults or older children; so, for example, very young children might call all four legged creatures ‘dogs’, theorising a criterial significance for the characteristic ‘walks on four legs’. Nelson (1985) suggests that the potential for ‘misinterpretation of reference’ at this stage is considerable, but that what is remarkable is that ‘so much of children’s speech appears appropriate rather than bizarre’ (p7). This is a not dissimilar point from that made in the previous chapter, in relation to children’s ability to become literate in spite of quite diverse pedagogical experiences; again, an epistemological disposition would seem to be operating here, and at the very earliest stage of semantic development.

Semantic relationships during interpretative activity however, also go beyond relationships between word and related concept. Fairclough (1992) talks of ‘inter-discursivity’ in which meanings interpreted and generated in one discourse type draw on properties of other orders of discourse. Fairclough also discusses intertextuality in which the same process applies to relating meanings between texts. However, even extending the bounds of meaning in these ways does not fully account for how children use the semantic constituents in order to generate interpretations from texts. A significant element of this process would seem to involve using the constituents in transformative activity. So for example, Helen draws on the discourse between her mother and sister, and the discourse of the text *‘Not Now Bernard’* in using the meaning of ‘monster’ as part of her ‘play’ discourse; she doubtless also has other literary, textual experiences of monsters which have contributed to her ‘concept’ of the word ‘monster’. Yet to achieve this, she needed first to transform experiences from her interpersonal and material worlds into some kind of symbolic form, to make sense of the abstract, symbolic term, ‘monster’; she also needed to transform her sense of the word again in terms of the visual and literary representation in the book; finally she transformed these meanings to accommodate them to fit the imaginary interpersonal role of the play monster. The process did not necessarily happen in that particular linear sequence, but nevertheless, they would have involved some combination of these activities. As Belsey (1980) suggests, fantasy events ‘however improbable in

themselves, are *related* to each other in familiar ways.’ (p52). This understanding of a term in the literary sense is also part of the development of the meta-language (Olson 1984) which allows for this objectifying of the abstract.

As well as engaging in transformative activity, however, Helen is also using elements of a semantic network in the construction of signs: linking signifiers and signifieds derived from her social, cultural and interpersonal experiences in a process in which the linguistic element of the semantic constituents plays a part in a highly multi-modal process. The ‘word’ is a semiotic resource which, in collaboration with other resources, enables her to mediate meanings interpersonally, and realise them to herself. The word ‘monster’, for example, denotes certain meanings culturally and textually, some of which Helen would know and would share with other people in the room; but it would also have particular connotations for her which may or may not be shared. In this sense, the word represents both cultural and personal meanings. However, both sets of meanings involve what Kress (1993) describes as a tension between existing signs and ‘the producer’s need or wish to produce new signs.’ (p173). Belsey suggests that it is this tension or ‘contradiction’ that enables authors (and by analogy producers and interpreters of semiotic objects in general) to produce new signs. Children too, are engaged in this process.

Grammar

It is grammar which, in mediating meaning through linguistic expression, realises linguistic meaning potential (Halliday 1978, 1993). It is an internal property of language which does not exist in any separate, material sense. Words, whilst reflecting meanings symbolically, nevertheless can be seen as having a material existence in their heard, recorded or spoken forms; they also convey meaning to varying degrees without grammar. Likewise sounds and phonemes can be heard and recorded or written down. In the early stages of language use, the stage which Halliday (1993) calls protolanguage, these linguistic constituents are organised to communicate meaning without grammar: Halliday (1975, 1993) describes the systematic application of different prosodic features to the same small number of expressions, in order to generate different meanings. Weinberg and Tronick (1994) describe a similar process with babies of six months old where gaze, vocalisation, gesture and movement were

organised into 'multimodal configurations' in order to express meaning. This kind of multimodal combinatory activity, and a growing awareness of patterns within language, provide young children with formulae (Gee 1994) with which they can start to explore and construct grammatical systems of organisation. In this sense grammar is a more abstract property of language which, like other semiotic resources which have been discussed, derives from a process of epistemological action and consolidation.

The process originates in children's social and interactive experiences (McTear 1985, Wells 1986, 1994). These include experiences in which interpretative activity can in itself be seen as making a major contribution to the development and extension of these linguistic resources (Snow and Ninio 1986, Brice Heath 1986, Woodward and Serebrin 1989). During this kind of interaction, certain types of grammatical constructions are likely to be of particular significance. In the examples of adults and children reading together which Snow and Ninio discuss, the children find the need to make statements about the text which is being looked at, ask questions, and use commands which relate both to the situation of reading, or in some cases, symbolically to the images on the page. Throughout the examples, reference is frequently made to previous parts of the text, visual images which they are both looking at, and shared experiences and objects, for which referential and cohesive grammatical resources are needed: pronouns referring to characters previously discussed, deictic terms, 'this' and 'that', constructions which enable them to make reference anaphorically and exophorically. In other words, the linguistic choices which are made, are generated by the nature of the interpretative activity in which the children are engaged, and the interpersonal environment in which it takes place. Using grammar enables children to realise the full potential of the linguistic mode in their expression of meaning. What is *not* suggested by this however, is that the development of grammatical resources allows children to *replace* other ways of meaning making with purely linguistic ones (although arguably, as they develop full literacy they are likely to be encouraged to privilege the linguistic mode over others); what it does do is to extend the semiotic and interpretative resources which they have available to use to include the very powerful resources of language.

Sound Tools

Children who are talking and thereby using semantic and grammatical resources, are by definition, assuming they are using the spoken rather than the signed mode of a language, also using phonological resources. For those very young children discussed by Halliday, and Weinberg and Tronick (op cit), sound is used as a resource for meaning making separate from, respectively, grammatical and linguistic resources. The multimodal nature of language means that prosodic features can also operate as independent communicative tools; intonation, stress, loudness, rhythm and tempo in various combinations, are all ways of realising meanings. Thus in Halliday's data, the meaning attached to saying a name is changed from 'where are you?' to 'there you are!' by altering the intonation and stress on the vowels in a consistent way (Halliday 1993, p98). Crystal (1969) talks of these supra-segmental features as having specific functions (within semiotic activity) in the generation and interpretation of meaning. Hence they can contribute to the structuring of information in discourse, sometimes as a unique element of the message; for example using increased tempo to indicate an embedded phrase or clause (Clark and Yallop 1990). They can be used indexically, to identify people as belonging to different social groups, or emotionally; Abercrombie (1967) suggests that fluctuation in pitch of voice has 'an outstanding role as a bearer of affective indices' (p103). In addition, as Van Leeuwen (1998) suggests, 'every sound quality is a mixture of different features' (p106), with the overall impact being derived from the ways in which they are combined. These features all play a major role in the reading aloud of a text; prosodic indices are a significant element of the mediation of meaning during this process; part of Helen's understanding of 'monster', for example, doubtless came from the type of tone and stress which was deployed by Rose when she read the word during the reading of *'Not Now Bernard'*.

In addition to prosodic features associated with speech, certain other vocal sounds can also have a communicative function. In the very earliest stages of life, different cries and noises communicate a baby's needs and feelings. In this sense, all young children are aware of the communicative effectiveness of making different sounds. This extends to those features sometimes known as 'paralinguistic' (Clark and Yallop, Crystal, op cit): tones of voice used affectively to express anger or boredom, excitement or anxiety, can mediate either personal moods and desires, or symbolic ones acted out through play or

when reading aloud. Likewise, so can distinctive uses of vocal sound, such as whispering, shouting or laughing. The term ‘vocal gesture’ (Abercrombie op cit) has sometimes been used to describe these socially and affectively motivated sounds.

In addition certain interjections can be used either as part of, or independently of speech, to express distinct meanings. Cruttenden (1997) describes such sounds as ‘vocalisations’. This term includes such sounds as the lengthened schwa which might occur either during speech or independently of it; it also includes phonemes which are conventionally used to convey affective meaning such as [ʃ:] for ‘be quiet!’, and sounds conveying irritation, surprise or amazement. Cruttenden also mentions vocalisations used by children in the course of their play, either conventional or made up for a particular purpose. They are ‘interruptive rather than co-occurrent.’ (p174). What this suggests, as is the case with all the sound properties which have been discussed here, is that these vocal expressions are not incidental to meaning, but constitute another group of semiotic resources available for use during interpretative activity.

Gestural Tools

The inclusion of gesture amongst mediating tools demands at the outset a definition of what is included in a set of resources which could be considered to be reasonably transparent in meaning. The gesture referred to here is that which usually co-occurs with spoken language, or which is interactive in nature, not the complex range of gestures which make up the sign languages used by the deaf. McNeil (1992) identifies five types of gesture with three main kinds of physical movement involved: iconic gestures have a close semantic and mimetic relationship to the content of the accompanying speech, in the sense of providing a physical imitation or representation (although Morford (1996) makes the useful point that the representational nature of iconic gestures ‘does not guarantee the transparency of a symbol’s meaning’ (p168), unless there is shared cultural knowledge of the relationship between gestural form and meaning); beats (or ‘batons’) are a frequent accompaniment to speech, consisting of a tapping, or up and down motion, often on another part of the body, or on a semiotic object under discussion, which function as a kind of semiotic punctuation, helping to structure the content of the discourse; deictic gestures consist of pointing movements. The other two types of gesture use the same kind of movements, but for different

purposes: metaphoric gestures are also iconic, but they represent more abstract images or ideas; cohesives can be either beats or batons, and they also function at a structural level, emphasizing continuity in discourse, marking off on fingers when enumerating points, for example. Franco and Butterworth (1996) point out that pointing gestures have a declarative, informative function.

What this review of the types and purposes of gesture suggests, is that far from being transparent in meaning, gestures appear to have a range of different communicative purposes. McNeil suggests that gestures are ‘semantically and pragmatically coexpressive.’ (p23) with spoken language, and therefore enhance the quality of the message which is received rather than provide different information; hence, it could be argued, gestures contribute to communicational redundancy in not providing semantically distinct information. After all, so the argument might go, since not all speech is seen, gesture is not essential to the *reception* of meaning. Kraus et al (1995) suggest that accompanying a spoken message with gestures does not improve its communicative effectiveness. Where the same information is communicated through video and audio channels, therefore with and without gesture respectively, the same message is received by both viewers and listeners. The difficulty here is the dominant role afforded to language; only the same *linguistic* information was received, with the video message being communicated back to the researchers translanguistically. In keeping with such a position, the main conclusion which is drawn from this research is that the primary purpose of gesture is to facilitate spoken language. Research into the use of gesture by children blind from birth (Iverson and Goldin-Meadow, 1997) also stresses the significance of gesture in the production of meaning. On the other hand, Bavelas et al (1995) however, point to the existence of a small group of gestures which function solely to assist the process of dialogue, suggesting that gesture also has a significant interpersonal purpose.

This still keeps open the question of whether gesture has a separate semiotic function. Prior to the production of spoken language, children use gestures such as pointing as part of a *sequence* of communicative activity (McNeil, Franco and Butterworth op cit). Some children even combine gestures to make gestural signs (McNeil p300). McNeil suggests however, that once language becomes established, gestures are co-expressed.

Kendon (1994) points out that even if they are used co-expressively, they are still intentional communicative acts which, for the speaker are 'what is required for the achievement of expression at that moment' (p194); gesture is able to express different aspects of the same underlying unit of meaning. Alibali et al (1997) demonstrate that during certain mathematical problem solving activities, older children use different strategies in speech and in gesture, with gesture tending to express more tentative, implicit meanings; in other words, where speech and gesture are used to mediate meaning during an interpretative activity, they are capable of saying different things at the same time. Similar evidence is also derived from Iverson and Goldin-Meadow's work comparing the use of gesture by blind and sighted children. During a conservation task, both blind and sighted children sometimes produced differential information through linguistic and gestural modes respectively. This would seem to provide further evidence that the gestural mode is central to the meaning making process, and consists of a complex, flexible and varied set of semiotic resources, ranging from gestures which are part of a process of discourse, to a full system of communication in the case of sign languages. Finally, of major significance for this research, is the evidence that in the course of interpretative activity, it has the potential and capability to act independently of the linguistic mode.

Action as Tool

It is also the case that since gesture, as it has been discussed here, involves physical movement of arm and hand, there is a case to be made for there being a continuum from gesture, movement with communicative and symbolic purpose, to action, movement with an instrumental purpose. Within this continuum there are likely to be some movements which could be considered to have features from either extreme. Laban (1971) describes action as 'characterised by performing a function which has a concrete effect in space and time through the use of muscular energy or force' (p75). Manipulating texts and objects involve action to varying degrees: turning pages, positioning the body in relation to the object and moving around the room in the course of symbolic activity are actions used by the children in the observations discussed. However Laban also makes the point that action always has expressive elements; in other words, even seemingly instrumental actions are also able to mediate, for example, affective and symbolic meanings.

Gaze as Tool

As Kendon (1990) has pointed out, remarkably little research has been carried out about the role of facial behaviour during social interaction. It might be fair to say therefore, that gaze could be seen as the most transparent of the mediational tools under discussion. However, vision not only has a significant interpersonal role, but is also the medium through which interpretative activity involving the visual-spatial material world is mediated in sighted children. Widdicombe (1998), in an interview with the blind photographer, John Dugdale, quotes him as making a distinction between vision and eyesight. Dugdale describes his vision as unimpaired even though his 'mechanical sight' (p12) is defective; in other words, what is seen is not just the result of the physical process of looking. Millar (1994) also demonstrates this in her observations of the drawings of blind and sighted children: the former 'discover, invent, or infer the same type of symbolic representation as the sighted'; however they achieve this 'by a slightly different route' (p218). Gaze, in this respect, is one way of mediating the kinds of cognitive and visual resources which have already been discussed. It is also the case that in parallel with other means of mediation, gaze mediating analytic activity is used in different ways according to the nature of the work. Jay (1988) makes a distinction between gaze and glance, with the length of the look being significant (although Millar points out that there is not a necessary connection between length of gaze and complexity of perceptual judgements). To return to the observations discussed in the first chapter, the manner of gaze has a distinct semiotic function in perceptual activity: Helen scans a large area of the room with her gaze in order to analyse the social events which are taking place in it; during her play, the field of her gaze becomes more narrowly focused on the immediate area of the room around her own body. In Krishan's case, he uses his gaze to scan across the framed images on the pages of the Tintin book in a systematic pattern (see Butterworth (1987) and Smith (1971) for discussion of the role of visual perception in young children's awareness of body in relation to physical environment, and in learning to read, respectively). In some cases, there is a significant relationship between the analytic and interpersonal uses of gaze; as has been previously noted, Krishan's lack of social interaction, including eye contact, during his activity makes the analytic purpose of his gaze highly marked.

Turning to its interpersonal function, the word 'gaze' can suggest something open, almost vacant, whereas the sense in which it is used here is as a powerful expressive and communicative resource. Cole (1998) describes the situation of a number of people whose facial expression is impaired or entirely lacking as a result of certain physical and psychological conditions (Mobius syndrome, Asperger syndrome and autism). In the case of those with Mobius syndrome, who lack the ability to make facial expressions, the condition has a profound effect on their social existence. Cole suggests that it can even affect how they experience emotions, in the sense that by not putting out certain culturally accepted signals, such as smiling and moving eyes and other facial muscles, they do not receive reciprocation. He quotes one sufferer who describes having: "feelings of low self-esteem and loneliness and isolation in company ... An open, smiling face, for instance, is an invitation to come to a person." (p118). Ekman (1998) also notes that facial expression is influenced by both biological and socio-cultural factors and Cole refers to the role of gaze in rules of social engagement involving such things as age and seniority (see also Bremner (1993), Rodenburg (1993)). At the least transparent end of the scale, in the case of those whose language is signed, facial expression is of major importance, playing a significant role in the grammar of the language itself (Sacks 1991).

The range of facial behaviour during interpersonal gaze is extensive and can involve nods, frowns, pursing of lips, smiles, opening and closing of the mouth, raised eyebrows, tightening of muscles round the eyes, and so on (Ekman, Kendon op cit). Gaze functions during social interaction in conjunction and collaboration with language and gesture. Kendon (1967) identifies three principal functions of gaze: monitoring, regulating and indicating planning. When monitoring, gaze is used to check on the response and attention of the interactant, for example at the end of phrases within an utterance, at the end of a long utterance or following questions (what Franco and Butterworth (op cit) describe as 'social referencing' (p 312); Franco and Butterworth also report that even before language has developed, infants use gaze both during and after pointing to check whether they have succeeded in directing or re-directing their mothers' attention; Calvert et al (1997) report on the way in which monitoring of lip movements is used during face to face interactions to aid understanding or even anticipate what is to be said. In its regulatory capacity, gaze can signal significant points

within a section of discourse; a sustained gaze towards the end of such an utterance, for example, can signal that the speaker is about to finish talking; Streek (1993) describes the way in which gaze is used to highlight a significant aspect of the topic by being directed at a particular gesture which the speaker is using. Where gaze is used to indicate planning, it is the removal of gaze that is significant; looking away can signal ordering of thoughts before embarking on an extended utterance, or uncertainty of some kind. Arguably, there is not always a clear boundary between gaze as a mediator of perceptual activity and gaze in its interpersonal function. Comparison can be made with the continuum of movement into gesture: each of Kendon's functions requires analysis of a situation to some degree; conversely, visual interpretative analysis can also involve interpersonal mediation, often a combination of gaze, language and gesture.

Kendon also talks of gaze as having an expressive function, which demonstrates feelings or attitudes; there is a parallel here with one of the functions of gesture as a means of expressing rather than clarifying meaning for an observer; the blind still smile, for example, as a way of expressing feelings or attitudes, though not as part of their social interaction (Cole op cit). A parallel question also needs to be asked about the semiotic function of gaze in relation to language and gesture; in other words, whether, as with gesture, a case can be made for gaze, in its interpersonal role, having an independent semiotic purpose during interaction. Streek refers to the finely tuned collaboration of gaze and gesture 'co-operating towards maximum use of symbolic resources.(p276)' Weinberg and Tronick (1994) provide some useful evidence that gaze is one of the modes which infants use in systematic and motivated combinations in specific interactive contexts; gaze, voice, gestures and other behaviours were observed and separately coded during three different interactions with their mothers. During the interactions, the modes were differentially combined in ways which related to the particular events and were both 'elaborated and clarified' (p1513). This system enabled them to use the different modes to respond to the behaviour they were presented with, and to express different aspects of their needs simultaneously; for example, using a facial expression to express anger at the same time as signalling in other ways the desire to be picked up. The authors suggest that: 'we cannot view one expressive system as the primary index of emotions. Rather we must begin to evaluate the extent to which different expressive behaviours convey affective information on their own and, more

importantly, in relation to one another. (p1512)' These insights would appear to accord with those of Alibali et al and Ireson and Goldin-Meadow about the potential of the modes and their constituents to operate independently in collaboration with other modes, during interactional and interpretative activity. Finally, Weinberg and Tronick conclude that the motivation for the infants' system of combining the modes available to them into 'expressive units' is 'an underlying motivational state or emotion.' (p1513).

The Making of Signs

It has been suggested that the different semiotic modes are able to generate meanings independently; that they do not need translating into what has previously been described as a dominant mode of meaning making. It has also been observed that the visual mode, for example, has individual integrity and can be the unique meaning making element of a semiotic object; it also has the capacity to generate meanings in combination with other modes. In addition its meanings can be mediated through different modes such as language, gesture and gaze, particularly in socially interactive situations. The relationship between the modes would therefore appear to be one in which both the unique and the collaborative function of each needs to be accounted for. The process of generating signs during the interpretative activity in which these children are engaged is a complex one in which, as is suggested above, it would appear that they are able to control the way in which signifiers and signifieds are combined and worked together in order to achieve high levels of communicative and interpretative effectiveness.

The suggestion that certain semiotic modes need to be mediated by a form of language in order that their meanings might be fully comprehended has already been discussed. However, whilst it can be argued that a translinguistic account of semiotic activity fails to account for the autonomous features and differential functions of the modes during the process of generating multi-modal signs, an account of the process which draws on models of the linguistic system could still be used to explain the way in which the modes operate together. Saussure himself acknowledged that language is just one of many semiotic systems, albeit 'the most complex'. Linguistics, he suggests should provide the 'master-pattern' for all of these systems; in other words, there needs to be some way in which these systems can be considered comparable. Hjelmslev (1969) suggests that disciplines ranging from literature, art and music to logic and mathematics might

contribute to an extension of semiotic knowledge by being analysed according the requirements of linguistic theory. However, whilst both Saussure and Hjelmslev acknowledge the desirability of being able to relate semiotic activity in different modes, the use of linguistic models based on descriptions of linguistic function cannot take into account the features of modes with very different functions; an appropriate range of descriptors will simply not be part of the language of description. Kress and Van Leeuwen, for example, point out that in comparing linguistic and visual narrative processes, whilst comparisons can be made, these modes have not just different ways of representing the world, but also they represent different things of the world; direct correspondence between these systems would not, therefore, be possible. Nor would such an attempt provide the kind of analysis of the constituents and integrity of the individual modes which was suggested by Barthes to be a pre-requisite of understanding the relationship between them. Eco (1984) also acknowledges the existence of a range of semiotic activity and the desirability of a comparative and a systematic approach to try and provide explanations for aspects of human behaviour across modes of expression. Eco uses the term language with respect to other semiotic modes as well as the linguistic, talking about using languages to describe languages. Used in this sense, acknowledgement is made of the need to objectify knowledge of the functions of the modes in order to talk about them, using 'talk' here in the same cross-modal sense in which the term 'language' is used. This can be seen as a matter of mediation rather than translation: at times it is necessary to use one mode to mediate the meaning of another.

Kress (1997b, 1993) points out that multi-modality is an essential characteristic not just of semiotic activity in general, but more particularly activity at the level of the sign; all signs have to be seen as existing in a variety of different semiotic modes. Not only that (see also Kress & Van Leeuwen 1996) but the interest of individual sign makers is paramount in deciding which particular features of a semiotic object will be criterial in the sign making process. For Krishan, the visual and moving version of Tintin on the television screen provided a mediation of his reading of the pictures in the book which could then be mediated to me by means of spoken language. To put this another way, the signified (or in Hjelmslev's terms, the content), Snowy and Tintin being chased through the caves, is a recollected still, visual, textual narrative; the signifier (Hjelmslev's expression plane) has the same visual features, but represented as moving

and with the addition of spoken language. The sign is a complex of the conceptual and the material which then becomes the signified of a signifier in the linguistic mode. Not only that, but the mode or modes of the original signifier, namely the visual mode involving frames of illustrations in the book and their constituents, were criterial in this sign making activity, both at the original interpretative level and in the way in which he chose to mediate his meaning to me. Arguably, if Krishan had been able to read the print on the page as well as the illustrations, different features of the book might have been criterial. There is however, another significant element of this process. Helen, in incorporating a characterisation of the monster from 'Not Now Bernard' into her play, is using what is criterial for her about her current semiotic environment and what is available at that particular moment in time (Kress 1997a, Kress & Van Leeuwen 1996); but she is also making active choices about the manner in which she combines the modes in order to achieve her meanings most precisely. She is aware of what Kress & Van Leeuwen describe as the 'intrinsic characteristics and potentialities of the medium' (p34) and as a consequence is able to incorporate these in systematic and motivated combinations. The monster is included in her individual play involving making imaginary food but not in the interactive play involving handing the food round to the adults. During her period of individual play, she operates in a small section of the room, using small hand and arm gestures; at the same time she is listening to the story being shared between her mother and sister, and the more minimalist movements probably provide less distraction from the secondary activity than more expansive ones would. Incorporating the monster into her play signifies a symbolic link with her mother and sister as well as providing a character with whom to discuss her activity. When she offers the food around, she uses much bigger gestures and a variety of body movements as well as language; here she demands full and direct interaction with the adults in the room, combining gesture, gaze, movement and language in ways which communicate this effectively. All this activity is motivated and multi-modal but also involves a process of constant selection and combination in which attention is paid (albeit implicitly) to how the form and constituents of the different modes can collaborate to achieve the intended communicative purpose.

If what has been described is the generation and interpretation of signs, then this would appear to be a multi-modal, recursive and diachronic process. This is very different from

Saussure's view of semiosis as being concerned with a synchronic linguistic sign with 'two primordial characteristics' (p67), concept and sound image; such a definition does not seem to provide a sufficient description of what is happening (see Hodge & Kress 1988). Peirce's theory of the sign incorporates linguistic and non-linguistic processes within a triadic framework (Sinha 1988): the sign stands *for* its object and *to* its interpretant; remove either of these and the sign ceases to exist (Houser 1992). His definition of interpretant is that of 'a mediating representation' (Peirce 1992, p5), fulfilling the role of interpreter between an object and its correlate; for example, that opposite the word *homme* in a French dictionary is the English *man* and between them, mediating these definitions, an image of the same two-legged human creature which both words represent; or that linking every murderer to a murdered person is the mediating representation of an act of murder. To apply this to the examples which have been discussed: Helen's personified play monster can be considered a correlate of the material visual image of the monster in 'Not Now Bernard'; the mediating interpretant in this case is the monster with its cultural and textual characteristics of alter-ego and greed. Peirce's classification of interpretants as emotional, energetic and logical suggests that semiosis is a multimodal complex reflecting human experience (Lalor 1997). The potential also exists in the concept of interpretant for seeing the generation and interpretation of signs as a process which involves many other such operations (Eco 1979 p157). Such operations also have a progressive and inevitably diachronic element: the process of 'ontic dumping', for example, enables children to incorporate into their generation of signs those 'objects' of knowledge and experience which have themselves been generated through a previous process of semiotic activity.

Halliday (1993) also sees the creation of signs as involving constructing experience into meaning; even in the case of young infants, signs are made by 'exploring the contradiction between inner and outer experience' (p95). More than that, the generation of signs is social activity and it is at the point where the interpretation of experience intersects with social interaction that signs are created. Halliday cites the example of the gestures and vocal sounds used by an infant to communicate their desires about things which they want or do not want: these, he suggests, are symbolic acts with a communicative intent which caregivers interpret and to which they respond (see also Halliday 1975). Such sign making, he says, is not random but motivated and involves 'a

varied repertory of signs', a view well supported by Weinberg and Tronick's evidence discussed previously. As this expands, children have a range of strategies available for 'deconstructing and recombining' as a means of expanding the semiotic system. Not only that, but meanings having been expressed in one medium can become available for expression and combination in others (Eco 1979, Kress & Van Leeuwen 1996). What Halliday suggests here is that a process of motivated selection and combination of semiotic resources for the purpose of combining together in order to achieve the best levels of communicative and interpretative effectiveness, is one of active and deliberate construction of meaning from the outset.

These processes, in which children even as young as a few months old, are actively engaged in manipulating sign elements, suggests that they have a sophisticated understanding of the function and potential of semiotic matter, and of the dialectical possibilities in using them in combination and collaboration. In the dyadic models of Saussure and Hjelmslev, problems arise in accounting for the relationship between the sign elements during these semiotic operations. It is suggested that signs are linked through a process of chaining, with signs becoming signifiers in continuous linking activity (Barthes 1972). Whilst on one level there are evident connections between the elements, on another this model suggests a constant process of chaining in which semiotic activity consists of 'endless circular movements of a galaxy of signs (Sinha 1988).'; in other words in which a closed system is in operation. Whereas Peirce's system incorporates social and material processes and has greater descriptive potential for the purposes of this study, its description nevertheless is both complex and incomplete (Houser 1992, Hodge & Kress 1988).

Reference has been made throughout this discussion to the social and interactive nature of the semiotic process. At the root of this relationship would seem to be a connection between the material and affective nature of the constituents of the semiotic resources which are drawn on in the construction of signs, and the material and affective nature of the social and cultural world which children inhabit. Theoretic and symbolic constructs which are actively used by children would also appear to have been derived in this way. Helen's realisation of a symbolic monster in her play incorporates just such material and affective interaction. Volosinov (1973) considers that

consciousness itself only becomes a viable fact when it is realised in the material embodiment of a sign, 'whether in sound, physical mass, color, movements of the body, or the like.' (p11). Both signs themselves and the effects which they produce are phenomena of an external world which reflect worldly, in the sense of material, experience. Such a view does not, however fully allow for the operation of affective resources. Volosinov does acknowledge the existence of signs in a non-material state in his acknowledgement of the process of introspection (p37), in which it is 'one's own inner sign' which is the object of scrutiny; this is distinct from the observation of physical objects or processes. However that inner sign has derived from material conditions and ultimately returns to some form of outer expression.

Geertz also considers that the material forms of signs and sign elements are ideationally connected to the society in which they are found, but he takes issue with an extreme instrumentality which, it could be argued, infuses some of Volosinov's work. Nothing 'very measurable (p99)' would happen, he suggests, if works of art were not produced, but some things which were felt could no longer be said and, ultimately, maybe no longer even felt. The individual semiotic constituents used by painters or sculptors 'materialise a way of experiencing,'. A semiotic object can afford symbolic, affective and material satisfaction: Vurpillot (1976), for example, suggests that very young children derive both cognitive and sensory satisfaction from looking at a book; there is the cognitive, or to put it another way symbolic pleasure, derived from recognising visual images on the page, and the sensory pleasure of turning the pages in a regular rhythm (p82). By contrast, Volosinov claims that 'We do not see or feel an experience - we understand it. (p36). The point at issue here would seem to be place of the affective dimension in semiotic activity. Whilst it might be claimed that all affect could have its origin in, say, the material aspects of nurturing, this does not offer any level of description or analysis to elucidate its role in the semiotic process. If, for example, it is the case that Helen's incorporation of the textual monster into her play is motivated by a desire to maintain some kind of involvement with her mother and sister, or that she is feeling jealous of the attention her sister is receiving and wants to have the monster as well, then that needs to be considered a semiotic resource on which she is able to draw. In this case, affect would need to be considered as available semiotic matter. Gardner (1993) considers that 'access to one's own feeling life' (p240) rates as an intelligence in

its own right and that such an intelligence involves the ability to discriminate between these feelings and to incorporate them in symbolic activity; in other words to have the possibility to actively select affect as a constituent in sign making activity.

Related Studies

At this point it is necessary to consider other, more extended pieces of research which address similar theoretical concerns as those which has been discussed to this point. There are only a small number of studies (Kress 1997, Labbo 1996, Rowe 1994, Woodward & Serebrin 1989) which could be said to cover some equivalent ground to this one; broadly speaking, looking at young children's interpretative activity around texts as a socially constituted activity involving the motivated selection and combination of resources from different semiotic modes. Each of the studies looks at semiotic activity as part of the social environment in which it is happening. In addition, elements of an ongoing project which looks at the learning of older children in science classrooms (Kress, Ogborn, Jewitt & Tsatsarelis 1998), will be briefly referred to, to the extent that its descriptions of learning as a multimodal activity are closely aligned theoretically to some aspects of the descriptions in this study. The contribution of these studies to the theories under discussion will be considered, and the work will also be taken into account in refining the formulation of the questions which will be asked of the main data.

Kress describes the intention of his work as being above all 'to look freshly at children's engagement with print by treating this as just one of a plethora of ways in which they make meaning before they come to school. (p xix)'. This 'plethora of ways' involves using a 'plethora of means' in different dimensions which include not just the visual and aural means associated with written and spoken forms of language, but also touch, smell, taste and feel and other kinds of bodily engagement with the world. Only by examining all the means by which children make meaning, can the underlying principles through which they operate be understood. Such principles are characterised by what he terms a 'semiotic disposition' (p 13); children make signs by deploying resources which are to hand in 'motivated relations of form and meaning, (p12). One set of Kress' examples are drawn from observations of children playing. His focus here is on the material resources used in the construction of a semiotic object: a car made by two six

year old girls, for example, is constructed by putting together accessible household items. The children selected only those items which enabled them to construct a play object reflecting what was criterial for them about a car at that time. The resources chosen are familiar household objects which are transformed through their play into something with a new symbolic purpose. Although Kress discusses the sign made by these children rather than detailing the process of its generation, he does nevertheless point out that this it is mediated by a range of semiotic means, 'the signs of speech, of gesture, of facial expression, by signs of engagement or disengagement.' (p33).

Another set of examples involves objects created from resources commonly associated with literacy activity, paper, pens and crayons, scissors, glue and so on, but then deployed in play. These might be drawn onto paper and then cut out from the surrounding page, sometimes having additional elements glued onto them. Kress suggests that this framing process is a means of, literally, transforming process into object, shifting it 'from the world of contemplation into the world of action,' (p 25). Once removed from the page, it can be used in different ways: becoming an element of a game or a character in a story in the children's play. At each stage the object is transformed, taking on a new role or function. He suggests that this might represent children's awareness of the limitations of particular resources in particular situations: 'If the limits of imagination imposed by one mode of representation are reached it seems a decidedly positive situation to be able to move into another mode, which extends these limits in certain ways, or offers a different potential.' (p29). However, these examples also highlight the complexity of these resources with each of them encoding both the relationship between their form and their meaning and the process through which this relationship was generated. In this sense they carry a history; are diachronic as well as synchronic. This is particularly paradoxical given, as Kress points out, the frequently temporary nature of many of these signs, with children constantly re-using the same resources in different ways and transforming both the physical nature of semiotic objects and their meaning.

Whilst the objects which are created might have a transient material existence, the ability to use 'a multiplicity of semiotic means' (p79) reflects something much more enduring and progressive. In the case of learning to write a name, for example, he

demonstrates that over a period of a year, the transformations in the 'name' sign which his daughter produced reflected continuous analytic activity on her part, in which a range of resources and constituents of resources were used. Here the double function of resources are also evident with Emily involved in interpretative activity in which 'her writing of her name, ... represents ... her *reading* of her name.' (p66). Kress identifies three principal resources which she uses: numerical, spatial and sequential. In the case of the spatial resource he also identifies certain of the constituents she uses: shape, orientation and size. These resources are used in the visual graphic form of her name, the semiotic object. They are also the means by which she mediates her interpretation of this particular graphic process, using the resources to generate 'continuously new signs which she produces as a result of her transformative action in reading.' (p66). Her use of these resources to produce her own sequence of signs representing her name also provide the evidence, the resources, through which Kress reconstructs the 'actions, the processes, the cognitive and affective *work*' (p72/73) in which she is engaging.

Rowe's study analyses 'literacy events' which are not based in a home environment, but take place in a pre-school centre; she describes these events from the perspective of the three year old children on which her study focuses. Within the study, understandings about early literacy processes are informed by both social and cognitive perspectives. It is also, according to Rowe, set in a semiotic framework, since she argues that written language learning is 'only one subset of the many forms of communication used by humans to construct meaning about their world.' (p2). In addition she stresses the multimodal nature of literacy and the need for it to be considered 'in the broader context of learning to construct and interpret multimodal signs and events.' (p2). In doing this, she suggests, children interpret the semiotic potential of the particular literacy events with which they engage; a similar view to that expressed by Kress when he talks of children using 'what is to hand' (p31) in their interpretative activity. Rowe stresses that this disposition is one that starts from birth when 'children begin to learn the semiotic potential of their social world' (p3); a view also supported by evidence from some of the research cited above.

Rowe suggests that the children whom she studied, as well as using literacy to communicate messages in graphic form, also engaged in events which she describes as

being either process dominated or interaction dominated. In the former case, the children were concerned with the physical and material nature of the task, but were not really interested in assigning meanings to what was produced. They spent time experimenting with characteristics of different media and objects, such as types of markers, carbon paper, staplers and even a staple remover. Rowe describes a number of material 'graphic process' (p39) which one child, Ginny, uses to mediate her generation of semiotic objects including using colour, taping up sections of the piece of paper, cutting and writing her name. These activities are reminiscent of Kress' description of children transforming process into object, although in Rowe's study, we are not provided with evidence of their use in play. This is perhaps a result of their being produced in a more institutional environment where outcomes were more likely to be structured by adults rather than by the children themselves.

In the case of interaction dominated events, the social function of the text constructed was what was important, with apparently little care or attention being paid to the form. She describes an instance when another child, Josh, watches while Rowe writes a response to a child's letter, then picks up a paper plate lying on the table, scribbles from side to side quickly across it, and presents it to her as a 'note'. This particular event, however, then develops in ways which exemplify Kress' observation about the transient material existence of these signs: more notes are exchanged, but these are quickly transformed into 'tape and paper constructions' (p35) which are then thrown into the air to demonstrate their ability to move or fly. What is interesting about this and other similar examples is not so much the extent to which they can be subsumed into these broad categories of process and interaction, but the way in which each transformation deploys different resources. Not only that, but it could be argued that both process and interaction are equally important in, for example, the first event. Even though the child spends less actual time generating the object than on other occasions, the event consists of both the action with the coloured pencils to make this particular type of mark on the plate, and language used performatively ('this is for you'), transforming the marked plate into a message; action, and graphic and linguistic resources are all of equal importance in the child's mediation and communication of his meaning. Rowe's use of these, and other broad distinguishing categories (process-dominated, product-dominated, personal learning themes, shared literacy registers), whilst having a role in structuring the

extensive data she has collected, nevertheless could be seen as at times obscuring the very nature of the process she is investigating.

Labbo's study concentrates on how young children in a kindergarten make meaning using a variety of computer generated symbols. She investigates how the symbols which the children uses were generated, the kinds of meanings assigned to them and the ways in which these meanings were conceptualised and applied. Labbo describes using a semiotic analysis for her study which she suggests is particularly appropriate in studying children's use of a medium which uses 'a range of symbol systems and tools, which include sound effects, clip art animation, music, keyboard typing, special effects, and color effects.' (p359). Linguistic forms, it is suggested, hold a privileged status in schools and an analysis which takes a wider view of symbolic expression 'may help extend the conception of literacy from only the reading and writing of printed materials to include literacy as a multimedia, computer-based composition.' (op cit). However it is also important, reflecting on both the work of Kress and of Rowe, and on discussion in this and the previous chapter, to reiterate that all printed texts, including those which are predominately linguistic, are multimodal in production and form. If all children's semiotic activity is multimodal, then what is potentially interesting about Labbo's work from the point of view of the work in hand, is the extent to which use of semiotic resources connected with computer activity involves the same kind of processes that are involved in other kinds of interpretative activity.

One category of resource which Labbo identified was the different 'stances' which were taken to the screen. It might be used as a landscape with children exploring the use of symbols and objects, the use of icons and spatial operations, as well as the use of the keyboard and menu. In addition, 'as they explored the landscape ... through repeated individual and exploratory activities, they learned action schemes that they generalised into dependable procedures or routines to follow.' (p366). The screen was also used as what Labbo describes as a 'playground', when activity was characterised by children inviting others to join in a 'joyful and social' occasion reflected in playful body gestures and movements and expressions of delight and laughter. During this play they often shared graphic jokes, using computer resources to draw funny and ridiculous pictures of people or characters they knew. Like many of the examples from the other studies,

these drawings were subject to frequent transformations and were rarely saved: 'it was not unusual for part of the screen to be erased as soon as the experience had been shared and laughed over.' (p369). However, as described in the previous study, although the material sign might be transient, at a diachronic level the learning which took place through all these transformations endured: 'the children's production, interpretation, and creative use of symbol systems built on prior experience and schemes of action they had gained during their exploration of the computer as object.' (op cit). In this, Labbo provides further evidence of the way in which epistemic procedures are transformed into semiotic resources which are then available for re-use.

Children engaged in another kind of play using the screen as 'stage'. Here they entered into roles within various kinds of narratives including those based on family relationships, on television, film or book characters, or 'stereotypical or job related roles' (p370). In other words narrative tools were a key resource for this kind of play: a point discussed in the previous chapter. These play events did not often have a linear development, but were often fragments inspired by readily available resources such as stamps and clip art icons. Labbo describes the narrative as revolving round the characters which are created on screen with the children moving in and out of roles as designer, director, narrator and actor. The final 'stance' which is described uses the screen as a canvas with the children deploying a range of graphic resources to create 'a carefully crafted pictorial composition' (p373). This activity involved more individual concentration with any accompanying talk tending to involve discussion of the aesthetic process in which they were engaged. The ways in which objects were represented also reflected what was criterial about them for the children creating them: 'their work was more a reflection of what they knew than what they were seeing at the time.' (p375). This is the same phenomenon observed by Kress in his description of the two girls creating a car to play in. In both cases the resources were carefully chosen by the children to reflect what was significant for them about the objects represented.

Each of these studies provides substantial evidence of children using a wide range of semiotic resources; whether they are playing, using the computer or engaged in literacy based activity, they use the best resources to hand to interpret and generate meanings. There is also some evidence of children combining and linking resources across modes

in their sign making. Kress talks of them *constructing* 'elaborate, complex representations' (p33) of their cultural world. Rowe refers to children using language to extend meanings formed as they made texts through graphic and other means. She also refers to the range of modes of communication used by children to 'support and compliment one another in expressing a message.' (p163); children not only connect these different types of information, but 'accomplish this by orchestrating multiple modes of expression.' (op cit). Labbo refers to children intertwining 'various symbolic modes to create an effect they found particularly meaningful.' (p364); and interweaving 'thought, activity and language', with the generation of graphic symbols. She also refers to children combining resources into new resources which could be drawn on when required (the 'ontic dumping' discussed above): 'they were combining those graphic and linguistic symbol vocabularies into meaningful concepts and categories that were directly related to action schemes that they employed when they wanted to manipulate and transform objects'. (p367).

Reference is also made to what it was suggested earlier in this chapter could be characterised as an epistemological disposition. Kress refers to the need to understand the *principles* which children use in representing the world; evidence of this disposition is to be found, for example, in what he describes as their 'continuous analytic engagement' (p79) in the course of learning to write a name. Rowe uses the term 'metacognition' to refer to children's conscious awareness of the process of their own learning; a consciousness she suggests derives from interaction with others in a social environment. So, for example where problems arose, children shifted from using literacy to reflecting on its 'content, processes, or purposes' (p138).

Woodward and Serebrin's study differs from those discussed above in concentrating on the interaction around a text between just one child and an adult. In this it has some close parallels with the main data being considered in this thesis. The study involves story reading sessions between a three year old boy and his father in which interpretations were generated by a joint negotiation of the semiotic resources available to them. They point to the way in which the adult enabled the child to make equal contributions by not 'privileging or restricting the reading experience to the linguistic signs in the text,' (p404). Indeed, as has been noted in the studies discussed above, 'each

learner ... selects from those resources which are personally available to him at the moment,' (p406) The authors identify significant sign systems used as being primarily illustrations within the story and 'intratextual and intertextual connections' made to other parts of the story and to other textual and life experiences; although arguably in the latter case these are likely to be complex multimodal signs involving the combination of resources. The verbal reading of the story is also additionally mediated by other modes: gesture, facial expression, prosody and movement.

The interpretations which are generated through these connections however, were not always agreed on between father and son (the question of the co-existence of dinosaurs and humans, for example). This process of generating interpretations which were different to those suggested by his father, involved the child drawing on elements of those resources which enabled him to make a meaningful hypothesis (what his mother said, a school visit, other books). The authors note the 'significant role that anomalies play in initiating conversations' (p405). Non-consensus was part of 'a complex relationship in which differences in interpretation function as resources for enriching both readers' understandings' (p401). In other words, both adult and child learned from the experience, deriving new insights and resources from both consensual and non-consensual interpretations.

Like Kress, the authors of this study note the way in which the child reader selects from those semiotic resources available to him at that time. The 'potential' of the resources are constantly transformed through the readers' interpretations to generate further 'semiotic potentials'. The child is able to be fully involved in this process by his father 'not privileging or restricting the reading experience to the linguistic signs in the text,'. In addition to engaging with the oral reading of the story, both participants draw extensively on the illustrations to generate their interpretations, as well as what they describe as 'intratextual and intertextual' connections to other reading and to experiences 'outside the text'.

The 'Rhetoric of the Science Classroom' project is very different from the study in this thesis and the studies discussed above, in that it focuses on learning in science classrooms in secondary schools. Nevertheless there are some common areas of focus

and some similar questions raised. The work is set in a social semiotic framework in which a relationship between the everyday world of the teacher and pupils and that of the pedagogic and conceptual world of the classroom is assumed. Like the other studies under discussion, the generation of signs in teaching and learning is viewed as a multimodal process in which teachers and learners select and link modes in order to create specific meanings. The project is looking at micro level evidence from within the classroom in order to look at the nature of the resources used and the processes involved in their deployment. Although the context for the project is very different from this study, nevertheless the underlying common ground means that at some future stage, some interesting comparisons might be made.

The Final Questions

It is at this point that I shall turn again to the questions which I have been considering, with the purpose of refining and clarifying them before presenting analyses of the main data, the videotape of Anna and her father Rob engaged in different kinds of interpretative activity. This is by no means a simple task: words like ‘refining’ and ‘clarifying’ suggest a process of clearing away extraneous matter, maybe even simplifying. The discussion that has taken place in this and the previous chapter however, whilst going some way towards clarifying a number of issues, nevertheless has raised many more and in so doing has emphasised both the complexity and the significance of an interpretative paradigm which has children’s socially and personally motivated, multimodal, semiotic activity at its centre.

Having said this, the discussion has moved in such a way as to extend the focus of the questions concerning the nature and functioning of semiotic resources. A distinction between resources which comprise an semiotic object and resources which are used to mediate meaning was discussed in Chapter 1, and identified as a significant element of any description of resources used during interpretative activity. The first of the questions which were outlined in the first chapter can be usefully reformulated as follows in order to incorporate this distinction: what kinds of resources does a young child draw on during interpretative activity around semiotic objects, and how is this activity mediated?

Evidence of children's motivation to make sense of texts, and to interpret the nature of interpretation itself has recurred frequently throughout Chapters 1 and 2. It has been suggested that such a concern with the structural organisation of symbolic forms demonstrates evidence of what has been termed an 'epistemological disposition'. Such evidence is particularly manifest in the systematic and motivated way in which young children organise and combine resources to achieve communicative and interpretative effectiveness. This element will therefore be incorporated into the second question as follows: how are resources selected and combined to achieve communicative and interpretative effectiveness, and what evidence is there of an epistemological motivation in this process?

The third question, the relationship between the resources used and the social environment from which they are derived will be a central element in answering the above questions. However, it is complex question to which a thesis of this length cannot do full justice. However, it will of necessity inform the analysis in Chapters 4, 5, and 6, and will be explicitly, albeit tentatively, addressed at the ends of Chapters 5 and 6.

Chapter 3

Introduction

In this chapter it is proposed firstly, to discuss the different theoretical principles which inform the methodologies used during this research and the rationales behind their use. Within this discussion the status of the personal narratives' data which is central to the discussion in the previous chapter will be described. Secondly, the organisation and structure of the video tape, which provides the substantive data of this research and which is the subject of analysis in the following three chapters, will be described. In addition, the process by which the categories used in this analysis are derived, and the method of analysis to be deployed in the study are scrutinised. Finally the validity of this type of study and analysis will be discussed. The research in this thesis is broadly qualitative in nature, but does not subscribe to a single approach; rather it draws on a number of related methodologies in an attempt to derive the best level of clarification and analysis of the questions posed of the data; it is considered that any one of these adopted as a single approach or methodology would not have sufficient explanatory power to account for the data in the light of the questions asked of them; the emphasis is on the growth of understanding 'that results from being open to multiple perspectives.' (Guba 1990 p135).

Whilst the purpose of this chapter is principally to describe and discuss the methodologies used in the course of the research, it also performs a transitional function, moving the focus away from personal narrative evidence to the videotaped data which will be subject to more detailed and systematic analysis. This is not however, an unaccountable jump from one type of evidence to another, but a transition which is based on the evolution of theory through a process of observation, study and introspection. The professional and personal observations which were discussed in some detail in the previous chapters provided a number of insights which gave rise to the postulation of views about the nature of young children's interpretative activity; in the early stages of the research the video tape too, was an unstructured source of interesting ideas and starting points. Together they provided a range of evidence which

gave rise to a number of theoretical perspectives around a central issue, the apparently independent nature of this interpretative activity; in turn, these perspectives gave rise to the set of questions proposed at the end of the previous chapter. It is proposed that more structured analysis of the video tape will provide the basis for some answers to these questions.

All this might suggest that this was a more tightly organised and linear process than in fact it was. There was a complex diachrony to the process, with the observations and activity happening over a period of time; one observation for instance, Krishan's reading of the Tintin book, took place well before the research was formally started; the observation of Rosie and Helen happened about four years later; the video tape of Anna was made in between these events; and the professional observations took place over a number of years, continuing to be significant throughout the duration of this research. In addition, the boundaries between the different forms of evidence were never clear cut but always flexible, providing constant opportunities for comparison and confirmation. These factors have led to a continuous, forwards and backwards dialogue between myself as researcher and the different instances of evidence over different periods of time. Such a dialogue, and indeed the extended period of time itself, provided extensive possibilities for review and reflection around the evidence and theory.

Research Traditions

The three principal methodological traditions used in the process of interpreting evidence and deriving theory during this research, are hermeneutics, ethnography and discourse analysis. Each of these is, of course, an extensive and complex discipline in its own right. It is not within the remit of this thesis to discuss each in detail, but it is necessary to consider the philosophical position of those methodologies which are being drawn on directly. The decision to incorporate different methodologies was made on the basis of the differing requirements of the research at different stages of thinking and development (see Bryman 1988 ch. 6); indeed, they have provided a set of semiotic resources in a parallel process to that engaged in by the children discussed in this research. Since the research arose from reflections on certain of my personal and professional experiences, it was of necessity, in the early stages of thinking in particular,

a highly reflexive activity (Hammersley & Atkinson 1983). The identification and formulation of the research problems involved extensive interrogation of the personal evidence in which I had a high level of involvement; this evidence is inclusive of the social and cultural environment of which it was a part. In order to extend thinking around the problem, it continued to be drawn on, but at the same time it became evident that a more structured approach was also needed in order to formulate and develop theory; at this stage a methodology which involved an analytic approach to the data was required.

Ethnography

Although this is not an ethnographic study, nevertheless a number of methodologies that typify this kind of research are drawn on: the use of personal narratives, the description of activity and experience as socio-cultural action; and the use of a multi-layered form of description from which theory can be derived.

Schwandt (1990) describes these methodologies as being 'directly concerned with understanding as nearly as possible some aspect of human experience as it is lived or felt or undergone by the participants in that experience.' (p266). In addition these experiences need to be considered in their naturally occurring environment, as opposed to an experimental one. This environment also includes the researcher, as Hammersley & Atkinson's concept of reflexivity suggests. Given this, Sparkes (1995) notes with puzzlement the persistence of the 'author-evacuated text' within much qualitative research writing, 'that calls for the engagement of the individual researcher's *self* with the people involved in the enquiry' (p164); citing Wolcott (1994), he suggests that researchers need to be story tellers. Van Maanen (1988) discusses variations on the tales that can be told in different circumstances and for different purposes, such as realist, confessional and impressionist tales. In a sense this not only brings the researcher's voice into the writing, but also allows for the inclusion of different kinds of evidence. The basic 'observations' which I have included in Chapter 1, have been expanded with considerable social and biographical detail; the very process of constructing a narrative involves remembering, reconstructing and asking questions;

explaining things to oneself in ways which ultimately enable them to make more sense and to be understood at a deeper level.

Corradi (1991) points to the way in which such narratives give ‘an order to the whole of past events, in finding an unbroken line that establishes a necessary relationship between what the narrator *was* and what he or she *is* today; the narrative mediates between past, present and future,’ (p107). This is reminiscent of the point made previously about the value of a time span in the review and reflection of ideas and evidence. But not only does this allow for a referential relationship between incidents and episodes across time, it also provides opportunities for transformative activity; viewing or comparing events that have taken place at different times can transform their significance and therefore the role they play in the development of thinking. So, for example, my recollections of Krishan looking at the Tintin book underwent transformation when I thought about them in the light of Anna’s interpretative activity on the video tape and vice versa. This is not to suggest that the meaning of the recollection changes in any fundamental sense as a result of comparing incidents either synchronically or diachronically, but rather that such comparisons uncover further meanings and interpretations.

Words like ‘story’ and ‘tale’ might suggest something fictional, and whilst it is always problematic to establish the absolute accuracy of reflection, nevertheless, as Corradi points out, criteria such as reliability and validity apply as much to personal narratives as to any other kind of writing. It also needs to be recognised that the personal experiences of the researcher (and the participants), even when not included as part of the written narrative, are nevertheless drawn on in the analysis of data and the development of theory. In this sense, in terms of this research, they are as significant in the sections which involve the structural analysis of data, as they are in those sections which make direct reference to them. Again there is a parallel here with children’s interpretative procedures. Many of the interpretative resources drawn on have long since ceased to be directly connected to their experiential source, in the sense of someone still being able to recount the story of how something became known. They have long since become subject to Feldman’s notion, discussed in Chapter 1, of ontic

dumping; a stock of resources, including symbolic resources, which have been derived from social and cultural experiences (see also Bruner op cit) and which are available to be drawn on when needed for interpretative purposes.

The narratives which are discussed in Chapter 1 incorporate socio-cultural information about both participants and researcher. It follows from this that since by its nature the personal knowledge deployed in such narratives is ready to hand and unrestricted, it can also be easily accessed, adapted and transformed. Information derived in this way is also often available at a very micro level of detail, although this detail is likely to be restricted in the sphere of its focus. Nevertheless, as was illustrated in the examples in Chapter 1, it is this micro level of detail which needs to be drawn on to illustrate relationships between the social institutions in which children are involved and 'the semiotic constituents of the objects of their interpretative activity' (p9). This movement between these macro and micro levels of description is consequent upon access to a depth of knowledge of the material detail of these children's social and cultural existences which extensive personal knowledge makes possible; in other words it makes some description of dispositions which arise from these social and cultural existences a possibility. Although it is tempting to look to some kind of structural analysis as a way of achieving this early in the interpretative process, in fact, certainly in this study, this less formally structured, but highly reflective and analytical activity pointed in the direction of what exactly needed analysis in order to move thinking forward. It also provided fertile ground for the emergence of theoretical problems and issues.

In the case of the video taped material the situation is somewhat different. The tape shows twenty three month old Anna, engaging in interpretative activity with her father, Rob, around four semiotic objects: a counting book, a plastic sorting posting toy, a plastic stacking game and a sheet of cartridge paper destined to become a mothers' day card. At the time it was made, Rob and I were colleagues, working as part of an advisory teacher team with two other people. The video arose originally out of a professional need for evidence of early literacy development; ancillary to this though was Rob's personal interest in making a record of his daughter's development. There are therefore stories within stories involved here, each with different participants: as an

advisory team we had had many discussions which had contributed to the decisions which Rob made about what he was going to include on the film; we were therefore all participants in one sense, although that participation did not amount to being physically present whilst the recordings were being made; Rob's relationship with Anna and her level of engagement in the activity also affected both what was included on the video and how it was made; in addition, although the other members of their family are not physically present either, they are very evident as significant participants in many of the episodes of the film. All this makes the video a multi-layered text, the analysis of which is likely to be further enhanced by a more detailed level of ethnographic information relating to Rob and Anna and to the making of the video. Since this ethnography will be drawn on during the detailed discussion of the tape, it will be included at the beginning Chapter 4, the first of the chapters focusing on the detailed analysis of the video tape data.

The 'micro' description which is used in the analysis of the video tape is characterised by what Geertz (1993), borrowing a term from Ryle (1971), calls 'thick description'; the term is used by Geertz in the sense of attempting to describe a multi-layered and detailed description which can act as an instrument for engendering multiple levels of analysis. Such an instrument is particularly significant in research like this, where the subject is of an age where strategies such as follow-up interviews would be unlikely to elicit further clarification; this is partly because at the time the video was made, Anna was still developing as a language user. However, there is also a paradox contained within this very difficulty; it was the observation that, in spite of not being a fully developed language user, Anna nevertheless appeared to have a wide range of interpretative strategies available to her, which gave rise to the question of how and why she made sense of the different semiotic objects which she encountered. One way of trying to answer that question is to produce a thick description of all the interpretative strategies which Anna uses. This means taking nothing as given, but including what Parker (1985) describes as a 'network of transparent actions' (p1086) which often are taken for granted or go unnoticed. To turn to Geertz (op cit) again, the use of such a micro level of description makes it more possible to gain access to 'the conceptual world in which our subjects live' (p25).

Hermeneutics

Schwandt (1990) refers to a hermeneutic method of achieving the 'interpretive explanation' that is consistent with thick description. According to Parker (1985), such an approach 'seeks to elucidate and make explicit our practical understanding of human actions by providing an interpretation of them.' (p1088). Such an interpretation is not however fixed and definitive, but is uncovered progressively. Preliminary understandings of which questions need to be asked, what needs to be studied and what might count as answers to these questions will need to be tentative; by continuously returning to the object of enquiry, interpretations are revised and new questions raised. The description used in the personal narratives consistently tries to probe beyond the obvious and transparent in the attempt to find ways of looking at the 'conceptual world' of these children. Although this provided a starting point for the analysis of interpretative strategies used by Anna, constant interrogation of the video tape and a number of attempts at deriving categories were tried out before some kind of consistent pattern started to emerge.

Guba and Lincoln (1989) propose a hermeneutic methodology, whereby initial constructions (in the sense of agreed meanings) are used to elicit other constructions which derive further levels of analysis, and then from those levels, revised or new meanings. Such a system certainly reflects the spirit of the process I have been discussing: the intention at each stage of the research is to develop descriptions and analyses capable of deriving levels of interpretation which can progressively advance explication of the research questions; hence, the personal observations and early viewing of the video tape derived sets of meanings which were then reviewed to the point where a more detailed and systematic analysis seemed to be necessary for further interpretation to be possible; in other words, the theory was 'grounded' in the data (Glaser and Strauss 1968). However, as has already been suggested, these stages in the development of theory did not progress in a linear fashion, but were highly recursive, with evidence viewed across boundaries of time and re-interrogated in different circumstances. Smith (1993) suggests that this is a process which has 'no natural or nonarbitrary starting points or ending points,' (p187). As has already been explained, the

video tape of Anna was viewed initially as having an instrumental purpose, as a resource for in-service sessions with teachers; once this research was embarked on however, the more the video was watched, the more it became apparent that one of its most interesting features was the nature of Anna's interactive strategies in relation to Rob and in relation to the texts she was engaging with. This quality had always been there of course, and was far from inconsistent with its original function, but the changed purpose for the viewing meant that the video tape became a more open ended resource which might (or might not) provide evidence of consistent patterns of interaction and semiotic activity; this was in contrast with the use of the video for in-service purposes where parts of it tended to be used as discrete examples of evidence in support of a particular view of learning. In other words, theory was being derived from the data on the video tape rather than being applied to it.

Guba and Lincoln (op cit) refer to a 'constructivist' paradigm (see also Guba 1990) which is inclusive of a hermeneutic methodology and within which interpretations are constructed by all participants so that they are 'consensually derived' (p 139). The question of the role of the participants in the research under discussion has already been touched on in the previous section. The problem with attempting to maintain the involvement of the participants was partly a practical one, given Anna's young age and the extended period of time over which the research took place; more importantly though, the concentration on the video taped activity demanded a different methodology in order to take full advantage of its potential for a micro-description of interpretative activity. Thompson (1990) discusses 'depth hermeneutics' (p272), a methodological framework which incorporates a formal or discursive analysis of 'ways in which symbolic forms are interpreted and understood by the individuals who produce and receive them in the course of their every day lives:' (p279). Such an analysis would, it is suggested, need to focus on the structures, patterns and internal organisation of such symbolic forms, but not in a way which views these elements as discrete and separate from the socio-cultural environment of which they are part. Thompson suggests three phases of analysis: a social-historical analysis; a formal or discursive analysis; and a process of interpretation and re-interpretation; each of these types of analysis are interdependent and are essential steps in the process of interpretation.

Thompson's approach is extremely useful in its suggestion that different methodologies can be 'construed as necessary steps along the path of interpretation.' (p21); in particular that an approach involving some kind of structural analysis might be the most powerful at a certain point in the process of interpreting data. This analysis cannot be considered to stand alone however, or even to be considered as some kind of ultimate goal, but rather as 'analytically distinct dimensions of a complex analytical process.' (p280). The inclusion of this kind of analysis would seem to be an essential pre-requisite to a description of how Anna engages in the interpretation of symbolic objects, not just as a means of answering questions about the nature of the process she is engaged in, but also as a means of elucidating the relationship between the interpretations derived from the first and the second phases.

Discourse Analysis

Consistent with the methodologies which have been discussed, any categories used in this more structural level of analysis would need to be derived from the data itself. However, this presents a very open task which needs to be clearly informed by the requirements of this particular research and by insights from relevant methods of analysis. Anna's interpretative activity can be seen as an example of an extended piece of discourse focusing on interaction between father and daughter around the different semiotic objects; the video tape on which this is recorded is also a text in its own right; a structural analysis will therefore need to take both these factors into account. Analysis of discourse (in the sense of an extended piece of spoken language) and text (in the sense of discourse in a form available for analysis), are the province of a field which is both wide and cross-disciplinary (van Dijk 1990, 1985).

Corsaro (1985) discusses the contribution which certain theoretical models of sociology (in particular those of Cicourel, Gumperez, Sacks and Schlegoff) have made to discourse studies. In particular he points to the stress which they place on the studying of discourse in natural settings, on the significance of social context, and on the importance of recognising participants' abilities to create and transform contextual features of discourse. In terms of methodological strategies, he emphasises their recommendations for extensive ethnographies as part of the analysis, and the necessity

for multiple levels of information processing, for 'thick' description. These are strategies which have already been identified as useful methodological features in this research. A relevant development since the work of these sociologists is a concern with the ideological structure of discourse and the way in which power relations are manifested and enacted within it. Such studies are deemed to incorporate 'critical' approaches (Fowler 1996, Fairclough 1992, Van Dijk 1990). These, according to Fairclough, 'differ from non-critical approaches in not just describing discursive practices, but also showing how discourse is shaped by relations of power and ideologies' (p12). It has already been mentioned that the making of the video tape originally had a professional element to it which involved power relations at an institutional level; however, the interactions between Rob and Anna also involve negotiating control of the different events which take place over the course of the activities on the video tape; and it cannot be assumed that just because Rob is the adult parent of a very young child, that he controls events at a micro level. Indeed the evidence on the video tape of Anna's ability to manipulate and control events in order to achieve her ends is a significant feature.

Turning to the micro, structural level of analysis, the emphasis in discourse studies has predominately been on the structure of the linguistic mode of communication, both in its spoken and written forms. Linguistic units are used as 'tools' (Fillmore 1985) with which to analyse discourse and text: units might comprise features uniquely from phonological, grammatical, semantic or lexical divisions, or these features in combination; the ways in which these units cohere to achieve meanings; the types of discourse and text and interdiscursive and intertextual relationships (Fairclough 1992); and at the level of the structure of conversation, features such as openings and closings and turn taking (Schiffren 1994, Goodwin and Heritage 1990). Whilst such approaches are useful in providing models of types of descriptive and analytic detail required for structural analysis, the exclusive emphasis on linguistic categories makes them insufficient for the purposes of this research with its emphasis on the multimodal nature of the resources deployed by children during interpretative activity.

Part of the problem lies in the definition of discourse as primarily a linguistic construct. A much broader definition is concerned with the ways in which knowledge and meanings are organised and represented; this is reflected in Fowler (1996): 'a discourse is a system of meanings within the culture, pre-existing language' (p7). Such a definition where meaning, as Van Leeuwen (1996) points out, 'cannot be tied to any specific semiotic.' (p33) opens up much more useful potential possibilities in terms of structural representation of what Anna does. Significant features of Anna's communicative strategies such as the use of gaze and gesture, which tend to be considered as transparent or as merely para-linguistic features (see Clark 1997) can be described as semiotic resources in their own right, in the sense that are used to represent and mediate cultural meanings. Following from this, it becomes clear that at a micro-level, the tools for any analysis could usefully be extended to include the possibility of drawing on not just linguistic resources, but a full range semiotic resources in their own right. The type of structural analysis of the video tape will need to be able to do this if it is to fully describe the semiotic activity in which Anna is engaged; in this sense what is being considered is a semiotic analysis of discourse (Hodge and Kress 1988, Manning 1987).

A view of discourse as involving the mediation and representation of socio-cultural meanings also has the potential to avoid the theoretical separation between the social environment and semiotic resources which was discussed in Chapter 1. As Duranti (1985) points out, it is 'a long and hazardous road' (p197) moving back and forth from one to the other. Not only that, but 'the more one gets involved in social interaction and cultural values the more difficult it becomes to look at the linguistic system as a separate code.' (op cit). The concept of habitus, which was also discussed in Chapter 1, makes it possible to see a range of social and cultural meanings and practice as incorporated in physical, cognitive and affective dispositions (this is not an exhaustive list). The methodological challenge which was set in this chapter was the identification and analysis of those dispositions which seem significant in the children's interpretative activity; this has been incorporated in my final question. The stages which the research has gone through to this point, including the description of the material detail of the children's social and cultural environment discussed above, has included the

identification of some of these dispositions as embodied in certain of the children's actions and activities. The focus at this stage will be to consider evidence from Anna's activity on the video tape by means of semiotic analysis. Through such an analysis, and by means of further interpretation, the possibility of describing how they might have been derived from her social environment and made evident in the semiotic strategies she uses, can be considered.

Structure and Organisation of Video Text Data

Participants

Mention has already been made in the 'Ethnography' section of this chapter of the decision to include a detailed discussion of the participants in the ethnography at the beginning of Chapter 4, the first of the three chapters focusing on the analysis and description of the data. Relevant information about Rob, Anna and the other people mentioned during their discussions are all included in this chapter. Reference has also been made to my own status as a partial participant in the above mentioned section in this chapter, and further information about the source of the ethnographic details is also provided at the beginning of this chapter. This is not in any sense intended to be a full ethnography; its purpose is to provide a level of detail necessary to elucidate the analytic description and interpretation.

Setting

The description of the setting, in the sense of the physical environment in which the Anna was filmed and the time of day when the filming took place, is also part of the ethnography and so is included in Chapter 4. The term is also used in a different sense in the structural analysis of the data and the explanation of this is included in the description of the methodology used for this analysis.

Video Content and Timing

The video consists of clips of Anna involved in a variety of interpretative activity when aged between 23 months and 35 months. It represents a compilation of material filmed over 12 months by Rob, Anna's father; the filming at 23 months was completed in one

morning. The decision was made to concentrate on the extracts made when Anna was 23 months, since this offers an uninterrupted, consistent and coherent sequence of Anna's activity during a single session. Whilst interesting comparisons can be made with her activity at later stages, that is not the purpose of this particular research. The complete contents of the video are listed here, but the sessions which show Anna after 23 months not otherwise referred to.

The total content of the video is shown below; detailed timings are included for extracts at 23 months.

Extracts used in the analysis:

Anna, 23 months, reading the counting book - 12 mins.

Anna, 23 months, playing the sorting posting game - 2 mins.

Anna, 23 months, playing with the stacking cups - 3 mins.

Anna, 23 months, making the mothers' day card with Rob - 12 mins.

Anna, 23 months, playing the sorting posting game with Rob - 2 mins.

Anna, 23 months, building a tower with Rob using posting blocks - 3mins.

Other material on the video:

Anna, 26 months, writing her name

Anna, 27 months, pointing out writing on a book

Anna, 27months, reading a book with brother David

Anna, 35months, reading a book with brother David

Anna, 35 months, writing a shopping list

Anna, 35 months, reading an alphabet book with Rob

Compilation, 23 to 35 months

Total timing for video - 57 minutes.

Semiotic Objects

The inclusive term ‘semiotic object’ (Kress 1997) has been adopted to describe the texts and toys which Anna looks at, transforms and plays with while she is being filmed. An explanation of each is given below and detailed descriptions of the relevant sections are incorporated into the structural analyses under this heading. The initials of each of the semiotic objects is used to identify them within the written analysis. Each is the object of a sequence of Anna’s interpretative activity. The counting book is the only one of these objects whose purpose includes the retention of the same material form at the beginning and the end of activity. The mothers’ day card requires transformation from a blank page to a designed page; information about its original and final forms are included here to provide a complete reference. Both the sorting posting and the stacking games have been designed with the purpose of being reconstructed from a number of objects to a single object and vice versa.

The Counting Book (CB)

The Counting Book by Judy Hindley, illustrated by Colin King is an ‘Usborne First Book’, published in 1979 by Usborne Publishing Ltd. The consultant for the series is Betty Root, Centre for the Teaching of Reading, University of Reading. The book was purchased from an Early Learning Centre and identifies its purpose as being explicitly didactic; it states on the back cover that it is about numbers and counting which need to be taught in the correct sequence; it has an ‘amusing ‘story’(sic)’to encourage this. The blurb also clearly identifies the audience for this information as an adult one, with its explicit references to ‘young children’ and ‘children’ who are likely to benefit from the opportunities within the book to practise counting. This particular copy has a ‘Winnie-the-Pooh’ sticker on the inside front cover which identifies the book as belonging to (or most likely, having belonged to) Anna’s elder brother, David and therefore having been in the household for some time. The format of pages 1 - 10 is the same, with the number represented by a large red, numeral on the top left of the left hand page, followed by the word and then by an appropriate number of red stars (**1 one ***); pages 11 - 20 have a double page spread, but are in other respects the same. At the bottom of pages 1 - 19 the story is represented in writing by a single sentence describing what

happens in the respective illustration; page 20 uses two sentences. The story starts with a cook making a cake and ends with all the children eating it; in between various adventures befall it, supported by the intervention of groups of animals and people of the requisite number, each page increasing their by one. The illustrations have been placed under the numerical text and above the written text. Their style is that of a cartoon and the colours used are predominately brown, yellow and turquoise with some green and red. The images are bounded by strong black lines and the elements of the picture are surrounded by the white background of the page.

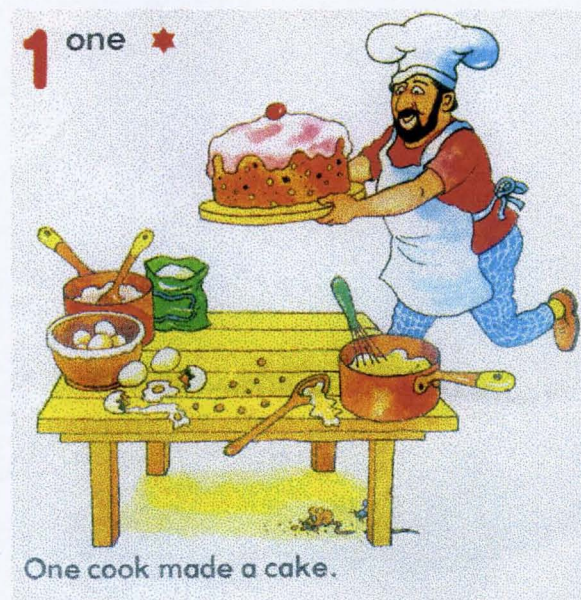


Figure 1

The Mothers' Day Card (MD)

Front

The mothers' day card starts as an A2 sheet of blank orange cartridge paper. This is folded in two by Rob to become an A3 'card'. By the time the card is completed all four sections have marks on them. On the front page (opening to the right), on the bottom third, are a series of up-down zigzag marks of varying sizes and intensities of impression, either in red or blue felt tip. Each of these has been clearly identified by Anna as either a visual representation of a creature or an artefact (cat, cat's house, treehouse, branches), or of the name of a person well known to her (nana, mummy). On the far right of the page is the word 'snake' with a rough representation of a snake drawn round it. These were contributed by Rob; Anna has drawn her own snake over it.

To the left of this, going from the bottom of the page almost to the top, is a long, vertical, blue zigzag which Anna identifies as 'cat's tree'. Starting to the right of this, about a quarter of the way up the page, is a line which arcs up the page and then across the top to the left and round, down the other side, encircling the central image. This is a 'branch' which Rob has encouraged Anna to draw. The central image, drawn by Rob, is of a cat. Using the same system of small zigzags, Anna has completed the cat's features (eyes, nose and mouth) within the area of the face. Rob has written the word 'Anna' above the circular branch in big, yellow letters and has underlined it under the branch with a wavy line.

Back

On the back of the card, two circular 'wiggly' lines occupy the space on the page. These are both snakes; the red one is Anna's and the blue one Rob's. In the middle of the circular shape is one series of dots (in red) and near the beginning of the blue line is a second series of dots (in blue); these represent the snakes' eyes.

Central Page

Half way up the page, to the right of the centrefold is a small red zigzag with a vertical line rising from it, which Anna identifies as 'writing a book'. There is a zigzag cat represented next to, and on the left of this mark. On the right, there is a partially completed representation of a cat in blue felt tip, added by Rob. There is a similar zigzag in an equivalent position on the left hand side of the centrefold which Anna also states to be a cat. On the left of this is a thick blue vertical upright zigzag with a vigorous impression.

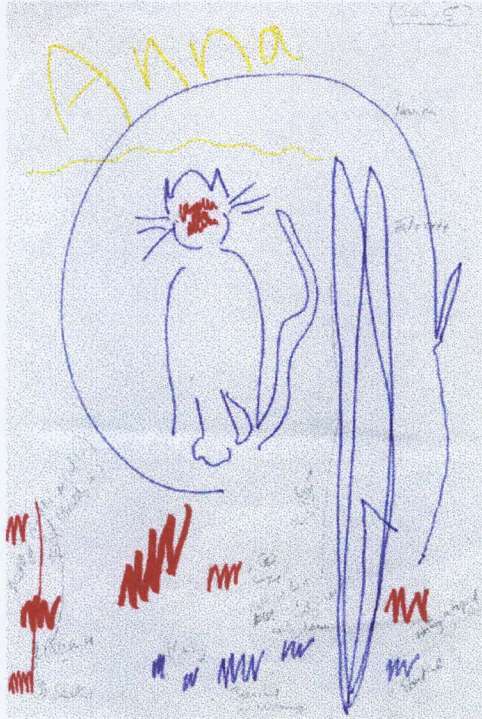


Figure 2

Sorting Posting Game (SG)

This is a toy consisting of a yellow plastic cylindrical container, about 20 cms high, with a blue plastic removeable lid with three shaped slots, a square, a rectangle and a circle. The shapes are plastic cuboids: cubes and cylinders in bright red, yellow, blue and green; there are three yellow and red shapes, one of each kind, but only two of the green and blue; these are probably missing since this toy had also previously belonged to Anna's elder brother David. The purpose of the toy is to post the solid pieces through the empty holes into the cylinder, by correctly relating the shapes to the spaces. This type of toy is commonly available from outlets such as the 'Early Learning Centre' and designed for the use of very young children .

Stacking Game (STG)

Like the sorting game, the stacking game is also an example of a type of toy designed for very young children. It consists of seven plastic beakers made of brightly coloured plastic: two blue, two yellow, two red and one green. They are designed to fit into each

other and stack on top of each other in a sequence, from the largest, (a blue cup) to the smallest, (a red cup).

Instruments of Analysis

The material on the video tape will be analysed broadly in two ways: according to the organisation of interactive events around the semiotic objects; and according to the mode of communication and interpretation used. The methodology used to structure the organisation of events will be discussed first.

Framing structures

The material is structured according to a system of frames. Such a system is discussed by Goffman (1986) as reflecting the construction and negotiation of experience in social situations. As Goffman points out, the types of framework which are used in the course of social activity provide ways of describing events 'in accordance with principles of organisation which govern events' (p10). The frames used in this analysis are 'grounded' in the principles of organisation negotiated between Rob and Anna. The system which Rob uses in framing his organisation of the filming provides a starting point; each semiotic object is the focus for a sequence events, in the very basic sense that Anna concentrates on one thing at a time. There is no evidence that Anna is reluctant to do this, and indeed it is likely that the cultural dispositions which Anna has learned around play stress this system of organisation. On the other hand, it is also likely that Rob actively encourages this for practical reasons, namely that it makes the filming of Anna's activity easier; in this sense, the physical setting of the activity acts as an underlying frame throughout. Further analysis of this framing is necessary however, to derive the principles of organisation which are operating in the interaction between Rob and Anna. Two further levels are used to structure the material in such a way which as to generate a micro view of what Anna is doing; in other words, to generate 'thick description.

Scenes

From now on, the framework based on each semiotic object will be identified by the appropriate initial, **CB**, **MD**, **SG** and **STG**. Each is further divided into 'scenes'. At the

beginning of each scene, its immediate setting is briefly described in order to establish the starting point for the ensuing activity. The principles for this division are dictated by the nature of the semiotic object and the nature of the interaction around it. In the case of **CB**, the rule tends to be that the scene changes when the page turns, bearing in mind that for the single numbers, there are two numbers on a double page spread. However in some cases this does not apply: in the case of Scene 3, for example, Anna expresses minimal interest in pages 3 and 4, responding to Rob's reading of the text simply with a 'yes', and in the case of pages 5 and 6, continuing with a 'hmm' and a movement of gaze away from the page. Consequently all four pages have been included in one scene. Likewise Scene 10 incorporates pages 15 and 16, Scene 11 incorporates pages 17 and 18 and Scene 12 incorporates pages 19 and 20, as Anna's interest and concentration start to flag. The over-riding principle therefore is the engagement with a particular topic around an aspect of **CB** for a period of time: there are ten scenes in all. In the case of **MD**, there is no pre-existing structural framework provided by the object itself. However, the presence of a blank sheet of paper on the table, next to a pot of pens, frames an expectation of transformation; further frames evolve in the course of the activity itself. As in the case of **CB** however, each scene is characterised by a topic around the business of transforming the sheet of paper into a 'card'. So, for example, Scene 1 revolves around the physical activity of folding the paper and organising the felt tip pens; Scene 2 opens the topic of drawing a cat which runs throughout **MD**; here there are fourteen scenes in all. **SG** and **STG** have shorter activity frames than the other two with each having one scene only.

Episodes

The frame 'scene' still provides too broad a level of description to satisfactorily analyse the development of Anna's semiotic activity at a micro level. Throughout each scene, a number of subtle shifts of focus are made; these are not consistent with what Goffman describes as 'breaking frame', since arguably the topic and focus remain constant. It is the micro level unfolding of semiotic sequences within the scenes which is so revealing of the nature of the resources which Anna uses, and the manner of her use of them. It is necessary therefore, in order to analyse at this level, to frame within this frame. The term 'episode' is useful here in its suggestion of operating as a part of a sequence or process.

Each scene is therefore divided into episodes with each episode covering one main semiotic event. For example, SG Scene 1 can be divided into three episodes: in the first episode Anna completes half the reconstruction of the posting toy; in the second she negotiates Rob's involvement with the activity; in the third she completes the reconstruction of the toy together with Rob. The analysis of each event is extensive, sometimes making it appear longer than it in fact is: the timing for each episode is therefore given in the tables from which the analysis is derived.

Central Semiotic Event

One further structuring principal is proposed in the analysis at this level. Dividing the data into episodes will, it has been suggested, advance the interpretative process by describing Rob and Anna's activity at an even greater level of detail. What needs to be clarified however, is what, at a theoretical level, is being focused on here. In Chapter 1, following Goodwin and Duranti's use of the term 'focal event' (1992) in relation to foregrounded linguistic activity, the term 'central semiotic event' was proposed in order to be able to more accurately represent the multi-modal nature of semiotic activity. The framing of the activity which takes place in each of the episodes is therefore refined by identifying the principal, central semiotic event which takes place within each of these frames. This will also provide a structure for examining the dynamic within each episode; whether, for example, control of events remains constant throughout a scene, or whether the control changes from episode to episode. In addition, the central semiotic event frames activity in which constituents of the semiotic object and resources drawn from Anna's personal experience are combined by Anna, mediated through physical, bodily means; in other words, linking features of Anna's socio-cultural environment with her communicative and interpretative strategies. It is through an exploration of this that it is hoped to open up the possibility of showing how dispositions identified in the course of analysis can be seen to be generated and related to Anna's interpretative activity at a micro level. It is intended that this will provide some of the evidence required to consider the third question raised by this research as previously discussed.

Semiotic Analysis

The focus for this level of analysis is on the resources which Anna uses to interpret and express meaning throughout CB, MD, SG and STG. The purpose of the analysis is to make it possible to examine at a micro level firstly, the nature of the resources deployed during interpretative activity around the semiotic objects, and secondly, the manner in which they are selected and combined to achieve communicative and interpretative effectiveness.

These involve both those which are available to Anna as physical, bodily resources: language, vocalisation, gesture, gaze, action; those which are part of the physical make up of the objects themselves: shape, form, space, visual representations; and those derived from previous social and symbolic experiences. The former two types of resources are materially evident on the video tape, within the constraints imposed by the filming; the latter are induced from the evidence of the tape, but are not necessarily directly materially evident.

Resources for Mediating Meaning

The process of uncovering the final set of categories used to describe the mediational means which Anna uses was a gradual one; the linguistic mode was an obvious starting point, partly because it was a significant mediational mode and partly because there is an existing tradition of analysing discourse on which to draw. As the data was interrogated more closely however, seemingly transparent actions, such as gaze and gesture, were identified as opaque and significant and the number of categories increased. The intention was to identify categories which had an independent semiotic function as well as a co-operative one. This was a process of expansion, similar in intent to the process of integrating categories described by Glaser and Strauss, but moving in the opposite direction. So, for example, the category 'gesture' initially incorporated 'gaze', as it appeared that eye movements and looks were gestural in function. However as the interrogation process continued, it became clear that whilst there are some similarities in the function of these modes, they operate independently and therefore require separate descriptive categories. A similar process was gone through in separating 'vocalisation' from language: certain sounds which Anna makes are not

language, nor are they a prosodic element, but are sounds which have an independent meaning making function for her; they therefore needed to be included in a separate category (see Cruttenden 1997, Crystal 1969). Another potentially significant category considered was that of movement. However, most of the movement around the room is made by Rob, largely off camera; all Anna's activity takes place in the relatively confined area of the kitchen table and all the movement shown is as action directed towards the semiotic objects. These actions also have a distinct and separate semiotic purpose, even if a restricted one; the category 'action' rather than 'movement' is therefore used.

In this process of generating categories, the temptation to be prescriptive or take short cuts, in the sense of using category systems generated from other research rather from the data itself, had to be resisted in order to retain the primacy of the evidence. The body of research information about the different modes and the constituents of these modes (see Chapter 1) has informed thinking about this analytic process, and provides an invaluable reference point. However, if the categories used in the analysis are not consistently grounded in the data, the analytic process can not be interpretative, but only confirmatory. The categories need to accurately reflect the strategies consistently used by Anna, to be significant in her interpretative process, and not to privilege any one by providing a more detailed level of description the others. The set of categories used to describe Anna's mediating strategies in this next stage of the analysis are language, vocalisation, gesture, gaze and action; resources which are part of the semiotic object are described as they arise in the course of the activity. These are all presented in a series of tables, a pro-forma for which is shown in Figure 3. Those resources which Anna uses, but which are not materially present on the video are described in the analysis in the following three chapters.

Language

This category includes all linguistic discourse used by Rob and Anna and incorporates any specific semantic, grammatical and phonological strategies which are deployed. Prosodic features (Cruttenden 1997) are marked only where it is deemed they have specific interpretative significance (see below). Likewise a phonetic transcription is only

added where necessary to clarify articulation; otherwise a standard orthographic system is used to represent speech. All the linguistic discourse on the 23 month section of the video tape has been transcribed (see Appendix).

Prosodic Markers

- ^h for aspiration
- ˈ (marker adjacent to syllable) for high rise
- ˈ (marker on syllable) for stress
- / for pause
- [high pitch] for high pitch

Vocalisation

Vocalisation involves significant, but not linguistically meaningful sounds which might involve a single or several recognizable phonemes. These sounds have a distinct semiotic purpose and operate independently from language. Vocalisations are represented by phonetic transcription since accurate representation of the sound is difficult by conventional orthographic means. A small number of vocalisations are included within the linguistic transcript where it is considered that their purpose is not distinct from the linguistic item. The timing for each vocalisation is also included. Within the tables, all vocalisations are produced by Anna unless marked otherwise.

Gesture

Any movements made by arm, hand or finger which have an interactive purpose are included in this category. These include touch and continuous hand or finger movements. The gestures used are described by linguistic rather than by diagrammatic means and within the tables, all gestures are made by Anna unless marked otherwise.

Gaze

The direction in which Anna's eyes look, her eye movements and the movement of her head to achieve a particular gaze focus are included in this category. The description of gaze is made by linguistic means and within the tables, all movements of gaze are made by Anna unless marked otherwise.

Action

Movements which are directed towards one of the semiotic objects, such as picking up a book, making a mark on the page or posting a shape in the shape sorter are included under this heading. Within the tables, all actions are made by Anna unless marked otherwise.

Semiotic Object as Resource

The objects which are the focus of Anna's interpretative activity are shown in the tables in the course of transformation. Only that part of the object and those constituents of the object, which pertain to the activity in which Anna is engaged at any point in time, is represented in the relevant place in the column; so, for example, in MD Scene 1, Episode 1, the semiotic object will be described simply as a piece of orange cartridge paper; when marks are added to the card, these will be described under the 'semiotic object' column heading.

Procedure

Within the tables, the episodes of each scene are presented in temporal order, with each semiotic action represented under the appropriate column heading. From this analysis of the video tape scenes, a micro level analytic commentary is derived, a thick description. This commentary will discuss the material evidence from the video tape which is represented by the analysis; in addition, it will induce from this analysis evidence of those other semiotic resources which are being used by Anna, but which are not materially represented. The structure of the tables is shown below in Figure 3.

| | Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|-----------|----------|--------------|---------|------|--------|-----------------|
| SCENE 0 | | | | | | |
| Episode 0 | | | | | | |

Figure 3

Selection of Data

Three chapters of data analysis are included: in Chapter 4, Scene I from CB, MD and SG are discussed; in Chapter 5, CB Scenes 4, 5, 7, 8, and 14, as well as STG Scene1; in Chapter 6, MD Scenes 2, 3, 5 and 7.

Validity

Corradi (op cit) raises the question of the reliability and validity of data derived from personal narratives. This question could seem even more pressing in the case of this research which has the added complexity of, in addition, drawing on a number of methodologies, each with its own set of evaluative standards (Fetterman 1988). The 'depth hermeneutic' approach, as outlined by Thompson, suggests a methodology which is orientated towards the interpretation of 'meaningful phenomena' (p21). Whilst acknowledging all the methodological sources of my research, nevertheless it is this requirement, namely to interpret the meaningful phenomena within my data whether they involve personal observations or structural analyses, which is the purpose of this study and gives unity to its different elements.

This is not to say that Corradi's concerns do not need to be addressed. There is a sense, for example, in which the structural analysis of the Anna data might be considered as more 'reliable' than the observations. This is in part because this data has a continued physical existence, through having been recorded, which does not apply to the observations. It could be argued that these personal observations are subject to the vagaries and limitations of memory; its selectivity and the difficulty in trying to return to the same place to reinterrogate a particular point. On the other hand, it is in the nature of memory to foreground those surprising and significant elements of experience which then proceed to change and develop thinking, and make the kinds of connections which are such an essential part of interpretation. The structural semiotic analysis arose out of these experiences and in that sense validates their inclusion; on the other hand, the analysis is validated by the interpretative need which was generated by thinking about the significance of the experiences.

The videotaped analysis does have the physical limitation of showing just one view of the activity, dependent on the position of the camera, and in particular providing very limited physical information about Rob's non-linguistic interactive strategies. It could also be argued that since events are seen solely through Rob's eyes, this prevents any real participatory discussion about what is represented on the tape, and indeed about other things which may have happened at the time and not been recorded. However, another way of looking at it is that it is the very tightness of focus in the filming which foregrounds the semiotic significance of what might usually be considered insignificant and transparent events: Anna engages in very specific activities with the focus of the film almost exclusively on her and with a consistent and uncluttered background. As for other participants, it is the domestic familiarity and the closeness of the relationship between Rob and Anna, the very lack of any other participants, which generates material of such relaxed and unselfconscious simplicity, with nevertheless such powerful interpretative potential.

Criteria of validity, or as Guba (1981) terms it, trustworthiness, can be applied to such an analysis as this. In this study, the existence of the data in its material form is an enormous advantage in the process of continuous interrogation and interpretation. Guba's requirement for data to be cross referenced is carried out in this research, through the use of different kinds of data: observations and video tape, descriptive and semiotic analyses; and the application of the same instruments of analysis to Anna's interpretation of different kinds of semiotic objects.

Guba's requirement for an extended engagement at a site is, in a metaphorical sense what a hermeneutic approach involves, in its concern with interpretation and re-interpretation. This kind of process has already taken place at the level of the interpretation of informal observations, deriving of categories to be used in the structural analysis, and will involve a structural, semiotic analysis; and likewise, the third stage of depth hermeneutics which Thompson outlines, in which interpretations are reinterrogated and reinterpreted in the light of the insights derived from the structural analysis. Within the hermeneutic approach there is also a need for what Guba describes as persistent observation, 'Extended interaction with a situation or milieu'

which ‘leads inquirers to an understanding of what is essential or characteristic of it.’ (p85). The essential characteristics which can be derived from this inquiry are not the end of the matter however; beyond this, as Thompson points out, ‘However rigorous and systematic the methods of formal or discursive analysis may be, they cannot abolish the need for a creative construction of meaning,’(p289); it is in the micro analysis of Anna’s activity as presented in the tables that it is hoped that some creative construction of meaning can be achieved.

Chapter 4

Introduction

This chapter, the first of the analysis chapters, starts by providing a short ethnographic account of the setting of the video text and of its participants, Anna and Rob. This is by no means a full account, nevertheless it provides information which, directly or indirectly, is central to developing the kind of analysis which is needed to answer the questions posed.

Following this ethnography, the analysis of the video text data will be introduced by looking at Anna and Rob's interpretative engagement with the counting book, the mothers' day card and the sorting game, describing and analysing activity in Scene 1 for each. The focus of this analysis will be to highlight those semiotic resources which are used during interpretative activity. In doing this, the intention is to address the first of the questions formulated at the end of Chapter 2: that is, to consider the kinds of resources which a young child draws on during interpretative activity around semiotic objects, and how this activity is mediated. At the end of the analysis of CB Scene 1, the resources used by Anna will be reviewed. At the end of the analysis of MD Scene 1, a comparative review of resources will be made, considering the patterns of their use in relation to this object, and making comparison to their use in CB Scene 1. At the end of SG Scene 1, a review of the resources used will be shown in summarised form in Figure 3. It is proposed that this descriptive analysis will provide a basis for further analysis of the data in Chapters 5 and 6, focusing on the second of the questions formulated in Chapter 2.

An Ethnography of the Video Text

The situation of the video text is described in terms of four elements: participants, setting, activities and artefacts. In the case of the participants, their social roles during the action of the video text are described here briefly. It is also the case that aspects of the environment change as activity around the different semiotic objects unfolds; this is particularly evident in the case of the mothers' day card where the text is generated by Rob and Anna. These developments will be described in the detailed discussion of the data which follows this overview. The texts and toys which constitute the semiotic

objects have already been discussed in Chapter 3; in this and the following analysis chapters, reference will only be made to those constituents of the objects which pertain to the interpretative activity under discussion.

Two sources of information are drawn on in describing the background of the video tape: firstly there is information drawn directly from watching and listening to the video and most of this section is derived from this source; the second source of information is general discussion between Rob, myself and other colleagues working on an oracy project at the time the video was made. This information was derived partly through professional and partly social discussion over a period of time, including discussions with family members of colleagues. In this sense it was part of my own social and professional history, pre-dating the more formal work done with the text

Participants

Rob and Anna are the two participants who appear throughout the video text. Anna was 23 months old at the time and lived with Rob her father, her mother, Mary and her six year old brother David in a terraced house in a Shropshire town. Her mother was an occupational therapist by profession, but at this stage she was looking after her daughter on a full-time basis. Anna did not yet attend a play group, although she and her mother had plenty of contact with with other parents and young children in the vicinity; in other words, Anna had a regular range of informal social experiences but as yet no direct experience of more formal or institutional settings. However, the fact that her older brother was already at school and her father worked as an advisory teacher, meant that aspects of institutional life intruded into the home through talk and through structures such as her brother's school day and items of school life being brought into the house.

The video text itself arose from Rob's professional role as part of the oracy project mentioned above, which had, at that time, generated an interest in the early stages of learning. The video was intended for use with teachers on in-service courses. This informed both aspects of the content of the video text and its format. At the time, the project members were particularly interested in the very early stages of literacy,

especially writing, and wanted to find ways of generating discussion amongst teachers about how young children develop as writers. This is another strand of Rob's role within the video text; his professional interest in literacy reflected a view not common among teachers working in the area at that time, namely that children already knew a great deal about written language before they came to school. In other words, the video had a specific as well as a general didactic purpose; as the creator of the video, his intention was to try to demonstrate evidence for his view. In his role as director of the video he makes suggestions to Anna, its subject, which are designed to initiate and maintain her activity around the different objects, and to focus on those elements of this activity which are likely to support his purpose. Rob also has a technical and artistic role in filming the video, in which he has to make technical decisions about such things as camera position and type and length of shot in relation to the subject and theme, and in relation to the genre of video film he is making and the audience for whom it is intended.

But as well as having professional and technical roles in the making of the video text, he is also a parent with a depth of knowledge and understanding of his daughter which makes him confident that her activity round these texts will demonstrate a growing understanding of how written language works. Indeed, there is also a dialectic here, in which his own theories are developed through his observations of Anna, and these subsequently become the means by which he demonstrates them to a professional audience. His role as a parent is enmeshed in his actions throughout the text and is exemplified in the nature of his appearances on camera which are often partial, with only sections of his profile and his hands and arms evident when he is sitting next to Anna and engaging in activity with her. So, although he wants to be able to use the video to demonstrate her independent semiotic activity, he is also pulled by being her father towards engaging directly with her, acceding to her requests for his attention, helping her to initiate activities and generally supporting her as well as enjoying this time spent with her.

It is Anna who is the the main actor on the video text, whose activities are its focal point and whose actions are the prime focus of the camera. There is no evidence

however, that this is a role of which she is consciously aware; she does not draw attention to the process or to the camera, except incidentally when she wants to engage Rob's attention at a point when he is filming. Rob had used the video camera with her on previous 'practice' occasions and it is therefore likely that she accepts it without at that point being directly curious about it. However this does not preclude the possibility that she is aware that her actions are, on this occasion, invested with a particular significance by Rob's activity around the video camera. The role that she is consciously and fully engaged in is that of an actor around the texts and toys. For Anna this includes interaction with Rob, both as part of the activity and as affirmation of what she is doing. In this social role, Anna is not just enjoying her father's company, but also incorporating the interaction into her interpretative activity.

The other participants in the video, Mary, Anna's mother and David her brother are not physically present, either on the film or in the room. However, they are spoken of by both Rob and Anna on different occasions. Because of the significance Mary and David have in their lives, both in social and emotional senses, Rob and Anna draw them into the semiotic activity in which they engage, in both in a general sense (making Mary a mothers' day card, reading a book which previously belonged to David, for example) and by the discussion of specific activities in which Mary and David have been involved. The only other non-present participant is Anna's grandmother who is referred to briefly as a possible audience for the mothers' day card.

Setting

The setting for the video text is the kitchen in the family's house. More specifically, it is the kitchen table and two of the kitchen chairs. Very little of the rest of the kitchen is included in the frame although a section of a work and storage surface can just be seen behind and above Anna's chair. Reference is made in one text to the kitchen door with an apron hanging on it. The table is the site for all the textual activity which takes place. The chair which Anna is on throughout the video text is used in slightly different ways depending on the nature of the object: whilst she and Rob are reading the counting book, Anna is predominately seated on the chair with the book on the table in front of her, often with her hands on the table or on the book and with Rob seated next to her

on her right; while she is playing with the sorting and stacking toys, the chair is used to stand on so that she can more easily manipulate the various pieces of the toys; in the case of the mother's day card, she mostly sits on the chair except where it inhibits her ability to reach the felt tips or turn the paper over and here again she stands on it.

The video was made early on a weekend morning, before the rest of the family was up and about, a fact which is reflected in the quiet and uncluttered state of the kitchen. Using this time of day enabled Rob to leave Mary to have an undisturbed lie-in, but also to spend time alone with his daughter and to film the video without interruption. The fact that he habitually spent this time alone with Anna is also likely to have contributed to the relaxed and comfortable way in which she engaged with the objects and accepted Rob's different levels of collaboration with her.

Activities

The activities around the texts in which Rob and Anna are engaged, are the subject of the semiotic analysis which follows. The other activity which takes place, as has already been mentioned, is the running and manipulation of the video camera; this happens predominately automatically and unobtrusively, and is not, by definition, viewed on the video text itself.

Artefacts

Most of the artefacts viewed on the video text are either the objects themselves or are connected with them. During the reading of the counting book, reference is made to Mary's apron hanging on the back of the kitchen door, but it is not actually caught in the frame. In the case of the mothers' day card, the text is created by Anna and Rob using different colour felt tips on sugar paper. The felt tips are kept in a red and white cylindrical tin which is placed on the kitchen table on Anna's right. There are a few items on the work surface which can be seen behind Anna's chair: two coloured plastic toys, a short row of books of various sizes, possibly cookery books, and a few unidentifiable items; none of these artefacts however are referred to or incorporated in the textual activity.

Resume

The setting for Anna's semiotic activity is one in which the physical boundaries are clearly defined by the physical character of the environment in which it takes place. The use of the video camera creates a yet finer framing of the visual aspects of the activity, cutting out any other activity or distractions in the room and therefore allowing for a highly focused analysis of the text (see Chapter 3 for discussion of framing structures). However the differing social roles of the protagonists make the video text a complex, fluid network of personal and social relationships and motivations which are not bounded by the physical time or place of its production; in this sense they need to be seen as part of Anna's activity, not a background to it.

TABLE - CB Scene 1

Local Setting

Anna is sitting in a chair, pulled up at the kitchen table, with her hands in her lap and the book open in front of her on the table. Initially she is looking at the book alone.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--------------------|--------------|---|---|--|--|
| EPISODE 1 [3 secs] | | | gaze briefly on title page | turns over two pages to 3 and 4 | |
| | | | gaze intently on 4 page focusing on centre of page | hands placed on either side of face with elbows resting on table | four brown rhinos in centre of page in circle with heads facing inwards and iced cake held up on horns |
| Anna ere's te cake | | touches the page to the right of the picture of the cake. | gaze moves quickly across to 3 gaze back to 4 directed towards cake | | cake at top of page just above trunk of one of the three elephants |
| ere's te cake dad | | | looks at Rob | | |

| Language | | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|------------------------|-----------------------------|---|---|--|---|---------------------------|
| EPISODE 2 [11.75 secs] | | | | | | |
| Anna | what's that / | | | looks intently at the page again | | top rhino to left of cake |
| | theres | | rubs finger on the picture of the rhino | turns gaze towards Rob | lifts book up holds book up towards Rob who is off camera. | |
| Rob | what are they | [ɛ:] [pf ^h pf ^h] } 3 secs | | gaze on rhinos | | |
| | | | finger held on picture | turns eyes towards Rob continues to look at Rob | | |
| Rob | are they bears no rhinos | | | | picks up book and puts down on table smiles | |
| Anna | rhinos | | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|--------------------------------|---------|-----------------------------|---------------------------------|---|
| EPISODE 3 [12 secs] | | | | | |
| Rob start at the first page what's on the first page | | | | | |
| Anna yes | | | gaze on Rob gaze on page | starts to turn the page | two of six acrobats hanging off trapeze hold cake |
| Rob what's on the first page how's it start where's the cook | | | | completes the turn to 6 page | |
| Anna find the cook making the cake | [m] 0.25 secs [m] 0.25 secs | | looks at Rob | | |
| Rob find the cook where's the cook | | | gaze on left hand page | | |
| Anna er no | | | looks at Rob | | |
| Rob you dont know | | | gaze on book | turns the page to 8 | |
| Anna ere's it | | | looks at Rob | | cake in sheet held by eight firemen. |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|-------------------------------|---------------|---|---|--|---|
| EPISODE 4 [8 secs] | | | | | |
| Rob there we are, let's start | Rob laughs | | gaze on 2 facing | Rob walks over to Anna then moves behind her and turns page to 1 | |
| what's happening here | | | gaze follows Rob's finger back to first page | Rob sits down next to Anna | cook dressed in cook's white hat and apron running towards table with baked and iced cake held aloft |
| who's this | | Rob points at cook | | | |
| | [ε:] 1.5 secs | | scans page gaze on top right of page gaze moves to left hand side of page | hand on table to lean on | cooks face eggs in bowl and on table |
| Anna b'oken eggs | | Anna points to broken eggs rubbing page with finger | | | |
| Rob broken eggs | | | | puts hand in lap | ongoing process of cake making depicted - bowls with mixture and cooking utensils two whole eggs on table and two broken sections of eggshell - eggs look fried rather than raw |
| Anna yes | | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|------------------|---|--|--------|---|
| EPISODE 5 [12 secs] | | | | | |
| Rob who's this | [ε :] 1.0 secs | Rob points at cook | gaze on cook | | cook in hat and apron |
| Anna beɪkən | | | looks at Rob | | |
| Rob 'the cook who baked the cake' | | | | | |
| Anna yea | | | gaze on page | | |
| looks like mummy's bapran | | points to cook's apron leaves finger on page | looks at Rob | | white apron covers front of cook with strap round neck and tied round waist |
| Rob like mummy's apron yes it is isn't it | | | | | |
| Anna yea there | | points with forefinger up and in front of her away from the table | fleeting gaze on page gaze on apron | | Mary's cooking apron hanging on back of kitchen door camera |
| Rob hanging up on the door yes | | | | | |
| Anna yes | | | gaze ahead | | |
| Rob what's happening here | | | gaze on page | | |

Discussion of CB Scene 1

Episode 1 of this scene starts with Anna looking at 'The Counting Book' on her own, sitting at the kitchen table. She is turning the pages of the text, her gaze moving quickly over the title page, onto pages 3 and 4. Here her concentration intensifies: she lets the book rest flat on the table in front of her and moves her hands up on either side of her chin, elbows resting on the table in a gesture which indicates intensification of concentration on both the visual elements on the page and on the activity and process of looking itself. Her gaze is directed at the centre of page 4, on the section of the page where the cake is held up on the rhino's horns; she then moves her gaze to the left, focusing on the top of page three where the cake is also represented, here being 'tossed' by one of the elephant's trunks.

In these few seconds of activity, Anna would seem to be using her gaze analytically, prioritising from the range of visual images facing her on these pages. As she locates what she is looking for on page 3 by continuing this visual interrogation, she moves to the linguistic mode, informing Rob that she has found 'the cake'. The 'marked' nature of this element of the visual text is reinforced by her choice of determiner; not 'a cake' but 'the cake', a particular cake of which Rob is aware. This marking is most likely derived from previous shared experience of the text, during which not just the locating of specific visual elements but also the expectation of significance within the text, would have been a regular part. Anna's repetition of the statement emphasises the importance of her find and of the need to mark this by drawing it into her interaction with Rob; the repeated version has the tag 'dad', at the end, a device used to call his attention to her more urgently. Language is not the only resource which she uses to mediate the outcome of her visual analysis, however. As Anna repeats what she says she looks towards Rob, holding her gaze as she addresses him directly, using it to retain his visual attention, and requesting through her look that he directs his attention towards *her* and towards the book that she is looking at, rather than at the camcorder which he is operating. As she repeats the statement she also uses a gesture to indicate exactly which image she is referring to and its physical location on the page, touching the section of page 4 immediately adjacent to the cake. These two resources have discrete functions in this interaction: Anna uses her gaze to retain Rob's attention, whilst with

her gesture she indicates the place where that attention should be directed. Her purpose here is twofold: an affective one, to draw Rob directly into her activity through the physical mediation of the book; and an ideational one, to confirm her understanding of that section of the text through her interaction with him.

Moving into Episode 2, Anna moves her semiotic focus away from the cake. The text is still at the centre of the interaction with Rob, but Anna now refocuses her gaze onto the section of page 3 with the illustration of the rhinos. Anna holds the book up and physically moves the page towards Rob, indicating through her action that that is where she wants his attention and at the same time introducing the question, 'what's that', to make it evident that she needs him to provide her with information. During this sequence she continues looking at the picture, drawing Rob's gaze towards the locus of her interest and thereby bringing him physically into her textual activity. She completes the question by rubbing the picture of the rhino on the left of the cake with her finger, a gesture which indicates the object of the demonstrative 'that'; it is also a more diffuse gesture than the deictic pointing which she directed towards the image of the cake, and one which seems to reflect the uncertainty about the identity of the image from which the question arose. As she finishes rubbing the picture, she leaves her forefinger on the page, pointing towards the rhino. This gesture is supported by the completion of the question; combining the gesture with the use of the demonstrative 'there', provides Rob with precise information about which image on page 4 he needs to look at in order to answer her question. This sequence is completed by the turn of Anna's head and eyes towards Rob. With her finger now marking the significant section of the page, she uses her gaze to monitor and hold his attention while she waits for a response.

Rob's first reply to Anna is to return the question to her. Embedded in his response is his knowledge that Anna knows this text and has experienced it in different ways through different literacy events within the family. In returning the question, he is implicitly suggesting to her that she reflect on this past textual knowledge and try to derive the answer, the name of the animal represented by the image, from her previous encounters with the book. In other words, he is querying whether Anna needs to ask the question, whether she is aware of what she knows.

Anna is still holding the book up from the table with the pages facing towards Rob with her finger retained on the page. Referring back to the picture briefly, she then looks at Rob again, turning her eyes towards him and maintaining an extended gaze, seeming to be holding his attention through the persistence of this look, her position almost frozen. At this point Anna communicates a new meaning which she mediates through a vocalisation. Still directing her gaze at Rob, she makes the aspirated [pf^h] sound twice, delivering it slowly and at the same time blowing out her cheeks in an exaggerated way. This takes up just over a quarter of the episode. Combined with the look which continues to be directed at Rob rather than at the page, the purpose of this vocalised deliberation is to hold onto the question; it literally holds the question in time. Her deliberation is focused on retaining Rob in the interaction until he provides a response to the question which will enable her to resolve this particular problem. Gaze and vocalisation are each used within the sequence for a specialised purpose: gaze to hold Rob's visual attention and the vocalisation to retain the linguistic question in the interpretative arena. In Episode 1, where Anna was able to interpret the visual image she was interested in directly, by concentrating on its representation on the page, her gaze was directed towards the text; in this episode, where Rob was the source of the information she needed, her gaze was directed towards him.

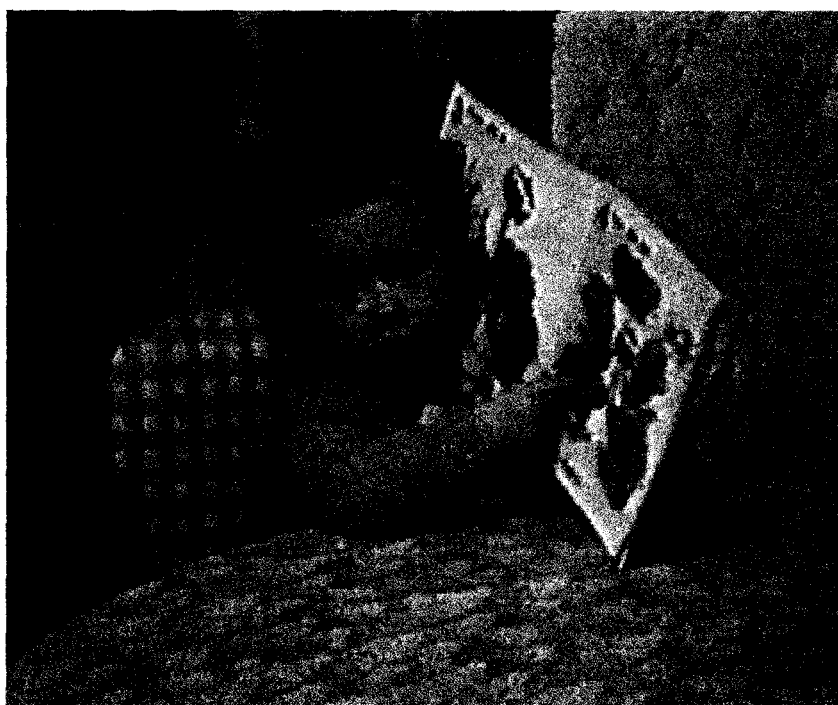


Figure 4

Rob is still off camera at this stage and his reply to Anna suggests that either he is not paying full attention to her or maybe is in a position where it is difficult to see the page; 'are they bears...' is his first suggestion, but he then corrects himself, 'no rhinos'. As soon as Rob provides the word she is looking for, she ceases to hold the question, first picking up the book and smiling slightly as she repeats the word for herself, and then putting the book down on the table. Throughout this episode, Anna persists in waiting for Rob to provide the information, in spite of his attempt to get her to recall it independently. Her smile is an affective action, expressing pleasure at an interpersonal level at having elicited a response, but also at an epistemological level: the answer to Rob's implied question, which suggests that she need not ask the question because she already knows what the picture represents, is unequivocally that she is aware of the state of her own knowledge; what she knows and, just as importantly, what she does not know.

In Episode 3, Rob moves from the role of spectator to that of full participant. He starts by encouraging Anna to adopt an alternative system of turning the pages. The evidence from Episode 1 suggests that her system for page selection is based on the location of a significant visual image which then becomes the semiotic focus for that particular episode. The system which Rob introduces is the system based on numerical order: starting on the first page and proceeding through the book page by page. To help her to start this procedure independently, he suggests that she looks for the key character on the first page, the cook. Anna however, does not succeed in doing this and this brings Rob physically into the activity, sitting down next to her and taking control of the turning of the pages.

It is Rob who moves the activity on at this point. The transition into Episode 4 is effected by his introduction of the sequential system of page turning; Rob's statement, 'here we are' confirms that he has found the first page. He uses his forefinger in a brief pointing gesture to indicate the cook. This gesture reinforces use of the left to right, numerically ordered system of going through the book and Anna, following his finger, moves her gaze across from page 2 on the right to page 1 on the left. Here Rob's professional role is at the forefront of his actions; his professional awareness of the

value to Anna of operating within a frame of western, alphabetic literacy conventions informs this interaction with her around the text at this stage. Rob follows up his pointing gesture with a question, 'who's this', most likely designed to elicit from Anna the label, 'cook', a designation represented on the page by the written mode as well as by the illustration, and already referred to by Rob at the end of the previous episode. Anna responds to this by an action, moving her right hand up to the table to lean on, in order to enable her to look more easily at the page. A process of analytic activity is mediated to Rob by a vocalisation of 1.5 seconds duration, [ɛ:], indicating her concentrated and motivated deliberation. Her gaze is now focused physically close to the images on the page; her eye movements show her scanning the right hand side of the page, initially looking at the image of the cook at the top of the page, before moving her gaze down and to the left to where the eggs to be used by the cook are depicted. The movement of her gaze indicates the course of the visual analysis of the page by which she responds to Rob's question. She then again distinguishes use of gestural and linguistic modes: using the linguistic mode to mediate to Rob the result of her analysis, 'b'oken eggs', and the gestural mode, indicating the eggs by rubbing her finger on the page, to show him where they are positioned on the page.

There is no direct evidence within this episode as to why Anna finds the representation of the eggs interesting. The fact that she is looking at a text which is already familiar to her might have a bearing on it; attention could have been drawn to the broken eggs in a previous reading. Rob's reaction though, repeating what she says in a questioning tone, suggests that this is unlikely to have been the case, at least in a reading in which he was involved. The way the eggs have been illustrated suggests the process of cooking, with the two eggshells shown as cracked into two; the contents of the shell however looking like fried rather than raw eggs. Both images, particularly with prescience of the following episode, are likely to be redolent of Anna's domestic experiences; seeing eggs cooked and maybe also seeing her mother baking. And indeed the rubbing movement of her last gesture suggests an association with a physical action. This introduction of specific social experience into the textual activity provides the transition to the last episode in this scene.

At the start of Episode 5, Rob re-asserts his previous question, ‘who’s this’, still trying to elicit a labelling response from Anna. He points again to the cook and Anna follows his finger and holds her gaze on the image of the cook, interrogating it visually and mediating her analysis with a deliberating vocalisation, [ɛ :] . In her next linguistic turn she articulates the word [beɪkən], then immediately looks at Rob; although her intonation of the word was declarative rather than interrogative, the immediacy of the look suggests she is using her gaze interrogatively, seeking affirmation of her answer. Rob replies with a sentence spoken as if read from the book, ‘the cook who baked the cake’. Rob has not, at this point, read the actual sentence at the bottom of the page, ‘**One cook made a cake.**’, but instead has transformed it in such a way as to assert his understanding of what Anna said by generating a semantic connection between this and the phonetically and semantically similar ‘baked’. At the same time his response also provides Anna with the affirmation of meaning which her use of gaze suggested she wanted.

In her following turn Anna responds affirmatively to Rob’s ‘reading’, but she does not develop this response. Instead, she continues to explore her own connections. The visual image of the cook shows him running towards the table holding the cake which, presumably, he has just baked; in other words he is represented as at a stage in a sequence of actions concerned with baking a cake. It is this graphically represented action which is the criterial visual resource for Anna at this point. For a moment she looks back at the image of the cook on the page, then with a gesture of her finger, points to the white apron which the cook in the picture is wearing. She holds this gesture keeping her finger on the page, on the representation of the cook’s apron, as if physically maintaining the continued significance of the image. Up to this point in the scene, all Anna’s finger gestures have been directed towards the visual images on the pages of the book, on particular elements of the visual text. With her finger still on the page, she turns to look at Rob saying, ‘looks like mummy’s b’apron’, making a direct connection between the pictorial representation of the cook’s apron in the book, and her mother’s cooking apron, which is hanging up on a door in front of Anna. Her finger on the page, maintains the textual focus, linking this through the linguistic mode to Anna’s personal experience. The reference to her mother’s apron does not reflect an

ongoing experience though, it refers to past, reflected experience or experiences. Rob echoes what Anna says and responds affirmatively and Anna then lifts her finger off the image of the apron and points up and in front of her with her forefinger at the actual apron hanging on the back of the kitchen door, emphasising its material presence with the use of the linguistic deictic 'there'. Her reflected experience is now related directly to the apron, a physical object which to Anna is likely to signify her personal experiences around the process of baking with her mother. It is her gesture which is the physical connection between the baking in the text, as signified by the cook's apron, and Anna's personal experience of baking, as signified by her mother's apron; but it is through the linguistic mode that she is able to explicitly articulate this transition from the textual to the personal; not only is she able to relate the represented to the real, she is also able to incorporate her own experience into the text. Gestural and linguistic modes have discrete functions in this process, whilst also operating in combination to generate the sign.

To return to the previous episode at this point, it could be surmised that the process of making links between elements of the pictorial text and elements of her personal experience started with Anna's interest in the broken eggs, although that relationship is not made explicit until Episode 5. The specific semiotic relationships which she explores are those which link together visual textual representations of a cook and cooking and her personal experiences of these things. In other words, through Episodes 4 and 5 Anna develops semiotic connections between the visual constituents in the book, a material signifier in her immediate surroundings and constituents of her past experience; the resulting sign is communicated to Rob through the mediation of Anna's use of gesture, gaze, vocalisation and language.

Table 4.1 - Control of CB Scene 1 Episodes

| <u>Episode</u> | <u>Central Semiotic Event</u> | <u>Controller</u> |
|-----------------------|---|--------------------------|
| 1. | Locating the cake | Anna |
| 2. | Labelling the rhinos | Anna |
| 3. | Finding the cook at the beginning of the book | Rob |
| 4. | Locating the broken eggs | Anna |
| 5. | Pointing out the cook's and mother's apron | Anna |

Throughout this scene, each episode can be described as being a sequence of activities around a central semiotic event involving the counting book text. The first two episodes include activity on Anna's part designed to engage Rob's interaction with the text. The following episodes then each start with a question from Rob, intended as a frame for the ensuing textual activity. In two of these episodes however, Anna then proceeds to control the process of the events, each of which is located around a specific pictorial element of the book; in controlling these episodes she uses the full range of semiotic strategies available to her, as has already been discussed. This is represented in Figure 1 using a simple heading for each event.

There is an obvious sense in which it could be said that Rob controls the overall pattern of events, being in the powerful role of an experienced adult and the parent of a very young child. His pattern of introducing framing questions also controls the focus of activity in episodes three, four and five. He does not however use it to attempt to control the process of activity; in Episodes 4 and 5 Anna is controlling this process within the frames provided by Rob. In this sense the frame itself can be seen as another semiotic resource available to Anna.

A Review of the Semiotic Resources used in CB Scene 1

Interpretative Resources

Throughout this scene, Anna has access to three sources from which she draws the semiotic resources which she uses in the course of her interpretative activity around the counting book, and which either constitute part of the object, or are drawn on or derived in the process of analysis of the symbolic constituents of the object: the material

features of the book, her interaction with Rob, and her social, cultural and textual experiences to date.

The material form and structure of the book, and the conventions which attach to how they are manipulated in the cultural environment of which she is a part, are available as resources for Anna. These she can use directly, in the sense that for example, her knowledge that activity around a book involves turning the pages over informs the way in which she holds the book and manipulates the pages; but also indirectly, in the sense that her awareness of the state of her own understanding of these cultural conventions is a measure for her of how systematically they can be used. So, for example, she is aware that turning the pages to look for a particular image, that of the cook, is something she does not know how to do, and therefore needs to ask for Rob's help to mediate this for her.

The illustrations are central to Anna's independent semiotic activity with the book. However, these are not transparent resources for her: their availability as interpretative resources is contingent on Anna having knowledge of different modes of visual representation, conventions of visual representation, the kinds of things likely to be represented in this genre of book, and the relationship between the represented and real. Her ability to use the illustrations as resources to develop interpretation is also facilitated by the framing structures which she draws on, provided by her past textual knowledge (where's the cake), her own experience (like mummy's apron) and Rob's intervention (find the cake).

As well as providing framing structures for Anna's visual interrogation of the text, Rob's interpersonal relationship with Anna, and the interactive role which he plays in this scene, gives Anna access to other resources through the mediation of his linguistic and gestural interaction. He provides information she asks for (rhinos), asks questions (who's this) and affirms and extends her interpretative insights (hanging up on the door, yes) through their discourse around the text. He also gives her access to the meaning of the written graphics, through his interpretation of the writing on the page. His physical presence close to her, and his material involvement with the book in which she is

interested, also provide an affective and an epistemological resource, associating for her the pleasure and the significance of the symbolic activity in which she is engaged.

From her social and cultural experiences, Anna has gained familiarity with texts and textual activity, including with the book she is looking at. This, as has already been mentioned, has provided her with material textual resources and with ways of framing her activity. A corollary of this is an awareness of the predictability of a text at a material level (the continuous turning of the pages and the regularity of the ways in which graphic images are presented on a page, for example), and also at a symbolic level (the expectation that she will find the images to have significance). This predictability is in itself a resource which provides a motivation to interrogate and analyse; an expectation of meaning. Her work with the counting book also involves her generating connections between the graphic images on the page and her social and material existence, through using her narrative and spatial experiences as resources which can be incorporated into an interpretative framework: the apron on the door, for example, signifies to Anna narratives involving her mother cooking; likewise her scanning of the page for the criterial 'b'apron' involves a visual interrogation of a space for a significant object, in much the same way as she would search an area of the room for a needed item. This has developed through her engagement in a range of social experiences on a day to day basis (see the earlier sections of this chapter), involving her growing knowledge of culturally significant people, objects and activities.

Mediational Means

The analytic framework which is used to describe the means by which Anna mediates and materialises her insights both to herself and to Rob (and incidentally to the viewer of the video tape), is grounded in an analysis of the strategies which she uses consistently used during her interpretative activity (see Chapter 3). The use of this framework in the course of describing activity in CB Scene 1 has generated a finer tuning of the categories, in the sense of providing further information about their operation and thereby, a clearer picture of how they are constituted.

Anna deploys a variety of discursive strategies and procedures during this scene, whose purpose is to maintain and develop the discussion of the book in particular ways. She uses language to refer to social and textual experiences which have happened previously, and to draw them into her current activity, 'ere's te cake', 'looks like Mummy's apron'. She also uses statements to provide information about a visual element of the text, 'ere's te cake'; and she recognises a statement might need to be followed with a continuation device to maintain the dialogue: for example, following Rob's 'like mummy's apron - yes it is isn't it' by means of an elliptical 'yes [it is like mummy's apron]'. She uses questions to ask for information about the page she is looking at and to draw Rob more directly into the activity: for example 'what's that' at the beginning of Episode 2. She also uses an elliptical question to elicit affirmation of her opinion from Rob, 'looks like Mummy's bapron [doesn't it]'. Finally, she uses language to perform a deictic function: indicating that a material item, such as the picture of the rhino or her mother's apron, is physically located in a certain position, 'there'. In Episode 1, she also uses the form of address, 'dad' deictically, to point Rob's attention to the location of her activity.

Anna also uses finger gestures with a deictic function in this scene. Although her pointing to her mother's apron co-occurs with the verbal deictic, it has a specialised function in the communicative sequence: whilst the verbal 'there' alerts Rob to the fact that he needs to attend to a physical location, the gestural deictic indicates the physical position of the location. In Episode 5, her first gesture indicates the place on the page where that apron on page which 'looks like mummy's b'apron' is located'; her second gesture locates her mother's apron. These linked gestures together provide a physical mediator between the symbolic and the real apron. The other deictic gestures used in this scene involve a combination of pointing and rubbing on the page. In each instance, there is an element of deliberation or uncertainty relating to the identity of the item on the page, 'ε : b'oken eggs'. These different types of deictic function could therefore usefully be characterised as 'locating' and 'deliberating'.

The vocalisations which Anna uses in this scene also have a deliberating function, but in these cases they seem to mediate a process of waiting or thinking prior to a decision or

outcome: waiting for Rob to tell her whether the picture is a bear or a rhino; thinking about whether she is willing or able to find the image of the cook on the page.

The majority of the actions used are technical, in the sense of being mechanical movements of arm, hand or finger whose function is to mediate between Anna's visual interrogation and the material object, the book: the term 'manipulation' might usefully be applied to this type of action. In Episodes 1 and 3, for example, an interrogation of the respective pages is followed by Anna turning them over. In Episode 4, there is an added interpersonal dimension to her manipulation of the book; holding it up so that Rob can see the image she is referring to. The other type of action in evidence in this scene is action involving bodily movement in relation to the book: resting her elbows on the table to be able to look at the page more closely, and moving her hand away from the book after gesturing and putting it in her lap. Such actions could be described as 'expressive', in the sense of expressing a positional relationship to the semiotic object from which further information about her semiotic activity at that point can be derived.

Throughout this scene, it is Anna's gaze which is the mode most frequently and consistently involved in activity. However, there is a significant distinction that needs to be established between gaze which is primarily interpersonal in function and that which has an essentially analytic purpose. In this scene, Anna's analytic gaze involves distinct kinds of activity, which are generated by the focus of interest in the visual constituents of the page and could be characterised as involving assessing, framing, locating, following and relating. In the first episode Anna moves her gaze between the two pages, assessing what is on the page and using previous textual encounters to help her frame her analysis, locating a specific image, the cake, within the frame; in Episode 4, she follows Rob's finger as he points to the image of the cook on the page, but then embarks on a process of generating her own sign in relation to this, visually following a conceptual trail down the page to where the eggs to be used by the cook are represented; in Episode 5, this process continues as she relates the visual signifier on the page, the cook's apron, to her mother's apron which is physically present on the back of the kitchen door by looking from one to the other. In all these examples, use of gaze acts as a physical mediation of a cognitive process.

Throughout this scene, there is a pattern of Anna alternating between analytic and interpersonal gaze, communicating the effects of her visual analysis through the way in which she looks at Rob. Often this involves her looking at him in order to gauge his response and monitor his reaction to her activity; she also uses her gaze deictically, directing her look at something, such as the apron, in order to draw Rob's visual attention to it. Finally, her gaze is used to hold his attention and retain his engagement in the activity; most dramatically in this scene in Episode 2, where she turns her gaze on him for an extended period, signifying her requirement that her question be answered.

TABLE - MD Scene 1

Local Setting

Rob and Anna are seated at the kitchen table. There is a large sheet of orange cartridge paper on the table and a pot of different coloured felt tip pens.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|--------------|---------|------------------------------|--|---|
| EPISODE 1 [11 secs] | | | | | |
| Rob shall we do, shall we do a [k] its mummy's day today mother's day, shall we do do you want to do one for mummy | | | gaze on pens gaze on Rob. | standing on chair | sheet of plain orange cartridge paper A2 size |
| Anna yes | | | | reaches across to pot of felt tips and takes out a black one | |
| Rob shall I make it into a card shall I fold it for a card | | | gaze on paper | Rob folds the paper | paper folded in half to become mother's day |
| Anna yes | | | | stands up holding the black felt tip | card |
| Rob and then can you do a picture on the front | | | | Rob turns card so opening is on right | |

[m high fall]

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|--------------|---|------------------------------|--|--|
| EPISODE 2 [19 secs] | | | | | |
| I a drawing | | | gaze on page | kneels on the seat | |
| Rob there you are | | | | | |
| Anna there | | | | places point of felt tip on bottom right-hand section of paper | a small black indented felt tip mark about two-thirds of the way down the page on the right hand side, |
| Anna daddy daddy | | | gaze on pen pot | holds pen in place leans across table to pick out red felt tip from pot with other hand | |
| | | | gaze on black pen | lifts black felt tip from page leaving small mark on paper | |
| daddy doin | | | gaze on red pen | puts the red felt tip down on table | |
| daddy have that one | | | gaze on black pen | hands black one to Rob leaning across paper | |
| Rob I'll have that one | | | | picks up red felt tip | |
| Anna I'll have that one | | | | takes off lid | |
| yes | | | | | |
| Rob you have a red one | | | | | |
| are you | | | looks at paper | | |
| Anna yes | | | | | |
| Rob ok you jus doing a lovely drawing for us are you | | | | puts lid down by side of paper | |
| Anna mummy day | | points to Rob's felt tip | gaze on pen in Rob's hand | | |
| daddy doing there | | indicates place on sheet where mark made previously | gaze on page looks at Rob | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|----------------|---|------------------------------|--|---|
| EPISODE 3 [10 secs] | | | | | |
| Rob yes you do yours first then I'll do mine | | | looks at Rob gaze on page | | |
| Anna there | | | | makes small up and down motion with pen | equidistant between first mark and bottom of page |
| Rob what's that | | | looks at Rob | just below original mark smiles | - small discrete up- down zig-zag scribble in red felt tip - approx. half an inch square with about four or five upright strokes |
| Anna there paper dad | [ə ə ə] 2 secs | points at Rob's pen pats area of paper where marks are. | gaze on page looks at Rob | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---------------------------|------------------------------------|---|-------------------------------|---|-----------------|
| EPISODE 4 [5 secs] | | | | | |
| Rob | do you want me to write or draw | | gaze on page | Rob draws chair up to table | |
| Anna | drawing there | points to bottom right of page | gaze on bottom right | | |
| | cat there | points to top left-hand section of sheet then with clockwise circular sweep of left hand indicates rest of page | gaze follows sweep of hand | shifts position of page accidentally whilst gesturing | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|--------------|---------|--------------|--|--|
| EPISODE 5 [8 secs] Anna know what | [ə ə] 3 secs | | gaze on page | turns card over - looks at blank sheet on other side - turns back again. turns sheet over again, - size of the paper causes difficulties in turning it this time completes turn of page opening to left repeats zigzag on bottom right | small, discrete up-down zig-zag about half an inch square with four or five upright strokes in red felt tip - two-thirds of the way down page on right hand side and in equivalent position to mark on other side. |
| know what do'n mine there | | | looks at Rob | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|----------------------------|--|----------------------------|--|-----------------|
| EPISODE 6 [8 secs] | | | | | |
| | [ə ə] 3 secs | | gaze on pen | slides Rob's pen out of his fingers then back again then out again | |
| writing there | | | | | |
| Rob do you want me to do some writing there | | | | | |
| Anna there are | | | gaze on page | moves the paper towards Rob | |
| Rob what do you want me to say | | | | | |
| Anna there | [ɛ:] 2 secs [ətʰ] 1 sec | points at bottom left hand side of page moving finger up and down then describing circle to right then back to bottom left | | | |
| there [dəsteɪbɪŋ] mummy | | | looks at Rob | | |
| Rob [m] | | indicates bottom left hand side of page with stroking finger pointing | | | |
| Anna [dəsteɪbɪŋ] mummy there | | points to the top left of the page with a sweeping movement of her finger | gaze on page | | |
| Rob write mummy | | | Rob looks intently at Anna | Rob moves hand and pen towards page. | |
| Anna yea | | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---------------------------------------|--------------|---------|-----------------------------|----------------------------------|--|
| EPISODE 7 [5 secs] | | | | | |
| Rob is that what you want me to write | | | gaze on bottom left of page | | |
| Anna I top my top | | | | makes up and down zigzag on page | On the bottom left hand side of page another small up-down zig-zag about half an inch square with about four or five upright strokes in red felt tip - represents though does not resemble a cat |
| Rob what's that Anna | | | looks down at scribble | | |
| Anna that's tat | | | looks at Rob | | |

Discussion of MD Scene 1

The textual scene is set at the beginning of the first episode by the blank sheet of cartridge paper and the pot of felt tips; the space on the page in itself is a semiotic resource for Anna. Set out on the table, paper and pens invite activity and Rob opens the episode by proposing a frame to enable to them move into this. Foregrounded in this frame is an emphasis on 'doing', with Rob repeating 'shall we do' three times and ending by asking 'do you want to do'; the activity he suggests revolves around mothers' day, although its precise nature is not made clear until his next turn in the episode, since Rob's articulation of the word 'card' amounts to only the [k] at the beginning of the word. From the proposition that it is mothers' day, Rob derives three proposals which he embeds in a question form: that a card could be made to mark the occasion, that they could make a card together and that Anna could make a card on her own. The setting, with paper spread on the table and pens to the ready, indicates that these questions are rhetorical, and designed to elicit Anna's interest rather than her agreement. It is likely that Rob has already decided that making the card is something that Anna needs to do to mark this particular cultural event, but that also that it might provide some of the material evidence of her literacy activity which in his professional role he is anxious to gather.

Whilst Rob is talking to her, Anna stands on the kitchen chair watching him closely. Her gaze is directed at the blank sheet, signifying the focus of her interest. She acknowledges Rob's suggestion that he folds the paper with an affirmative response, her 'yes' acting as a general interpersonal agreement with the direction of the activity. However, she responds to Rob's specific suggestion through her actions, reaching across, as she speaks, to the pot of felt tips and taking one out. This is both a functional act, in the literal sense of picking the pen out of the pot, but also an action signifying her intention to engage materially with Rob's proposal to make a card and to the presence of the physical appertenances of the proposed activity. This single act involves a combined interpretative process relating the meaning of what Rob says to the pens and paper spread out on the table. This involves Anna drawing on previous textual experiences; when she lifts the pen out of the pot, she is likely to anticipate activities in which she has engaged in the past using these particular literacy tools. These would

most likely have taken place at home and have involved that complex interaction between affective, pedagogic and professional motivations which were discussed in relation to Rob's role in the video text in the first section of this chapter. In drawing on her previous experiences of text generation, she is able to relate the material resources provided by the pens and the blank sheet to the symbolic process of making a mothers' day card. Two social dispositions would seem to be operating at this point, both of them pertaining to this particular cultural tradition: firstly, an engagement in symbolic activity as part of an act of giving and celebration; a corollary to this in Anna's case is the likelihood that it is the activity itself, the act of making something for someone, rather than just the giving of a material object, which is valued. Secondly, there is the connection between this material and symbolic process and an identifiable social outcome; in other words the beginning of a generic connection. Even in this first episode, these social dispositions are mediated through her material and physical actions.

Rob follows up his first proposals by the suggestion, 'shall I make it into a card, shall I fold it into a card', at the same time folding the paper in half in the style of a card. This question, combined with the gestures of folding, mirror his previous questions and is also rhetorical in nature, with the 'shall I' most likely designed to elicit interest and cooperation. The question also has a performative quality to it; 'shall I fold it into a card?' not only changes the paper physically from a single flat sheet to a folded sheet with two pages, it also transforms the social purpose of the paper from something relatively open, a resource that could be used for drawing, painting, cutting or myriad other uses, to something much more closed, a card to be given as acknowledgement of a specific cultural event. Anna stands on the chair, watching Rob transform the paper, her pen lifted above the page, the gesture suspending activity while the paper is organised. All of Anna's attention is directed towards the page, the gesture of her hand and her gaze anticipating action around the text that Rob is creating.

Whilst the folding of the cartridge paper is going on, Rob asks Anna 'and then can you do a picture on the front'. As with the question in his previous turn, Rob's choice of words here reflects a particular style of discourse in which the modal modifies, in the

sense of softening, the impact of the embedded imperative. Anna is still concentrating on the folding activity: holding her pen aloft; she responds with a vocalisation, [m], the slight fall from high to lower having the effect of lengthening the sound. This vocalisation is non-committal in contrast with the clearly affirmative response to the previous questions; here she uses it as a deliberating resource to defer commitment to drawing a picture on the card. It also signals that Anna is starting to take control of the activity as the video text moves from Episode 1 to Episode 2.

As soon as Rob has completed folding the paper, he places it in front of Anna on the table in the conventionally accepted position with the opening on the right hand side. At this point Anna moves her body so that she is in closer physical contact with the page; her hand reaches towards the paper and she kneels down on the seat, putting the point of the black felt tip on the bottom right-hand side of the page in a definite and purposeful gesture. As she does this, she describes her intended action through the linguistic mode 'I a drawing / ' picking up from the deliberating vocalisation at the end of the previous episode. A consequence of Rob's transformation of the orange sheet from page to card, is the transformation of the space into a more framed resource, in the sense of foregrounding certain options over others according to the cultural conventions of making cards. Whilst some of these conventions are doubtless familiar to Anna, nevertheless they are not resources to which she has full access; it is still the space, the blank sheet of orange paper which is her principal resource here. At this stage her main concern seems to be with the relation of her mark, which she describes as 'a drawing' independently and distinct from Rob's use of the term 'picture', to this space. She places the point of the felt tip precisely and emphatically on the page, about two-thirds of the way down on the right hand side and then confirms this as signifying the positional relationship of the mark to the space by her use of the deictic 'there'.

In the first episode of this scene, the central semiotic event is Rob's framing of the activity as the making of a mothers' day card and the preparation of the paper accordingly. A parallel can be drawn here with Episode 3 of CB Scene 1, where Rob encourages Anna to find the beginning of the book. In both these episodes Rob attempts to demonstrate to her certain cultural conventions attached to these specific

literacy activities. In both episodes too, Rob holds control of the central semiotic event only for as long as he is doing this. These frames are then picked up by Anna as resources which will guide the next stage of her own activity. In the scene currently under discussion, Anna uses her gaze to interrogate the empty page, a visual representation of space which Rob's framing and her previous experience is likely to suggest needs the addition of graphic marks to become a 'card'. Anna's action with the felt tip draws her previous textual experience into her current activity, moving the focus from the conventions of making the card to the organisation of the space on the page.

At this stage, with the point of the felt tip still on the page maintaining the relationship between space and mark, Anna returns to the interpersonal element of Rob's original propositions, namely that Anna could make a card on her own, or that they could make the card together. With the urgent 'daddy, daddy', she recalls his attention, then leaning across the paper to the tub of felt tips she picks out a red one, lifts the black one from the page leaving a small black mark behind on the paper, puts the red one down and hands the black one to Rob, prompting him with the statement, 'daddy have that one'. The combined action and statement mediate a response to Rob's proposals, namely that Anna wants to involve him directly in the making of the card; by giving the pen to Rob she signifies that she requires his direct physical involvement. Rob accepts the pen, commenting, 'I'll have that one'. Anna then picks up the red pen and echoes Rob's comment, 'I'll have that one', but with the following 'yes' turning it into a more reflective comment, considering for a moment whether she has made the right choice of pen. As she pulls off the lid and carefully puts it down by the side of the page, her gaze remains fixed on the pens and paper. The central semiotic activity in this episode revolves around Anna's concern to involve Rob directly in the card making activity; the resource she uses to control the episode is the maintenance of this sequence of carefully orchestrated actions around the felt tips, with Rob now equipped to join in the activity as a result.

At this point Rob attempts to reassert control of the episode by directing Anna back to the drawing he has been encouraging her to do. His addition of the modifier 'lovely' predicts a positive outcome to the activity, anticipating Anna's success as an incentive

for her to embark on the picture. Anna however holds onto her own agenda, using gaze and gestural and linguistic resources in mediating her meaning to Rob. She points to the pen which Rob is holding in his hand, indicating that she wants Rob to use the pen to engage with the activity; her gaze is directed towards the pen, drawing Rob's attention to the focus of her gesture. She follows this with the linguistic imperative 'daddy doing there', stressing both the necessity and the urgency of this action. She then moves her hand as she says 'doing' to touch the place on the paper where she made the previous mark, using her gesture to indicate the locus of the action in which she wants Rob to engage. Here her use of the title 'daddy' is not intended as a means of address but as a designation of the function of actor in the process of 'doing'. Her gaze moves slightly from the pen to the paper, indicating to Rob the process of the action required. Anna then returns to the interpersonal context as she lifts her head to look at Rob, directing the completed sequence of gestures and speech to him through her gaze. Although the total meaning is mediated through the combined use of these resources, nevertheless each mode has an independent function in the communicative process.

Episode 3 starts with Rob acceding to Anna's request and agreeing to do a drawing if she does one first. Anna accepts this compromise and starts straight away. She places the pen on the paper equidistant between the original mark and the bottom of the page. The original mark was made as Anna held her pen on the page while she was organising a pen for Rob in the previous episode; in this sense the mark was incidental to the action. The making of the second mark is a motivated action in itself; it is a discrete up and down red zigzag, just over a centimetre square, with four or five upright strokes. The zigzag does not obviously resemble anything except itself, but it appears to be the resource which Anna uses to mediate her interpretation of a 'drawing'. Her linguistic expression 'there', looking directly at Rob, has an affective purpose, expressing the satisfaction of the action completed. Rob's response is to try and take the activity further, asking Anna to label what she has drawn. Anna however, holds onto the agreement made at the beginning of the episode; her vocalisation [ə ə ə] here acting as a protest against Rob's continued failure to produce his drawing. She points at the pen in his hand to signify that action needs to be taken with it, then gestures to the section of the page where she has made her marks by patting the page, indicating the locus for

action. She then tells him that the page she has just indicated is where he is to put his drawing: 'there paper'. In contrast with her turn at the end of the previous episode, here she uses 'dad' as a direct form of address, almost as an imperative.

At the beginning of Episode 4, Rob replies to this by drawing his chair up to the table, an action which indicates his intention to do as Anna asks. The question which follows foregrounds Rob's professional role more directly than was the case in the first episode. In asking Anna 'do you want me to write or draw', he tries to frame the episode in such a way as to make the central semiotic event an investigation of what Anna knows about these two symbolic modes: whether Anna knows the difference between them, or even whether she is able to recognise that there is a difference. Anna however, now sets up a different symbolic duality. Firstly she again says what she wants and then gestures to where she wants it: 'drawing there' pointing to the section of the page where she made the marks previously. If it is assumed that she is responding to Rob's question here, as opposed to describing what is on the page already, then it seems that she is telling him that this is the section of the page which is ascribed to 'drawing'. The second proposition, 'cat there', is parallel in form to the first, the extended sentence most likely having the meaning, 'put the drawing there on that part of the page and the cat there on the other part of the page'. As she says 'cat there', Anna points at the top left hand section of the page and then indicates the rest of the page with a clockwise circular sweep of her left hand. Space is the principal semiotic resource which she uses to realise this distinction materially. In a combined use of language and gesture, Anna opposes 'cat' with 'drawing' and ascribes a different section of the page for the representation of the cat to the section ascribed to the process of drawing.

Anna first uses the term 'drawing' at the beginning of Episode 2, in contrast, as has been noted, with Rob's use of the term 'picture'. In that episode, her use of the word occurs simultaneously with a sequence of actions in relation to the page, with Anna ending up with her pen on the paper, physically poised to continue drawing. Later on in the episode, Rob also uses the word 'drawing' and then at the beginning of the following Episode 3, when he agrees to do a drawing if Anna does one first, uses the possessive forms 'yours' and 'mine' to refer back to it. At this point Anna again moves

into a sequence of actions resulting in the production of her first ‘drawing’. Her use of gesture, gaze and action in both these cases suggest that to Anna the term refers in these instances to the physical process of making marks on the page; a drawing is not necessarily a drawing of something in particular. The ‘cat’, which she wants depicted on a different section of the page seems to be a separate category, distinct from drawing as a process, and more likely required to be a representation of a cat in the same way that the illustrations in the counting book are recognised by Anna as being representations of different creatures and actions within her social and textual experience.

Having designated different areas of the page for the drawing and the cat, the matter would appear to be closed without the necessity of carrying the actions through at that particular moment in time. In Episode 5, Anna extends her interest in the space on the page to the form and structure of the card as a whole. In the course of making her circular gesture, Anna disturbs the position of the paper slightly, and it is possible that it is this which shifts the focus of her interest, her gaze monitoring the movement and registering the page as a three dimensional material object. She picks up the folded sheet and turns it over, looking for a moment at the blank page on the back; then she turns it over again, marked side upwards, but then tries to turn it back again, this time finding its physical manipulation more difficult, mediating her effort through the vocalisation, [ə ə]. At this point Anna’s actions at a physical level are concerned with the mechanical problems of turning the page over; at a symbolic level they are part of the means by which she explores the limits of the area of space which the complete sheet of paper presents to her. She completes the turn and puts it back on the table, this time with the opening of the card on the left. As a result of this transformative operation, Anna is once again faced with the same visual representation of space as before. She then repeats the process, again making an almost identical zig-zag in the identical position to the one on the other side. Having ascribed this position on the blank page to the process of ‘drawing’ in the previous episode, she mirrors that semiotic activity on this second page. Her accompanying commentary, ‘do’n mine’, echoes the form of the proposition made by Rob at the start of Episode 3, referring back to the ‘lovely drawing’, with her use of the continuous tense reflecting this sense of drawing as a process. As with the drawing in Episode 3, on completing her mark, she

mediates her satisfaction with her work linguistically: 'there' functions both spatially and temporally in the senses of 'there is the mark on the page' and 'there, I have finished'.

Throughout Episode 5, Anna demonstrated a sophisticated capacity to replicate a complex sequence of physical and symbolic work with the card. At the beginning of Episode 6 she turns her attention back to the matter of Rob's activity around the text. She reaches across to where Rob is holding the black felt pen in his right hand, horizontal to the table and with the tip towards the page. She takes hold of the pen and lightly slides it out of Rob's fingers in the direction of the paper, here foregrounding the pen's function as a tool, with the paper as the locus of its activity, and then slides the pen back into Rob's hand again. Her actions indicate the actor, Rob's hand; the tool required for the action, the pen; and the place of the action, the paper; the whole sequence functions as a command which she wants Rob to carry out. She communicates a sense of urgency about the matter through her repeated vocalisation, [ə ə ə], and her repetition of the two actions, although the second time she makes them smaller, only sliding the pen part way out of Rob's hand. The linguistic instruction, 'writing there', which follows this sequence of actions now gives him specific information about what she wants him to do with the pen, which of the graphic modes she wants him to deploy.



Figure 5

The first of the choices which Rob offered her at the beginning of Episode 4 is here picked up by Anna. Having designated a section of page 1 for 'drawing' and then repeated the drawing process in the same position on page 2, she now has to contend with the matter of the writing. Rob still resists engaging directly in the activity, responding instead to her direction by asking for clarification, 'do you want me to do some writing there' At this point she indicates the page as the locus for the writing by physically moving the paper towards him and at the same time declaring, ''ere are' as if to forestall any doubt about the purpose of the gesture. Rob follows up this first question with another, 'what do you want me to say'. Now that Anna has responded to the suggestion of writing directly, Rob is able to act on this, moving back in the second question to his attempt to frame the semiotic activity around the investigation of the state of Anna's graphic knowledge, which he started at the beginning of Episode 4. The development of this framing is in his second question with its focus on writing *saying* something, on having linguistic meaning; the question appears innocent with its apparently straightforward requirement for Anna to say what she wants him to write; however it also shows Rob again moving into his professional role with his interest lying in what Anna's answer might tell him about the state of her knowledge about the relationship between graphic form and linguistic meaning.

Anna responds to these questions with a reflective and deliberating vocalisation, [ε:], suggesting that they have given rise to some consideration. She uses a gesture to indicate position, pointing to the bottom left hand side of the page and drawing attention to the gesture with the deictic 'there'; her response is to his first question and it reflects her continuing interest in the organisation of the space represented on the page. In this episode she moves from a focus on the bottom left hand side of the page to one on the bottom right. Nothing has as yet been ascribed to this section of page 2 and Anna extends the range of her spatial focus by moving her pointing gesture up to the top of the left hand side of the page and then down again by means of describing a slight circle to the right; this is a continuous up then down motion; her gesture is accompanied by the vocalisation [əʔ^h] which is extended to coincide with the complete movement of her hand. This vocalisation is a resource which allows continuation of the

reflective mood. Although Anna is indicating place by her gesture, it is more diffuse than many of her previous strongly deictic gestures. There is an air of openness and uncertainty being mediated by each of the modes used in this sequence. Rob continues to watch her but does not respond at this stage and Anna carries on with barely a pause to indicate the bottom left of the page by means of a top to bottom finger stroking movement. This gesture is accompanied by language which is only partially clear on the recording, and which sounds like [dæsteɪbɪŋ] 'mummy'. The activity is completed by Anna leaving her finger pointing on the page and lifting her head to look again at Rob. Her gaze here appears interrogative in intent as if requiring some response or affirmation; and is reminiscent of the looks which Anna directed at Rob in CB Scene 1, when asking him a specific question about the text they were looking at. This time Rob responds with an 'um', suggesting his own uncertainty about what Anna is saying. She returns her gaze to the page and points at the top left of the page with a sweeping movement of her finger, following the path of the gesture with her eyes; Anna then repeats the same phrase without faltering and completes the sequence with the word 'there', holding her finger on the page and turning her head to look interrogatively at Rob for the third time in this sequence.

This episode has a similar pattern to that in Episode 2 where the two modes operate simultaneously but with differentiated responsive and communicative purposes. It is likely that she is using the linguistic mode to respond to Rob's question about what she wants him to write. The purpose of the unclear section of talk is to communicate what it is she wants Rob to write. The discernible word in this section is 'mummy', a reference back to the function of the writing on the page, namely to make a card for mothers' day. Anna's consistent use of a questioning style of gaze suggests that she herself is aware that she is not quite able to articulate what she wants to communicate with respect to what the writing should say for or about 'mummy', and she needs Rob to discern the meaning and to collaborate in articulating it. Anna uses gesture to indicate the physical area of the page which she wants Rob to use for his writing, but in this case allowing him flexibility in how he uses the space, consistent with her openness or uncertainty about what he is going to put in it. Although the episode starts with writing on the card as the central topic, the process of clarifying Anna's meaning soon

takes over as the central semiotic event; the control of the episode is ambiguous with both of them tentative in pursuit of their own agendas: for Anna the need to have her meaning articulated and for Rob the need to maintain her activity around the area of writing; both of them are dependent on the other for the immediate fulfillment of these requirements. This happens for Anna when Rob offers 'write' as the solution to the communicative ambiguity of what she said; Anna's 'yes' is emphatic and she then moves her gaze to the bottom left of the page.

Initially Rob appears to be about to do the writing. Looking intently at her, he moves his hand and pen apparently purposefully towards the page. Anna however has moved on; Rob has seemingly satisfied her request for adding his writing to the page, and without waiting for him to actually carry out the action, and ignoring his verbal request for feedback on whether he has correctly interpreted her communicative intention, she embarks on new activity. With her gaze, she follows the movement of her pen with great concentration, making another zig-zag mark in the bottom left-hand side of the page, a small discrete block of about seven up-down strokes about a centimetre square in area. Rob follows her action, asking her what the mark is, possibly anticipating that she will have made a connection between what she asked him to write and this mark which she made immediately following the exchange. However, Anna's reply, 'that's tat [cat]', reveals that she has moved away from her interest in writing and back to the representation of the cat which she referred to in Episode 4, at a point when she was concerned with the organisation of the space on the left hand side of the page.

The mark is similar in size and shape to her previous two, and also in style of production, but this time more carefully and deliberately produced and with a greater number of up-down strokes than the previous two. In one sense these actions are technical in that they are the means by which Anna effects a mark on the page; but in another sense they are symbolic in that they are the means by which she generates a visual text on the page and physically transforms those spatial relationships with which she is so concerned throughout this scene. Although she is relying on only one means of graphic representation to mediate her meaning, the zig-zag lines, nevertheless she is able to differentiate what they signify through the manner in which she makes them, where

she places them on the page and how she designates them. Each of these resources, the action of marking, the organisation of space and the linguistic designation, make both a discrete and a collaborative contribution to how she signifies 'cat'. The mark mediates her meaning in a material sense, generating text which then becomes available for interpretative activity in its own right.

Table 4.2 - Control of MD Scene 1 Episodes

| <u>Episode</u> | <u>Central Semiotic Event</u> | <u>Controller</u> |
|-----------------------|---|--------------------------|
| 1. | Paper turned into a card | Rob |
| 2. | Sharing out the pens | Anna |
| 3. | Anna does her first drawing | Anna |
| 4. | Anna plans the use of the space on the page | Anna |
| 5. | Anna turns the card over | Anna |
| 6. | Anna and Rob negotiate Anna's meaning in relation to what must go on the card | Joint |
| 7. | Anna draws a cat | Anna |

Rob's initial framing of the activity, to make a card with a drawing on it, provides a much looser semiotic resource for her to draw on than in the previous scene. Here, the central semiotic event of each episode involves either negotiating the form of the text, as in one and five, transforming space into text, as in three, four, six and seven, or organising the deployment of the drawing tools. However each episode also involves their interpersonal negotiations around the degree of Rob's involvement in the activity; Anna's interest in this also provides a framework for the process of her activity.

A Comparative Review of the Semiotic Resources used in MD Scene 1

Interpretative Resources

In MD Scene 1, the sheet of cartridge paper is folded by Rob, physically transforming it and framing it as a resource with a cultural purpose, a card to be given to a particular person on a particular occasion. Unlike the counting book however, the card has no pre-existing graphic marks on it. Rob provides Anna with a further resource in his suggestion of action in relation to the card (do [a card], do a picture on the front); the suggestion itself conveying the information that this is a realisable thing. Anna's material resources at this stage provide both space for action and the means of acting on the space. She uses one type of representational mark, a zigzag, as a symbolic resource.

In this scene she uses the boundaries of the space as a material frame to enable her to make and place marks, and language to ascribe a symbolic meaning to one of them. The zigzag as Anna uses it is a highly flexible resource, both materially and symbolically.

Anna's previous textual experiences include activities involving the generation as well as the interpretation of texts. In this scene, the 'framed' blank page is predictable in the sense that Anna expects the activity of making a card to involve covering the space with representational marks. As with the counting book, the predictability is a resource which motivates her to activity, but in this case activity which includes physically generating and representing meanings of her own. Her social and material existence and her textual experience are drawn into the activity, providing her with resources which enable her to do this: the 'cat' which she decides to represent is present in her social experience, but is also a resource derived from her textual knowledge, in the sense of most likely having been shown to her as a culturally appropriate 'object' for a young child to draw.

Mediational Means

In this scene the linguistic focus is on the physical activity taking place. Anna's statements often act as a commentary to this: 'I [am doing] a drawing', 'I doing this'. Much of the discursive activity throughout the scene is concerned with Anna working to engage Rob directly in the business of making the card. She uses a number of commands in the course of doing this: 'daddy have that one'; 'daddy doing there [do your drawing there]', '[you do some] writing'. She also uses an elliptical command to answer Rob's question when he asks her if she wants him to write or draw: '[do the] drawing there [do the] cat there'; using the discursive structure to return the choice of possibilities which Rob offers her as a command for action on both of them. Even the vocalisations in Episode 3 are used to further her purpose, acting as a protest at Rob's attempt to divert attention to the marks Anna has made.

The gestures which Anna uses are likewise used to mediate her intention that Rob should help make the card. Her gestures in this scene are all deictic, in the sense previously characterised as locating: indicating where on the page Rob is to make his

marks. However, there is also an element of deliberation in the gesture in Episode 6: here Anna's hand moves over a large area of the space on the page in a sweeping movement, in sharp contrast to the much more exact spatial locating of the other gestures in the scene. As has been discussed above, the openness of this gesture is a resource which mediates her requirement for Rob to collaborate with her in articulating her meaning; suggesting to him greater flexibility and choice in how he uses the space, consistent with the greater amount of semiotic work which she requires of him.

The pattern of Anna's use of gaze is similar to the pattern of use in CB Scene 1, in the sense that it consistently moves between being focused on the physical objects, the pens and the paper, and being used interpersonally to look at Rob. However, in looking at the pens her gaze does not have an analytic purpose, but is the means by which she monitors the material resourcing of the activity; checking that adequate and appropriate pens are available for the purpose, and whether Rob is yet applying his pen to physical marking activity. Her interpersonal use of gaze includes a monitoring purpose; looking at Rob to gauge the state of his reaction to what she is doing and what she wants him to do; checking to see if he has understood her. In looking at the paper however, prior to indicating gesturally where she wants Rob to mark, and prior to making her own marks, her gaze is again an analytic resource as it was when she looked at the counting book, mediating her visual analysis of the space on the page, and in Episode 7 mediating the production of her own representational mark and the ascribing of meaning to it.

The dominant mode of this scene, in the sense of being the mode in which the greatest amount of activity takes place, is that of action. There is some expressive action, in the sense discussed previously, with Anna standing on the chair so that she can better orientate herself physically towards the scene, and leaning towards the pot of pens and the sheet of paper. The business of organising the felt tip pens, which is a significant feature of Episodes 1 and 2, involves technical action; manipulating the pens out of the pot, picking them up and putting them down and handing them to Rob. Anna's turning of the sheet of paper is also a feat of technical manipulation for her, during which she explores the physical extent of the sheet of paper. However, this action is also the means by which she explores the paper symbolically, concurrently using her gaze

analytically to assess the organisation of space on both sides of the sheet. The use of action in mediating symbolic activity is also exemplified by the movement of her hand and arm as she makes her representational marks in Episodes 3, 5 and 7. Her action at the beginning of Episode 6, where she slides the pen in and out of Rob's fingers would appear to combine all of these functions: it is technical, involving as it does physical manipulation of the pen; it is expressive, in the sense of suggesting that Rob moves physically closer to the page in order to engage with it more directly; and it is symbolic in its intent to represent the process of activity which Anna requires Rob to go through in relation to the card.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---------------------|-------------------|---------|------------------------------|--|-------------------|
| EPISODE 2 [25 secs] | | | | | |
| | | | | picks up a blue cube and holds it over square slot | |
| | es tha go there | | lifts gaze towards Rob | | |
| | | | | moves hand holding cube away from sorter | |
| | | | flicks eyes up towards Rob | | |
| | es tha go there | | gaze on lid | | |
| | | | | returns hand to hold cube over square slot - posts | blue cube added |
| | za go there | | looks at Rob gaze on cube | | |
| dad | | | | picks up yellow cube | |
| Rob | yea | | lifts eyes towards Rob | holds over square slot | |
| | well done | | then down | manoeuvres cube in hand | yellow cube added |
| Anna | zas | | | posts | |
| | zis there | | | picks up red cuboid | |
| | | | | holds over cuboid slot, | |
| | | | | moves to cube slot | |
| | | | | pauses | |
| Rob | | Rob | looks at Rob | | |
| goes | you know where it | laughs | | | |
| | | | | moves back to cuboid slot | |

TABLE - SG Scene 1

Local Setting

Anna is standing on the chair next to the table, preparing to play with the posting game. The other sorting game, the stacking cups, is on the table as well, as is Anna's drinking mug. Rob is off camera in another part of the room.

Language

Vocalisation

Gesture

Gaze

Action

Semiotic Object

EPISODE 1 [28 secs]

Anna I doing this

I doing this

looks towards Rob
gaze on shapes falling out

looks into container

gaze on green cylinder

gaze on slots in lid
gaze on blue cuboid

gaze on slots in lid
looks at blue cylinder

looks at slots in lid
gaze on yellow cuboid

gaze on red cube

puts her hand on lid on table

empties container onto table

puts container down and puts lid on

picks up green cylinder
rotates in hand
posts green cylinder

picks up blue cuboid rotates in hand
posts blue cuboid

picks up blue cylinder
rotates in hand
posts blue cylinder
picks up yellow cuboid
rotates in hand

holds it over square slot for second before posting in right slot.

picks up red cube
holds over round slot for a fraction of second then posts through square slot.

round blue plastic lid with square circular and rectangular slots
container yellow, plastic and cylindrical about 10" high

lid on container

container holds green cylinder

blue cuboid added

blue cylinder added

yellow cuboid added.

red cube added.
Container now holds five shapes - rest remain on table

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|--------------|---------|-----------------|---|------------------------------------|
| EPISODE 3 [10 secs] | | | | | |
| Anna there | | | looks at Rob | holds | |
| Rob there | | | | | red cuboid added |
| yes | | | | posts | |
| | | | looks at shapes | | |
| Anna there | | | | picks up green cuboid, holds fleetingly over rectangular slot | |
| i'there | | | | moves to square slot | |
| Rob no | | | looks at Rob | | |
| | | | | turns shape round | |
| Anna there | | | looks at Rob | moves back to rectangular slot | green cuboid added |
| Rob that's it | | | | posts green cuboid | container now holds nine shapes |
| can you build a tower now with the other ones | | | gaze on Rob | | |

Discussion of SG Scene 1

As in CB Scene 1, this scene starts with Anna engaged in activity and Rob off camera away from the immediate vicinity. In CB Scene 1, Anna used language to inform Rob about the text, since he was in another part of the room, and to thereby try and draw him into her activity with the book directly. As this scene opens she is standing on the chair with her hand on the lid of the shape sorter which is lying on the table, making and repeating the statement, 'I doin this I doin this', but this time commentating on the process of her activity around the sorting game. At this stage she does not demand Rob's physical involvement, but she does look towards him as she speaks, using her gaze to call his visual attention to her activity; for him to watch what she is doing.

Her gaze now focuses on the container as she empties the plastic shapes out of it onto the table; she then looks into it to check if it is empty. The object has now been split into three parts, the container, a set of shapes and a lid. The intention behind the game is to post the various plastic shapes back into the container through the appropriately shaped slot; a recursive process involving deconstruction followed by reconstruction. Unlike the book and the card, the shape sorter, if used this way, has a single and predetermined purpose. Anna's previous experience of playing with it has clearly exposed her to this way of framing the activity, and by separating the toy into its component parts she has completed the first stage of the process. She continues to operate within this frame, starting the process of reconstruction by putting the lid back on and patting it down emphatically with an action which signifies an affective rather than functional purpose; suggesting satisfaction at the completion of this action rather than concern with the physical fit of the lid.

Anna now looks at shapes on the table and focuses her gaze briefly on the green cylinder, picks it up in her right hand and without looking at it turns it so that the round faces are at the top and bottom; she then scans the slots on the top of the container and posts it through the round slot. These actions involve her using her gaze for spatial monitoring and processing: in scanning the shapes she first selects the green cylinder from the ten possible shapes lying on the table (although there is no clue here as to why this particular choice was made); the brief look at the shape would seem to be sufficient

to enable her to retain a visual image of the cylinder, since she swiftly moves her gaze away from it to focus on the slots on the lid of the container. At this stage Anna has to match the retained image of a three dimensional shape to slots which represent only one face of the blocks, in other words to what amounts to two dimensional shapes. She responds to this problem swiftly, as evidenced by the nature of her hand and arm gestures, lifting the shape and posting it in one almost continuous movement. This is in sharp contrast to the way in which she used her gaze to process visual and spatial elements when she was looking at the book and making the card. There, her frequently extended and concentrated manner of looking revealed it as having an interrogative and analytical purpose. In this case, she would appear to be engaging in a process of monitoring; checking whether she is putting the right shape in the right place, based on routines which she has learned through playing with the toy on previous occasions.

During this sequence, Anna's hand and arm actions have a technical purpose, in that they are deployed as tools which perform the physical work of the spatial processing. At the beginning of the activity, Anna's hand actions perform two functions: firstly to simply pick up the selected shape, but secondly to physically rotate the cylinder in her hand by feeling the shape in order to have it in the most practical position for placing in the appropriate slot. The fact that she does this without recourse to making a visual check on the shape of the slot first, suggests that she already knows where the shape is going; that her previous experience with the game enables her to draw on a remembered sequence of spatial processing to facilitate her reconstruction of the toy. Viewed in this way, these spatial relationships have already been experienced by Anna as an element of the structure of the object, allowing her to use this frame to override the need to check each stage of the spatial processing. She uses the same routine for the next two shapes: picking up a blue cuboid, rotating it in her hand so that the longer rectangular face matching the posting slot is held facing downward, and then posting it immediately into the rectangular slot; picking up the blue cylinder, rotating it then posting it. In the case of the yellow cylinder, she focuses her gaze on the process of rotation, but otherwise proceeds as with the previous shapes. In contrast with her actions during activity around the book and the card, where Anna's actions had an interactive as well as a

technical purpose, all her actions during this stage of the reconstructive process are directed towards the object.

With the yellow cuboid, the rotating process takes place behind the container so it is not possible to see if it proceeds in the same way as in the previous cases; the posting process for this shape however is not continuous, as Anna holds it over the square slot for a second or two before moving it across to post in the correct one. In the case of the red cube, she does not rotate it in her hand once she has picked it up, but as with the yellow cuboid, holds it briefly over the wrong slot, in this case the circular one, before moving and posting it correctly. In both these cases, she reassesses the spatial relationships visually, looking briefly but intently at the shapes as she holds them over the wrong slot. She does not attempt to try them out, nor does she look at the correct slot before moving the shapes across; in other words, she is relying on her memory of the spatial relationship between the face of the shapes and the slots on the lid, and on knowing from her previous experience with the game where the slots are located. In this respect, this known routine has become as a semiotic resource which Anna applies to her reconstruction of the game, and which enables her to achieve her end without further analysis of its elements. However this cannot be considered an interpretative activity in the same way that activity around the card and the book is interpretative. In all cases the types of experiences which Anna brings to bear on her activity are determined by the nature of the semiotic object; however, with the book and the card, these experiences are varied, multimodal and not predictable, whereas with the game they are limited by the relatively prescribed purpose of the object to the kind of visual spatial matching that has been described.

Apart from her initial commentary, Anna has completed all the activity which constitutes Episode 1 without speaking, and her gaze and all her actions are directed towards reconstructing the object. The plastic container now holds five of the shapes, half of the total needed to complete the reconstruction. At this point, the beginning of Episode 2, Anna returns to the interactive mode. Picking up the blue cube she holds it over the square slot, pausing and asking the question, '[wh]e[re]'s tha[t] go..?'; as she speaks she lifts her eyes up, directing her gaze towards Rob and momentarily

suspending her activity. Rob does not respond linguistically, although since he is off camera it is not possible to tell if he acknowledges her question by any kind of gesture. Anna reinforces the question by use of the deictic 'tha' [there], and by briefly suspending her activity, moving the cube away from the container. She repeats the question and at the same time brings the cube back to the container, holding it momentarily and then posting it, indicating that she wants his attention by again lifting her eyes to look towards him. He still does not apparently respond, and she repeats a similar sequence of manoeuvres, this time holding the yellow cube over the square slot as she asks 'za go there..', and calling his attention to her activity by addressing him directly, 'dad'. This time Rob does reply although at a minimal level, just agreeing that she is holding the cube over the correct slot, and acknowledging her success as she posts it with 'well done'. Anna is not satisfied with this however and persists, this time first holding the red cuboid over the correct slot, but then moving it across to the square slot, pausing and then looking at Rob.



Figure 6

In the previous episode, Anna negotiated the reconstruction of the object fluently and swiftly, concentrating exclusively on the activities within the frame she adopted. Her transition to the second episode shows a shift of interest from activity around the object to activity with an interpersonal element; her previous textual experience, with both the counting book and the mothers' day card, includes the active participation of her father,

and at this point it would seem that a desire to involve Rob in her play overtakes her interest in reconstructing the object. Anna's past experience has shown, as at the start of CB Scene 1, that persistent expression of uncertainty about the text is more likely to elicit Rob's active involvement than the certainty demonstrated by independent activity. Episode 1 shows Anna to be fully conversant with the spatial relationship between the cylinder, cube and cuboid and their respective slots. In Episode 2, certainty is transformed into uncertainty as a deliberate and motivated semiotic strategy to try and incorporate Rob directly in the activity. When, by the third turn in the episode, Anna has still not achieved a satisfactory level of engagement from Rob, she strengthens her strategy, moving from conveying uncertainty by holding the shapes over the slots rather than posting them directly, to conveying error, moving the red cuboid from the matching rectangular slot to hold it over the incorrect square slot.

At each of these turns, Anna stresses her interactive intent by asking Rob a question of the form that normally requires information to be given. However, since Anna's activity in Episode 1 suggests that she already knows the answer, its purpose is to generate an interpersonal response. The question draws attention to the activity around the game, where on one level Anna is still engaged in the process of technical reconstruction; but at the point at which she chooses to hold the shape over the slot rather than posting it, her action transforms the purpose of the activity from a mainly technical one to an affective one. Anna's control over the semiotic routine she is using is such that she can also use it as a resource for quite different purpose from that from which it was originally derived. Rob's comment following this process suggests that he is quite aware of the strategies she is using to gain his attention, but his challenge, 'you know where it goes' is accompanied by laughter making his response one of amusement rather than one of criticism.

In the final episode of this scene, Rob and Anna continue the reconstruction of the toy together, maintaining both affective and reconstructive purpose in their interaction. Anna picks up the green cuboid, holding it over the rectangular slot and maintaining Rob's attention by directing her gaze towards him. She engages him in the activity more directly by her use of the questioning deictic 'there?'. Rob's response, 'there ... yes'

suggests completion and possible closure of this event, but Anna is not ready for this and resists, deploying the same resource which she used in the previous episode, moving the cuboid away from the matching slot and holding it over the square slot. She looks at Rob again and asks for affirmation, ‘there ... i’there?’ Rob answers in the negative, not challenging her this time but accepting the frame in which Anna is playing the game. Anna now turns the cuboid round in her hand and holds it over the rectangular slot, maintaining the interactive structure of the episode by focusing her gaze on Rob and seeking his reassurance with a questioning ‘there?’. Rob’s response, ‘that’s it’ acts as sufficient affirmation for Anna and she then posts the shape, continuing to look at Rob to maintain his involvement. Rob however closes the activity at this point with his suggestion of that Anna moves onto a new activity.

Table 4.3 - Control of SG Scene 1 Episodes and Review of Resources

| Episode | Central Semiotic Event | Dominant Mediational Resources | Function | Controller |
|----------------|---|--|--|-------------------|
| 1. | Anna completes half of the reconstructive process | gaze - monitoring action - manipulation | technical technical | Anna |
| 2. | Anna negotiates Rob’s involvement | language - question gaze - monitoring interpersonal gaze - monitoring action - manipulation | affective technical affective affective | Anna |
| 3. | Reconstruction completed | language - question interpersonal gaze - monitoring action - manipulation | affective affective technical | Joint |

The central semiotic event throughout Episode 1 is the reconstructive process which Anna effects by using tools derived from her previous experience with the toy: the frame of a familiar reconstructive routine and the algorithms deployed to match the shapes to the spaces. These are mediated through gaze in its monitoring capacity and hand and arm actions involving technical manipulations. The pattern of mediation is strikingly different in this scene from the CB and MD scenes discussed. In this first episode, there is only one linguistic turn and no use of gesture or vocalisation; no interaction is required by Anna for the familiar process of technical construction in which she is engaged.

In the second episode Anna shifts the primary function of her gaze and her hand and arm actions from the technical to the affective, and she now draws on these resources to try to involve Rob in what she is doing. Language is needed at this stage to mediate her affective purpose, here using the question form to generate a response rather than an answer. Gesture is again not drawn on during this or the following episode: her actions around the object continue to involve manipulation of its pieces, but her purpose is now affective, transforming the function of the action from technical to symbolic. In the final episode, control is shared to complete the reconstruction, with Anna maintaining a partially affective focus in order to retain Rob's involvement; she mediates this purpose through her use of verbal questions, monitoring Rob's response with her gaze, whilst her hand and arm actions return to the technical mode, posting the shapes through the correct slots. Anna retains the same reconstructive frame throughout, but with its boundaries extended where necessary to enable her to draw on both technical and affective resources.

Chapter 5

Introduction

This chapter, the second of the analyses chapters, will look at activity in the Counting Book Scenes 4, 5, 7, 8 and 14, and in the Stacking Game Scene 1. Chapter 6 will continue this analysis, looking at MD Scenes 2, 3, 5 and 7.

In Chapter 4, the analysis of Anna's interpretative activity generated a description of the semiotic resources which she deployed in the first scene for each of the semiotic objects. These resources were derived, on the one hand, from both her social and textual experiences, and on the other involved physical, bodily resources with which she mediated social, textual and interpersonal meanings. The analysis also identified a pattern of control of the central semiotic events throughout the scenes, in which Anna maintains control in the majority of episodes.

In this chapter and in Chapter 6, the analysis will continue to include description of the resources used, but the principal analytic focus will be on the second question formulated at the end of Chapter 2: that is: how resources are selected and combined to achieve communicative and interpretative effectiveness, and the evidence for an epistemological motivation in this process.

The third question, namely how the relationship between these resources might relate to dispositions derived from Anna's social environment, is to a considerable extent part of the discussion in all the analyses chapters. In this chapter, looking just at one episode, Episode 3 in Scene 4, an attempt will be made at the end of the main section to expand and re-present the structural analysis using a different diagrammatic form, in order to be able to examine this question more closely; specifically to consider in what ways such an analysis could advance thinking about routes and connections between the material nature of Anna's social and cultural existence and her engagement with symbolic forms.

TABLE - CB Scene 4**Local Setting**

Anna is still seated at the table, her hands in her lap, her gaze fixed intently on the left hand page.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|--------------|---------|---|-------------------------------|--|
| EPISODE 1 [4 secs] | | | | Rob completes turning of page | |
| Rob seven crocodiles snapped at the cake | | | gaze on bottom half of right facing page 8 gaze moves across to bottom of page 7 | | 6 acrobats hanging and falling from top right of page, hands out to cake on bottom right, 7 crocodiles' heads open mouthed in blue water patch across page underneath |
| Anna Yeah | | | gaze moves up to top of page | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|--------------|--|------------------------------------|---|--|
| EPISODE 2 [22 secs] | | | | | |
| Anna is is [high pitch] hánds | | points to free hanging trapeze bar on top right of page | gaze remains on top of page | | acrobat hanging upside down from trapeze with right hand held to right |
| Rob the acrobats have let go haven't they they're falling off. | | | | | |
| Anna yes hold this 's hold this | | finger pointing to trapeze bar with acrobat's legs across it | looks at Rob | | trapeze bar swinging from top of page from two ropes |
| Rob holding on with his leg | | | gaze returns to the top of page | | |
| Anna yes | | | | removes finger from page and rests hand on table under book | |
| Rob they're trying to catch the cake aren't they | Rob m | | | | |
| Anna yes | | | gaze moves down page | | |
| Rob but the crocodiles snapped at the cake | | | | hand lifted up towards book | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|------------------------------|--------------|---|------------------------|---|--|
| EPISODE 3 [14 secs] | | | | | |
| Anna there | | points index finger at legs of bottom right acrobat lifts finger up and down | gaze on acrobat's legs | | short horizontal lines on acrobat's leg where knee bends |
| Rob he's holding the legs | | | | | |
| Anna yes | | | | | |
| Anna we [stʌt] | | | | moves finger down acrobat towards cake moves finger down to acrobat's head | acrobat's head and outstretched arms form a triangular enclosure above cake |
| we [stʌp tʃræŋ] | | | | moves finger further down to just above cherry on cake | white triangular space just above red cherry on top of pink icing on cake |
| Rob hmm | | points to white space above cherry on cake | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---------------------------------|-----------------|--|---|----------------------------------|---|
| EPISODE 4 [13 secs] | | | gaze on 8 page | rests head on right arm on table | |
| Rob and who saves the cake here | [ɛ:ə] | Rob points to firemen on right of page | gaze on firemen on right of page | hand held under chin | eight fireman hold taut round sheet containing the cake |
| | draws in breath | } 6 secs | gaze sweeps across to left of page gaze returns to firemen | | |
| Rob fireman | | | | | |
| Anna Yea | | | | hand held over nose | |
| Rob they save the cake | | | | | |
| Anna yes | | | | | |

Discussion of CB Scene 4

At the beginning of this scene Rob and Anna have reached the seventh page of the book, where the seven crocodiles ‘snap’ at the cake. Rob turns the page, moving into the first episode of this scene, and taking control of it by reading the written text on the left hand page, ‘*Seven crocodiles snapped at the cake*’. Anna looks across at the facing page eight before moving her gaze to the bottom half of the left hand page where the seven crocodiles are represented. She responds to Rob’s reading of the line at the bottom of this page with an affirmative ‘yeah’, in which the vowel sound is lengthened and combined with a breathy vocalisation. The effect of combining these voice quality features with the verbalisation is to make the affirmation operate at a textual level, interpreting the crocodiles snapping at the cake as being perhaps exciting and dangerous, as well as an interpersonal level, responding to Rob’s reading of the line. At this point however, Anna’s attention is drawn to to an image above the crocodiles and her gaze moves up to the top left hand side of the page to where the acrobats are represented part falling and part hanging from their trapeze; there is a pause in her activity whilst she engages visually and analytically with this section of the page.

At the beginning of Episode 2, Anna has taken control of the event, continuing to concentrate on the top right hand section of the page, designating it as the area of focus of her analytic activity. She then uses a deictic gesture, pointing with her finger to the exact locus of her interest within this area, mediating her visual analysis of this section of the page; it is the empty trapeze swing, represented as hanging freely from the top of the page, which has been derived from her analysis as a key signifier. Anna now uses a linguistic resource, mediating the reason for her interest in the trapeze swing through her verbal statement, ‘is is hands’. However, the verbalisation on its own is not enough to communicate what is signified by this visual image; by combining it with marked prosodic resources, Anna is able to add meaning which is distinct from the lexical items she uses. The pitch on the first two syllables is high, but then falls on the final syllable ‘hands’. This final syllable is lengthened and stressed through the falling pitch. The high pitch suggests an affective response; in this case an expostulation that on this page the acrobats are no longer safely holding onto their swing. This protest suggests that for Anna the lexical items ‘is is’ have a modal function; there *should be* someone holding

on the swing. The stress on the lexical item 'hands' marks this as the subject of this possibility; the complete statement being along the lines of 'it is hands that should be here'. Her interpretation of this possibility is textual, derived from her comparison of the image on the previous page which Rob has just turned over, with the image on the page she is currently looking at. Her use of the word 'hands' in her verbal mediation of this textual interpretation however, extends the use of this item beyond its usual semantic boundaries. It is in fact the acrobats' legs which hold onto the trapeze, but in this setting she concentrates on those semantic constituents which best enable her to signify the sense of a limb which has the capacity to hold onto something (and conversely to not hold onto, or to let go of something). At an interpersonal level this extended meaning is clarified by combining it with a gestural resource which locates the visual image to which the word relates and so makes it clear to Rob to what she is referring. Each of these modes of mediation, gaze, gesture and language, which are used by Anna in this section of activity, is combined with selected visual constituents from the page to generate and interpret meaning; however each mode operates uniquely in this process, with a distinct and identifiable function and purpose.

The signifier at the centre of this activity, namely the representation of the empty trapeze swing, is a marked element on the page in being distinct from the other items of its semantic set, the acrobats and the other trapeze swing; as has been said, it swings independently, no longer graphically connected to these other elements as it was on the previous page. By contrast, the rest of the acrobat 'set' is arranged so that each element is connected graphically (each acrobat in the line is represented as physically connected to another by touching or holding arms or legs), and also by a consistent pattern of spatial organisation (two parallel lines of three falling acrobats, each having arms extended downwards in the direction of the falling cake). Anna's interest and concern seems to lie with the disequilibrium created by the disconnected state of the swing on page seven. The image signifies a spatial disequilibrium between elements which on the previous page had represented both spatial equilibrium (each element linked graphically to another) and narrative equilibrium (the action of the acrobats in picking up the cake to return it to safety); in other words things are not where they ought to be. Anna's analysis of the status of this marked, free hanging swing starts with her interpretation of

the unmarked swing sign on the previous page. Her verbal response to this a vocalised 'hmm', a sound within discourse often associated with marking time or avoiding a committed response. This interpretation would have been mediated both visually, through her interrogation of the image and aurally through Rob's reading of the sentence at the bottom of the page (*Six acrobats picked it up*). It is also possible that this page had been subject to more intense interpretative activity during previous engagements with the text; in other words, it is likely that Anna is bringing to her analysis of the second image of the acrobats a complex multimodal sign which had been generated on a previous occasion. The disequilibrium which the empty swing on page six signifies to Anna, is a signified which results from her comparison of the unmarked and marked signs on pages six and seven respectively. By combining the modes of gesture, language and prosody as has been suggested, Anna's analysis is mediated interpersonally through the activity she engages in with Rob. In this sense she uses Rob himself as a resource, developing her interpretation of this part of the text through this process of multimodal interaction around the visual images on the page. This process also enables Anna to realise her interpretation in material and physical form through these different modes of mediation.

Rob responds to the initial sequence of activity by reinforcing her interpretation of the significance of the empty swing and extending her analysis at a narrative level to the lower section of the illustration: 'the acrobats have let go haven't they'. Anna now moves her gaze down and points to the other trapeze swing which still has the legs of one of the acrobats looped over it; she then turns her gaze to Rob, engaging him in her visual interpretation of what is represented by this image and mediating this through her verbalisation, 'yes hold this, 's hold this'; The acrobat's limb attached to the swing represents the contrasting state of equilibrium: the empty swing *should be* held in the manner of this one; the use of the demonstrative here develops the modal function established at the beginning of this episode. The affective tone is also repeated here, but is conveyed in the urgent repetition of the phrase this time. Rob echoes what Anna says and she then moves her gaze back to the page, returning to the textual mode and signalling an end to her concern with this semiotic event by the action of moving her hand from the page. The sequence of activity around the image of the swing in which

she has been engaging has the potential to transform her interpretative interest in a specific instance of spatial and narrative disequilibrium through the generation of a sign which can be used as a resource independently of this specific environment; in other words a resource which is transferable and available for use in future activity.

At the beginning of Episode 3, Anna uses a deictic gesture again, pointing at the legs of the bottom acrobat on the right to identify which part of the image signifies her focus of interest. Across each leg, at the point where there is an obtuse angle representing a bend, is a small black mark; presumably it is the intention of the illustrator to use this mark to represent the bend of acrobat's knees. She combines the gesture with the verbal deictic 'there', to narrow the visual focus more clearly, indicating which particular part of this section of the acrobat's knee concerns her, pointing to the black mark on the right hand knee. She also retains the deictic gesture, lifting her finger up and down on the page to physically maintain attention on the signifying mark.

Anna now uses a verbal resource to explain what it is that the mark signifies to her: 'it's poorly legs'. Her articulation is very clear here, but Rob does not pick up what she says, instead transforming her statement into a continuation of their previous dialogue, 'he's holding the legs'. The rising tone on the final item 'legs' suggests a question, implying his uncertainty and querying what she has said. Anna's verbal response to the mark on the acrobat's leg however, would seem to signify that she is drawing on something other than her textual experience at this point in her interpretation; in other words she needs to use resources which are not provided by the text in order to interpret it. The black lines are graphically reminiscent of the type of mark made on children's knees when they fall over and cut them, particularly if the cut then has a plaster stuck over it. In using the lexical item 'poorly' in relation to the legs, it is likely that she is using the word in the extended or even metaphorical sense of there being something wrong with it, of the knee being sick. This acrobat's legs are also marked in the other sense of the word, in that it is only one of the six whose legs are represented with a line across them; Anna's analysis needs to account both for the particular graphic image and for the fact that only one of the acrobats is represented in this way.

The initial resource drawn on in this sequence of activity is a spatial one, in the sense that Anna's visual mediation of the image involves relating the black mark to its surrounding space. However to develop this interpretation at a textual level, Anna needs to consider what both mark and space actually represent. The space is bounded by lines in such a way as to clearly resemble legs (albeit somewhat crudely). A connection is also needed between this representation of the legs and the mark, in the sense of establishing what it is that the mark resembles in relation to the representation of the legs. In order to establish this, Anna needs to be able to make a semantic connection between the two forms of representation. It is in trying to make this connection that Anna is likely to need to look beyond the text and draw on her personal experience. Cut legs are likely to be something she has experienced either directly or indirectly. Such experiences are also integrated in a narrative framework; temporal experiences which happened or were recounted to her and can then be drawn on as an interpretative resource in a different connection. However, in the case of the signified 'poorly legs', these experiences have not been used in their entirety; the generation of this resource has involved a selected combination of those constituents of the experience which enable Anna to make a satisfactory connection between object, form and meaning. Only certain aspects of experiences around cut knees will be relevant to explaining the mark (so, for example, it is not something which tends to happen to several people simultaneously, which would explain why it appears to have happened to only one of the acrobats). It is also the case that this selection involves deriving constituents from experiences with a temporal, narrative framework to account for a signifier, the black line on the acrobat's knee, which is available to Anna in a visual and spatial mode. It is through the mediation of Anna's use of gesture and language that these modes intersect to create a sign; the pointing and tapping of the gesture locate, in a material sense, the locus (in the sense of the position where certain conditions exist or occur) of the spatial signifier; this is intersected by the narrative, temporal signified, mediated through the verbal mode.

Anna completes her interrogation of the acrobats by moving her finger down the right hand line, holding it finally in a white triangle of space made by the outstretched arms of the bottom acrobat, just above the cherry on top of the cake. This gesture indicates the

cherry as the most likely subject for Anna's final linguistic turn in this episode. The first three phonemes (stʌ) of her first lexical item are repeated and the second item sounds like (tʃræŋ). This is mediated by the gesture which connects what Anna says to the image of the cherry. It is most likely that it is this image which is the signifier here; linking this to the phonemes which Anna uses, signifying an experience which she has had in relation to sticking cherries on cakes; 'we stuck cherry' perhaps. This would be reminiscent of the first scene in which Anna draws her personal experience around the cake making process into the activity of textual interpretation; intersecting the visual and spatial representation of the cherry with the temporal experience of icing cakes, mediated by the gestural and linguistic modes respectively.

At the start of Episode 4, Anna moves her gaze from page 7, across to page 8 on the left hand side near the centre fold. Rob now tries to take control of the episode by re-introducing the written story narrative. He also encourages Anna to articulate the narrative herself by turning the statement printed at the bottom of the page into a question: 'and who saves the cake here?' He identifies the location of the deictic with a pointing gesture, directed towards the right hand side of the page where the eight firemen are holding a circular sheet into which the cake has landed. Anna responds by moving her gaze across the page to where Rob is pointing, propping her hand under her chin to focus more clearly. She interrogates the image briefly, mediating this with a repeated vocalisation which is characteristic of the type of sound used to signify a pause for consideration within discourse. She then sweeps her gaze slowly back across the page towards the left, punctuating this movement with an extended intake of breath. The relatively brief focus on the visual image of the fireman, in response to Rob's verbal question, and steady, but continuous sweep of her gaze over the rest of the page suggests less an interest in responding to the question than in interrogating the page for something which she finds personally significant. Failing to get a response to the question, Rob answers it himself whilst Anna returns her gaze to the representation of the fireman and responds affirmatively to Rob's statements, but shows no interest in initiating further interpretation of the page.

TABLE - CB Scene 5

Local Setting

Rob has just turned the page over and Anna is resting her arms on the table, looking intently at the left hand page

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|------------------------------|--|--------------------------------------|---|---|
| EPISODE 1 [20 secs] | | | | | |
| Rob Ni ne bee' s buzzed around the cake | | | gaze on bottom section of page | | Bees flying left in line from bottom right of page starting to encircle cake dropped by firemen over patch of blue at bottom of page - distance represented by perspective with the bees at head of line small and those at end large largest bee in foreground on white of page - four others on blue water in varying sizes - bees black, yellow and white smallest bee at end of line - quarter of size of largest |
| Anna yea | | | | | |
| Rob can you see the bees | | | gaze moves slightly down the page | | |
| Anna yea babies babies bees | Rob [bs bs bs bs bs] | Rob points at bees in line with forefinger to accompany vocalisations, starting with those in the foreground Anna points to smallest bees at end of line | follows movement of Rob's finger | | |
| cake | | | | moves hand quickly from page, jogging book | cake on bottom right of page encircled by smaller bees |
| | | quick stabbing point at cake | gaze on cake | crumples page slightly through speed of gesture straightens page with right hand | |
| Rob baby bees why because they get smaller | [hə hə hə high pitch] 6 secs | pats page with left hand to right of bees | | | |
| Anna yea | | | | | |
| Rob could be | Rob m | | gaze intently on bees | | |

TABLE - CB Scene 7

Local Setting

Anna has just responded to Rob asking her what the frogs are called by telling him enthusiastically. Rob has read the written text about the frogs.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---------------------|---|---|--|--|---|
| EPISODE 2 [18 secs] | | | | | |
| | | points finger at left page moves pointing finger onto page along the line of fish - holds on third fish along moves finger on to next fish finger held on fourth fish | gaze moves back to bottom left of left hand page | Anna turns her body to the left towards the left hand page | eleven green fish swimming in two lines underneath a log from which the frogs -larger than fish - are jumping third fish along - horizontal to page fourth fish along face on looking up at frogs frogs jumping over cake |
| Rob | there are the fish | | | | |
| Anna | yes | | | | |
| Anna | babies fish | | | | |
| Rob | are they | | | | |
| Anna | yea (long) | | | | |
| Rob | why are they baby | | | | |
| fish | | | | | |
| | [əusk high pitch] [p ^h] 3 secs | | | | |
| Anna | over there | points to frogs on right hand page | gaze moves across to right side of facing page | takes hand off page | fish on left hand page |
| Anna | frogs | | | | |
| Rob | there's the frogs | | | | |
| | Rob m | | | | |
| | | | | looks at Rob | |

CB Scene 5 and CB Scene 7

In this section, Episode 1 from Scene 5 and Episode 2 from Scene 7 will be discussed together. In each of them Anna uses a similar spatial interpretation of a section of the illustrations of each page, but derives the interpretation in each case through different routes; different ways of combining and mediating the visual resources provided by the illustrations with other resources which Anna brings to her activity. In this way these interpretations are related but discrete.

The first episode from Scene 5, follows the episode from the previous scene, described in the last section, in which Anna chose not to mediate the results of her visual interrogation of the page in response to Rob's question. This time he starts the episode by reading the written text, stressing and lengthening the first two items and stressing and raising the pitch of 'buzzed'; this would seem to have a textual purpose, foregrounding the new action which is introduced on this page; but also an affective purpose, using prosodic resources to encourage Anna's interest. Anna has her gaze on the bottom section of the page where the action is taking place and so is engaging visually with the representation of the bees. However she only gives an affirmative 'yea' as a reaction to Rob's reading, responding interpersonally to him and acknowledging that he has spoken, but still not mediating any textual response through linguistic or gestural channels. Rob persists in his efforts to encourage a textual response from Anna. In contrast to the question which he asked her in the last episode of the previous scene, where he tried to elicit from her an articulation of the subject of the linguistic narrative of that page, this time his question focuses on an earlier stage of this interpretative process, checking whether she is engaging with the text visually, 'can you see the bees?'

He then extends the question, mediating this through the use of vocalisations and gesture: he points at the individual bees flying round the cake using separate, deictic stabbing actions, accompanying each action with an onomatopoeic vocalisation intended to sound like a bee buzzing. In this way he both identifies the section of the page which he wants Anna to look at and foregrounds the action described within the written textual narrative. In his selection of resources here, Rob is combining the textual and affective. Within the textual mode, he is most likely drawing on his professional

experience in attempting to draw Anna's attention to the content of the written language of the page. The nature of Rob's professional interest and experience at this time would be likely to lead him to emphasise the written language on the page rather than the visual representation. Not only that, but he also privileges the linguistic over the numerical mode, even though the book advertises itself as a book about numbers and counting; his use of prosodic resources stress the key action within the narrative of the text, not its quantitative features. His use of affect during this activity has a two fold function: on one level the pointing and buzzing sounds are designed to interest and amuse Anna and continue to engage her interest in the text; on another level though, Rob's professional awareness of the institutional requirements of literacy, of what schools will consider important knowledge about texts, is highly likely to have engendered a parental concern that this should start to be made visible and available to Anna at an early stage.

During this activity on Rob's part, Anna's gaze has remained focused on the bottom section of the page where the bees are depicted; as she gives her affirmative response, she moves it further down the page, presumably to look more closely at the bees in the foreground. At the point when Rob points at the bees, Anna follows the progress of his finger along the line with her gaze. In other words, she has been engaging in a process of visual analysis involving this section of the page throughout the time that Rob has been trying to entice her just to look at it. After following Rob's pointing, she holds her gaze at the end of the line, on the smaller bees 'in the distance', indicating her continued operation in the textual mode. She now mediates the results of the interpretative process in which she has been engaging, through the linguistic and gestural modes: she first verbalises what it is that is being signified by the graphic image she has been looking at, 'babies babies bees'; she then points to one of the smallest bees in the line, identifying it as the signifier in this process of interpretative analysis.

During Episode 2 of the previous scene, it was suggested that the existence or not of spatial equilibrium amongst the visual elements which are part of a semiotic object, constitutes a semiotic resource which can apply in various circumstances. In the case of the line of bees, there is no previous representation of which this set can be seen as a

transformation. What interests Anna in this case is to account for transformation within the set: each bee is represented with the same colour combination (black, yellow and white) and the same basic body elements (head, eyes, antennae, body, wings, and legs); but there are differences in how they are represented according to their physical position in relation to the cake (flying towards it or facing it) and the size of the bees (large or small, depending on whether they are near or far from the starting point). Anna's concern here is the differential in the size of the bees and in particular the smallness of the small bees. As in Episode 3 in the previous scene, Anna needs to have recourse to resources which are not part of the text in her interpretation of these circumstances. The experience she draws on here is a very immediate and personal one; an affective as well as a conceptual one: small things are likely to be small because they are young and youngest of all, and therefore smallest, are babies. Anna, having experienced this stage, but having grown beyond it can view it as a material condition from which she is now separate; it is an experience from which a semiotic resource can be derived. Like the 'poorly legs', some of the constituents of this resource are temporal, in that growing involves the passing of time, changing experiences and the use of narrative to reflect on it. On the other hand it also has spatial constituents which derive from social and bodily experiences. Growth involves physical and material changes to the differentials between space and self and other bodies and objects. It is therefore a compound resource, from which is generated a signified with constituents which intersect with the visual signifier through both spatial and narrative channels. It is also arguable that Anna in fact generates two related signs: in the first it is the spatial constituents which intersect with a signifier which consists of a set of bee representations of different sizes; the sign which is derived from this intersection might mean simply that there are significant differentials in the relationship between the size of the forms and the surrounding space. In the second sign, where the narrative resources intersect, these differentials are accounted for by age and growth. It is this second sign which is mediated interpersonally as well as textually through language and gesture. The first sign, arguably, is mediated through Anna's gaze during the time in which she was silently scrutinising the page.

Anna's verbalisation and gesture materialise her analysis both to Rob and to herself; it closes down this particular sequence of activity and she is ready to move on. She quickly follows this with another verbalisation, 'cake' and a gesture which is so vigorous that the page is slightly crumpled and the book moved. The boundary between the textual representation of object and the reality of the physical object is weak here. The image of the cake suddenly seems to Anna like an object which can be physically removed from the page. Whilst Anna is engaged in this short sequence of activity, Rob responds to her interpretation of the bees as baby bees, asking her if it is because 'they get smaller?'. She responds affirmatively, maintaining her visual concentration on the relevant section of the text. Rob, however, has recourse to a modal 'could be' and a vocalisation which suggests uncertainty; he is unwilling to challenge her hypothesis, but at the same time is unable to react positively to something which does not fit with his way of interpreting the illustrator's use of perspective. The illustrator has used the strategy of differential sizes to generate a particular visual meaning within part of the semiotic object; in this situation however, the visual strategy deployed by him mediates quite different meanings for Rob and Anna, both of which make interpretative sense in the light of the connections which are made between their social and cultural experiences and the visual evidence on the page.

In the first episode of Scene 7, Anna scans the top section of the page with her gaze in response to Rob asking her to identify the new character on the page. He then reads the written text at the bottom of page twelve (*Twelve frogs jumped over it.*). At the beginning of the second episode Anna moves her gaze from the top of the page to the bottom, then turns her body to the left so that it is angled towards the left hand side of the page, giving her a longer view of the fish on the bottom of the page. She also points her right forefinger at the bottom of the page. In her coordination of gaze, action and gesture, Anna is preparing to engage in interpretative activity in which it would seem that the fish at the bottom of the page rather than the frogs at the top are the focus. Keeping her body in the same position and her gaze on the page, she then moves her finger onto the page and moves it along the top line of fish from right to left, following the path she is describing with her gaze. She pauses half way along, holding her finger on the third fish; she then moves on to the next one and stops again. This fish is

represented as having its head turned forward and its eyes upwards towards the frogs; in this it is marked from the rest of them which are all depicted from a sideways view. At this point she stops the passage of her finger and continues to hold both her gaze and her finger on this part of the page. This is followed by a vocalisation, an aspirated 'p', [p^h] .

Anna's pointing gesture in this sequence is in textual mode; even the position of her body is angled away from Rob in order to give her the best possible view of the page for her purpose. This precludes the possibility of the gesture having an interpersonal function. It also provides a physical mediation of her visual interrogation of the representation of the fish. The vocalisation is reminiscent of the kind of noise produced when effort is being made or difficulty encountered; in combination with the way in which she is deploying her gaze and gestural resources, it suggests the effort and difficulty of the interpretative problem in which she is engaged. The whole process continues for about six seconds, a third of the episode, with no verbalisation from Anna. Rob responds to her gestural activity with a linguistic deictic 'there are the fish'; this is interpersonal in intent, most likely encouraging Anna to articulate her visual analysis in the linguistic mode. Fleeting, she moves her gaze to the opposite page in response to this, perhaps thinking he was referring to something on that page; and being positioned in such a way as to not be able to catch the direction of his glance, she needed to make a visual check against the verbal statements she has heard. However she quickly returns her gaze to the section of the page still marked by her finger before finally using a linguistic resource: 'babies fish'; she completes this sequence by using her gaze interpersonally and interrogatively to request a response from Rob to what she has just said.

Although the verbal signifier 'babies' is used by Anna in relation to the fish as well as the bees, there are significant differences in the nature of the interpretative process which she goes through in generating the two signs. In the case of the visual representation of the fish, they are all approximately the same size so that their relative sizes are not likely to be significant; there is spatial harmony within the group in this respect. The differences on the page which do relate to size are between the two sets of

creatures, the fish and the frogs; the former are smaller than the latter. Her extended visual interrogation of the fish is mediated through her gaze, but materially through her gesture; at the point at which she stops her gesture, it is the visual image itself, the marked fish looking up at the frogs, which is likely to have drawn her into this comparison, signifying this to Anna at a textual level. The compound sign generated in Scene 5, which meant there was a significance attached to differentials in relationships between size and space which could be accounted for by growth and age, is here used as a resource independently of the setting and resources used to generate it. Here Anna is able to use it to interrogate and analyse visual and spatial relationships between objects represented on the page, in this case the frogs and fish. Her activity at this point is entirely in the textual mode, drawing on resources generated through her previous interpretative activity within the text.

Anna takes her hand off the page after her interaction with Rob, signalling the closing of this sequence. Rob however tries to maintain it, asking Anna to articulate a reason for her deduction: 'why are they baby fish?'. At this point, Anna returns her gaze to the fish, but does not answer the question, drawing on a range of vocalisations which signify deliberation, but also at an affective level a resistance to answering Rob. She resolves the problem by deploying a sequence of activity to draw Rob's attention away from the locus of the question. She moves her gaze right across to the other page, as far away from the fish as possible, pointing to the frogs represented on the right hand side of the page, and attempting to draw Rob's gaze away from the fish by also directing him verbally, 'over there'; she follows this by identifying what it is she wants him to look at verbally whilst engaging him interpersonally by moving her gaze to look at him. Whilst Anna is able to draw on resources in different modes to generate and interpret multiple meanings, she is unwilling to engage in what could be termed meta-semiotic discourse in the linguistic mode; in other words, she is aware not only of how to use different semiotic resources in different modes, but also their limitations in relation to her own level of skill and experience with them.

TABLE - CB Scene 8

Local Setting

Anna has just signalled completion of the previous scene by folding her arms emphatically. Rob turns over to the next page thirteen.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|--------------|---------|---|---|---|
| EPISODE 1 [8 secs] | | | | | |
| Rob 13 butterflies flew off with the cake | | | gaze on facing page gaze on left hand page gaze returns to facing page | arms on table - hands held together under chin | on facing page thirteen blue butterflies flying in oval formation diagonally across top half of page carrying large net which holds cake in bottom - written text goes across double page and fish swim across bottom of both pages |
| Anna Yeah | | | | | |
| Rob In a net | | | gaze moves to top of page | | |
| Anna yes | | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|---|--|------------------------------------|--|--|
| EPISODE 2 [40 secs] | | | | | |
| Anna fies [high pitch] | manna [high pitch] sees fies [high pitch] | points to butterfly on bottom curve of oval | gaze on butterflies at top of page | | butterflies flying to corner butterflies in bottom curve of oval holding side of net |
| Rob today | manna see se fies / today you saw some butterflies | | looks at Rob | | |
| Anna Rob | yes where | | looks ahead | | |
| | [ʌ ^h ɛs] 2 secs | | looks at Rob - head tilted back | moves fingers on edge of page lifts page up at edge and holds | |
| Anna Rob Anna Rob | ar the shops at the shops / yes you saw some butterflies | | | | |
| Anna Rob | mummy daddy mummy di daddy oh you meant / | Rob touches Anna's arm with forefinger | looks down at book looks ahead | lets page down - continues to hold side of book | |
| butterflies didn't we | we went to see some butterflies | | looks at Rob | | |
| Anna Rob Anna Rob Anna Rob | daddy I came with you dan mummy and mummy and David Yes the butterflies were | Rob removes finger | | | |
| flying all over weren't they | | | looks ahead | | |
| Anna Rob Anna | Yea that was good wasn't it yes | | gaze on facing page | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|--------------|--|------------------------|--|---|
| EPISODE 3 | | | | | |
| Rob do you know what colour these butterflies are | | Rob makes three pointing movements on bottom line | gaze on page | | three butterflies in middle of bottom curve of oval |
| Anna yes eh big ones | | | | | |
| Rob big ones | | | | | |
| Anna babies ones | | points to one of smaller butterflies | | | second butterfly in line - one of smaller ones |
| Rob yes | | | | | |
| Anna there | | | | removes hand from page and props head in hands | |
| Rob and what colour are they? | | | | | |
| Rob are they like your cardigan? | [ε:] 1 sec | rubs Anna's cardigan with finger | looks at Rob | | light blue knitted cardigan worn by Anna |
| Anna mm | | | | sneezes into cardigan | |
| Rob are they the same colour as your cardigan | | | | | |
| Anna yes | | | | | |
| Rob what colour's that | | | | | |
| Anna not know | [ε:] 2 secs | | looks ahead | rubs nose with sleeve | |
| Rob you do | Rob laughs | | | | |
| Anna not know | | | gaze on page | | |
| Rob is is blue? | | | | | |
| Anna yes | | | | smiles | |
| Rob yes | | | | | |
| Anna yeah | | Rob makes three pointing movements on bottom line of butterflies | | leans back from table | three butterflies in middle of bottom curve of oval |
| Rob says blue butterflies | | | | | |
| Anna yeah | | | gaze on left hand page | | |

Discussion of CB Scene 8

Only Episode 2 from this scene will be discussed in detail, with the other episodes referred to where relevant. The discussion will centre around the way Anna uses a focal visual element of the page to generate a narrative reflection in the linguistic mode. This differs from the activity previously discussed, in that the image acts predominately as a resource to develop an interpretation of the experience, rather than the experience being developed as a resource to interpret the image.

In the first episode, the page is turned over to a double paged spread and Rob reads the written text on the bottom of the left hand page (*Thirteen butterflies flew off with the cake.*). Anna's gaze now rests on the image of the butterflies on the facing page. At the beginning of Episode 2, she continues to interrogate this section of the page, using her gaze analytically. She then points to one of the butterflies, using the gestural mode interpersonally to indicate to Rob what it is she is referring to. When Anna speaks, the pitch she uses on the first and last lexical items, 'manna sees flies' is high, with the final item also lengthened and giving it additional emphasis. Her use of these prosodic features is affective, giving the whole a tone of surprise at the coincidence of there being butterflies on the page and butterflies in her recent experience. The importance of this coincidence is stressed by the repetition of the sentence which has the addition of the non-specific deictic 'se' (assumed here to mean 'some'). For Anna, the criterial elements of the coincidence are quantity and movement; not just *a* butterfly, but a number of them flying around together.

There is a very slight pause as she turns to look at Rob and completes what she wants to say by adding the word 'today'. Her articulation of some phonemes is not quite conventional, but Rob has no difficulty understanding the manner of her speaking. He does however return the sentence to her with a rising, questioning tone, querying the import of what she says. Given that it is still very early in the morning and that Rob has been with Anna since she got up, he is naturally puzzled by the suggestion that she had seen the butterflies on that day. When Rob asks Anna where she saw them, she follows this by a sequence of actions which, it can be argued, are a physical and material indication of her process of reflection. Unlike at the end of Episode 2 in Scene 7, in this

situation Anna chooses to persist in trying to mediate her meaning for Rob through the linguistic mode, keen to explore the memory of the experience signified by the image of the flying butterflies with Rob.

She alters her gaze so that it is directed neither at Rob nor at the text, but straight ahead, indicating activity that is neither interpersonal nor directly textual but reflective; motivated by the need for complex introspection about both the meanings to be mediated and the form in which they are to be expressed. The vocalisation, slight though it is, combined with this mode of gaze, suggests the effort that is generated by this reflective activity. Her gaze shifts towards Rob again, but this time with her head tilted back so that she seems to be moving between interpersonal and introspective modes; at the same time she moves her fingers on the edge of the page, a material indication of ongoing cognitive activity. When she does give a linguistic response, it is to answer Rob's question directly, 'a the shops'. Anna has already used the lexical item 'today' as a resource to signify not present time, but a specified occasion or period of time. Her use of the word 'shops' involves a parallel process. The word is a familiar linguistic resource to Anna and its semantic constituents are likely to include meanings associated with making a special journey to a particular place, going out with members of her family and so on. It is in this sense that she uses the word here, drawing on these familiar semantic constituents in trying to convey to Rob that she is referring to a special outing of some kind. However this does not still seem to quite satisfy. She accompanies this answer by more intense activity with the edge of the page, lifting it right up as she speaks; and Rob's response to this, 'at the shops / you saw some butterflies' still carries a questioning inflection, confirming to Anna that she has not yet communicated her intended meaning. She now takes a slightly different tack, moving on from the time and place where the butterflies were seen to add information about the other participants, 'mummy di daddy'. This finally enables Rob to understand the meaning which Anna has been communicating. His sudden realisation is expressed by language followed by a slight pause, 'oh you meant / ' and gesturally by touching Anna's arm. His use of the word 'meant' acknowledges both Anna's motivation at all stages of the process of communicating an intended meaning and the work which has been involved in achieving this.

The episode now becomes an interaction around a shared reflection: ‘we went to see some butterflies didn’t we’. What the image of the butterflies flying all over the page had signified to Anna was the memory of a large quantity of butterflies flying all around her during a visit to a (then) local tropical butterfly house; in other words a special occasion which was remembered by Anna as an experience with distinct narrative elements: a time, a place, characters, events. It is the spatial arrangement of the butterflies on the page which signifies for her a remembrance of what might be described as a kinaesthetic awareness; the physical, bodily sensation of being surrounded by light, colourful movement. This in turn signifies the temporal experience of which this was a part, motivating her to materialise the memory through her interaction with her father. This is mediated by gesture: Anna identifies on the page the locus of the visual representation (blue butterflies); by introspective gaze: certain signifying constituents in relation to the space on the page (quantity, all over) intersect with equivalent signifying constituents from a temporal experience (many coloured butterflies flying all around); and language: Rob is prompted by Anna (mediated by her gesture, gaze and language) to verbally reconstruct constituents of the experience of the visit.

This leads to control of the central semiotic event of this episode, the linking of the illustration of the butterflies to the visit to the butterfly house, moving from Anna to being shared between herself and her father; however that shift of control is driven by Anna’s need for Rob’s collaboration in materialising the experience of the visit to the butterfly house. Once Rob realises what Anna has been referring to he is able to reconstruct key elements of the event with her: everyone in the family came; the butterflies flew all around them; it was an enjoyable experience. While this linguistic interaction is going on however, her gaze moves from the interpersonal, looking at Rob directly, to an introspective mode, looking ahead and reflecting on the experience as it is reconstructed. During her previous use of the introspective mode in this episode, she linked the textual signifier, the blue butterflies on the page, to her memory of the visit to the butterfly house. Following this combining of resources, she is now in a position where she can, if need be, incorporate the new elements which have been introduced by

Rob in the course of their reconstruction (that the butterflies flew all round her, for instance), and which have been materialised through the mediation of their verbal discourse, into subsequent reflections about the event. In other words, the sign which they have generated can be incorporated into subsequent semiotic activity in which they might engage, forming the basis of other signs which might continue to explore and transform the the experience. During this scene, it is the textual which generates interpretation of the experiential, rather than the other way round, as has tended to be the case in the previous scenes discussed.

TABLE - CB Scene 14

Local Setting

Anna has asked Rob to read the story again; he turns over several pages at once in turning back to the title page.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|------------------------------|--------------|--|--------------------------------|-------------------------------|---|
| EPISODE 1 [15.5 secs] | | | | | title page with title and name of author, illustrator and consultant - illustration of cook, monkeys, elephants and mouse at bottom |
| Anna missed the page | Rob [m] | | gaze on title page | | |
| says | | | gaze on writing at top of page | mouth goes from smile to pout | THE |
| wri' ting | | points to end of 'counting' | | | COUNTING |
| Da' vids | | points to start of 'counting' | | | BOOK |
| wri' ting | | points to end of 'counting' | | | ing |
| | | slides finger back along word to left | | | cou |
| Da' vids | | points to end of 'counting' | | | ing |
| wri' ting Da' vids | | | looks at Rob | finger removed from page | u |
| | | | | | ing |
| Rob writing like David's | | | gaze moves down | | |
| Anna yes | | points to picture on facing page and rubs it | gaze on facing page | | sticker on inside cover with picture of Winnie the Pooh and Eyore on the top and <i>This book belongs to</i> underneath with Anna's brother's name written in blue ink under that |
| Rob David's always | | | | | |
| writing now isn't he | | | | | |
| Anna tiger. | | | | | |

Discussion of CB Scene 14

In this scene, which consists only of a single episode, the central semiotic event is Anna's interpretative interest in the written form of the title of this text, 'The Counting Book', which is printed on the page facing the front cover. Her activity during this event continues to combine spatial and narrative resources, but also anticipates a concern with the use of the physical execution of marking and placing marks as a resource for representing symbolic meaning which is evident during the making of the mothers' day card.

As the page is turned over, and following her reminder to Rob that in turning over several pages at once, he has 'missed the page', Anna moves her gaze onto the title page and then focuses it on the title on the top, 'The Counting Book', printed in bold capitals with a font size of about fifty point. The affective tone of Anna's comment to Rob about the page is amused rather than accusing and the position of her mouth is extended in a partial smile. As she visually registers the written icons, the position of her mouth suddenly changes, with her lips slackening and moving forward. The effect of this is to mediate a change in the mood of the activity from one of amusement to one of serious concentration. This is immediately followed by Anna saying the word 'says'; she then points deictically to the end of the printed word 'counting' at the same time saying 'writing', then moves her finger across the word to the left, pointing to the beginning of the word and saying 'Davids'. A similar pattern is then repeated: finger moved back to the end of the printed word; saying 'writing'; finger slid along the word to the left, stopping in the middle this time; saying 'David's'; finger to the right, pointing at the 'ing' again; saying 'writing Davids'. The stress is on the first part of each word (w^riting Dávids), each stress simultaneous with a gesture; the whole has a rhythmic pattern to it, her finger moving regularly backwards and forwards along the printed image, with the language and gesture in this instance working in concert to stress the oral and physical nature of the rhythm.

The printed image 'COUNTING' signifies a complex of meaning in a number of modes. The visual image 'says' in the sense of having a meaning which can be spoken and this is mediated by Anna linguistically through her 'speaking' the writing, the

repeated phrase 'writing Davids'. In other words she materialises what she sees as the saying constituent of the graphic form in the performative sense of making the writing speak. At the same time, mediated by the action of her hand and her gesture, moving from one end of the printed word to the other, she physically enacts the linear movement across the page which is characteristic of the physical production of alphabetic writing; the deictic gestures break this movement, bounding it principally at the beginning and end of the word where the print meets the white space of the page. Anna's understanding of both the saying and the moving constituents of the written graphic form is derived from social and textual experiences in which narrative, affective, aural and movement resources all play a part.

For Anna, the writing represents what her elder brother David does; it does not resemble it anymore than (again anticipating her activity around the mothers' day card discussed in the next section) her zigzag mark resembles the cats which she draws on the card. This representation signifies both the visual mark and the physical action which David makes when writing. However, this writing activity has taken place in the course of the social interaction and play which she shares with her brother; in other words the sign being discussed here presupposes the existence of other signs in which narrative and affective resources are significant; something along the lines of 'I can recall times and places and scenarios when I have enjoyed watching and participating whilst David is writing'. The saying of the writing is also resonant of narrative, affective, and also aural resources derived from her experiences of being read to by her parents and her brother; the rhythm which she gives to 'writing Davids' echoes the more regular rhythmic patterns given to language when read aloud rather than spoken; it has an independent role within the sign, like other prosodic resources discussed previously, signifying a distinction between saying and 'saying writing'. In generating this sign, Anna intersects this previous aural and narrative signification, mediated by prosody and language, with previous signification involving resources of physical action, mediated by gesture and language, through a signifier composed of visual, graphic and spatial resources. The sequence of activity ends with Rob affirming Anna's re-enactment of her brother's engagement with the written mode by his statement, 'David's always writing now isn't he'. Writing is here signified to Anna as common

social practice; something you come to do at a certain point in the ordinary course of events.

TABLE - STG Scene 1

Local Setting

Anna has just finished playing with the posting game and Rob is trying to persuade her to build a tower with the stacking cups.

| Language | | Vocalisation | | Gesture | Gaze | Action | Semiotic Object |
|---------------------|---|--------------|----------|---------|--|--|---|
| EPISODE 2 [38 secs] | | | | | | | |
| Rob | Let's see you build a tower I'll make a film of you making a tower. | | | | | plays with cups held over hand | |
| | | | | | | puts blue cup on table | blue stacking cup largest of set |
| Anna | daddy | | | | looks at Rob with screwed up face gaze on yellow cup | Rob walks away from table | |
| Rob | I'll watch you | | | | | puts yellow cup on blue | yellow cup stacked on blue |
| Anna | yea | sigh | 0.5 secs | | gaze on hand on green cup gaze on cup looks towards Rob looks down at red cup in hand | turns green cup in hand puts green cup on stack | green cup stacked on yellow |
| | | | | | | pulls red cup off hand and puts on stack | |
| | | | | | gaze on top of stack | puts small red cup on table - stands up on chair holding blue cup in right hand and yellow cup in left | red cup stacked on green |
| Anna | see the bebbow | | | | gaze on yellow cup gaze on red cup | puts blue cup on stack puts yellow cup on stack | blue cup stacked on red yellow cup stacked on blue |
| | | Rob | [m] | | | picks up red cup in right hand - moves to left hand to turn round - puts on stack | |
| Anna | there | | | | | takes hand off cups | |
| Rob | well done | | | | looks towards Rob | stands on chair with hands behind back | |
| Anna | this go | | | | looks and smiles | | |
| Rob | well done that's very good | Rob | laughs | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|----------------------------|----------------------------|---------|------------------------|-----------------------------|-----------------------------|
| EPISODE 3 [14 secs] | | | | leans towards cup stack | |
| Anna I / | | | | | |
| Rob can you / | | | | | |
| Anna I blow it | | | | leans further towards cup | |
| Rob oh no are you go on | | | | stack - puts left hand on | |
| | | | | table - mouth to top beaker | |
| | [p ^h :] 3 secs | | gaze directed at Rob | pushes red cup off with | stack on table - red cup on |
| | Rob [əʊ] | | | mouth | floor |
| | [p ^h :] 1 sec | | gaze on top yellow cup | blows - pushes with mouth | bottom blue and yellow |
| | | | | - top of stack | cups still stacked - rest |
| Rob oh dear | | | looks at Rob | | fallen on table and floor |

Discussion of STG Scene 2

The stacking game with which Anna is playing during this scene, is a semiotic object which, like the counting book, has a pre-existing physical and material structure, and a symbolic purpose which has, to some extent, been predetermined by its producer. However, as the preceding discussion has shown, the interpretative boundaries of the counting book are very flexible; in the case of the stacking game, the boundaries are much more rigid, in the sense that moving them significantly entails changing the symbolic purpose of the object. In this sense it is a quite different object to the book whose symbolic purpose requires interpretative activity. The game consists of a set of seven plastic beakers which fit into each other with the largest as the outside container, but which also stack on top of each other with the largest acting as the base; in this way they are transformed into a different object, a tower of beakers. Like the elements of the sorting game, they are designed to be deconstructed and reconstructed in the course of play and, since the object is three dimensional, the processes of transformation involve frequent physical manipulation of its elements. The beakers could of course, be used as very different kinds of play objects (to hide objects under, to contain things, to be incorporated into another constructions and games, for example), but this would entirely transform their original purpose

Episode 2 follows Anna's playing with the sorting posting game and is initially dominated by interpersonal and affective activity. Rob is keen to film Anna playing and is explicit about his intention to do this: 'you build a tower I'll make a film of you making a tower'. He follows this statement by moving away from the table towards the camera and Anna expresses her dissatisfaction at his intention not to be involved in playing the game. This is done verbally by her saying 'daddy', but with the protest mediated both through her expression, screwing up her face, and the high pitch she uses when articulating the word. The cups in the set are stacked one inside the other and held in Anna's left hand; she has already taken the largest, the blue one, from the bottom and placed it on the table. Rob reassures her that he will continue to watch what she does and, mollified, she then moves into textual mode, turning her gaze onto the yellow cup and placing it on the blue, starting to create the tower; the same process is repeated for the green cup. At this point however, she looks up towards Rob, shifting

for a moment back into an affective mode and checking to see if he is still watching her, mediating this monitoring of the situation through her gaze. She returns to the textual mode, looking at the cups in her hand and repeats the activity, adding a red and another blue cup to the stack. She then adds the second yellow cup and whilst doing this, she returns partially to the interpersonal mode, mediating this shift through her language and calling Rob's attention to her action, 'see the bebbow (yellow)', perhaps because this is the first repetition of a colour. Her gaze however retains an object focus concurrent with this, remaining fixed on the cups. Once she puts the second red cup on, finally completing the stack, she returns fully to the interpersonal mode, signifying satisfaction with this completion through her bodily action (standing upright on the chair with her hands behind her back in front of the tower), her gaze, (looking at Rob and smiling), and her language ('there').

Anna's use of gaze in this part of this episode has a pivotal role, linking the interpersonal mode into her activity, which is reminiscent of the pattern of activity in MD Scene 2 Episode 3, where Anna adds features to the cat's face. In the MD Scene, action is suspended whilst her interpersonal gaze is combined with language and gesture to materialise and locate the identity of the mark she has just made. In this scene action is also suspended when she moves into the interpersonal mode, however there is no combining of gaze with language or gesture; indeed there is no gesture used at all, a pattern already identified in the SG episodes. The form and identity of the set of cups are a 'given' with which Rob and Anna are both familiar, not just because of the unchanging material structure of the elements, but also because it has a social function within the household as a regular play object. The existence of fairly fixed boundaries associated with it (as with SG) also means that the nature of its transformation from a set of cups stacked inside each other to a set stacked on top of each other (or vice versa) is also predictable. These boundaries are in fact re-established by Rob at the outset of Anna's play when he asks her to build a tower. The whole activity is more in the way of the re-running of a well used resource, with each cup signifying a stage in a familiar process, rather than of generating an interpretation. Whereas during activity around the counting book, language and gesture are commonly used to mediate and thereby materialise new symbolic interpretations which are being generated, here, as

with the sorting game, the symbolic role remains the same, with the transformation in which Anna is engaged signifying the re-enacting of a familiar process. What is subject to change is the way that the process is combined with affective, interpersonal activity with Rob. At both this interpersonal and at an object level, Anna uses her gaze to monitor physical activity: to check Rob's actions to see whether he is watching what she is doing; and to monitor her own physical actions as she moves the cups from hand to hand and builds the tower. In terms of mediation, gaze here performs a rather different role from the very analytical purpose that it has in the cases of the counting book and the mothers' day card.

By Episode 3, the tower signifies an object to be transformed, either by the same process of deconstruction and reconstruction or, moving beyond the boundaries of the purpose of the object, by some other means. At an affective level, both Rob and Anna are enjoying her achievement in completing the tower. In this spirit she decides to reuse another familiar resource, that of blowing the tower down. Leaning on the table and putting her mouth close to the tower, she blows it slightly, but then gently pushes it with her mouth, sending the cups scattering on the floor and table. The physical effort of knocking it down simply by blowing would have involved her looking at the tower at the same time; in this way she is able to keep her gaze continuously directed at Rob throughout, retaining his attention while she knocks the tower over. The physical transformation is mediated by the action of her mouth, but the purpose of the activity is interpersonal with Anna involving Rob in what is going on through the mediation of her gaze. Unlike the previous activity with this game, Anna is now operating outside the boundaries of its established purpose, although still engaging in a routine which has been developed during play with different members of her family. However, the very familiarity of the routine and the physical predictability of the object means that this is again a reuse of a familiar resource rather than an original interpretation, or a new transformation.

TABLE 5.1

'Poorly Legs'

experience into text ⇒

⇐ text into experience

Social Experience

Interpretative Arena

Text

actor - child / children

action - fallen / hurt

object

critical constituents

knee - surround space: skin - light
- line: scab/plaster - dark - horizontal

role - marked
hurt / cut

material activity ⇒

← introspection

gaze →

-----gesture-----→
-----language-----→

actor - cartoon
- childlike
- acrobat

action - (hurt)

object

critical constituents

leg
(knee) - surround space: pink - light
- line: (cut) - black - horizontal

role - marked
(poorly)

⇐ symbolic activity

Discussion of Table 5.1

Table 5.1 above, is derived from the activity which took place in Episode 3 of Scene 4 and makes a start at describing the way in which Anna draws constituents derived from social dispositions into her textual activity.

In this episode, Anna seeks to derive an interpretation of an iconic constituent of the text from her social experience. In order to do this she needs to find elements of her personal experience which match, in the sense of having a material connection to, elements of the iconic constituent at which she is looking. The criterial symbolic constituent in the text (the black line marking the knee) is represented visually, two dimensionally on the page. The connecting experience, it has been surmised, is Anna's own experience of cut knees. Whilst the obvious connection appears to be a visual one, the constituents of this experience will also have been derived from a number of other modes: plastic and organic in the sense that the knee is part of a three dimensional living body; and affective in the sense that a cut might result in pain but then also in comfort and nurturing. It is these latter processes which are reflected in Anna's use of the word 'poorly', a term which is sometimes associated with an adult commiserating with a child. The childlike representation of the acrobat (consistent with the intended audience for the book) is likely to be connected by Anna with affective constituents associated with her personal understanding of the state of being a child; in other words the acrobat is also subject to the conditions of a childhood state.

These connections do not, however, exist willy-nilly. The particular social practices which Anna has observed around conditions of hurt and comfort give rise to a disposition to see particular routines of behaviour and treatment around these conditions as being customary; this leads to the foregrounding of constituents within the text which relate to this disposition. Certain elements of semiotic matter in the text are thereby transformed into semiotic resources through these material connections, becoming available for use during the course of symbolic interpretative activity. As the direction of the arrows on Table 1 indicate, however, this is a two way, not a one way process. It is from Anna's introspective interrogation of the symbolic, textual constituents that certain material social experiences are derived and drawn into the

interpretative arena; both textual and experiential modes are transformed through this process, with the experiential resources leading to an interpretation of the textual, and the textual activity leading to a rematerialisation and reconfiguration of the experience. In the case of this episode, the focus of interpretative activity is on the text, but this balance is variable; in the case of CB Scene 8, for example, the interpretative focus is on Anna's reflection on her visit to the butterfly house, derived from the representation of the butterflies on the page.

This movement between the material world and the symbolic world is regulated by Anna through her use of mediational resources, operating both discretely and in combination in the interpretative arena. As has been described above, her gaze maintains an analytic role throughout this scene, concentrating on the visual constituents on the page, linking the symbolic signifier which she is looking at, to the material signified which is generated by her process of introspection. Her gesture and language enable her to communicate this process interpersonally, with her gesture identifying the locus of the visual signifier, and her language articulating the resulting connections made between real and represented marks. It is this mediational activity which acts as conductor between the social and textual; drawing in this case, constituents of Anna's disposition to 'poorly' things into her interpretation of the text. Anna's motivation in making connections between represented and real would appear to be an interpretative one; an interest in making sense of a puzzling mark by using and combining resources in ways which will achieve a satisfactory solution to the puzzle. In this respect the interpretative arena is one in which epistemological questions are raised and worked on by Anna, with the continuous encouragement she receives from Rob in this venture contributing to her development of another, an epistemological disposition.

This distinction between experience into text and text into experience as a type of interpretative activity is reminiscent of the distinction made by Cochran-Smith (1984) between text to life and life to text during interaction in shared reading between adults and children. The analysis presented here extends Cochran-Smith's work by treating the interpretative activity multimodally.

Chapter 6

Introduction

This chapter continues to focus on how Anna selects and combines resources in order to achieve communicative effectiveness, concentrating on her activity around the making of the mothers' day card in MD Scenes 2, 3, 5, and 7. At the end of the analysis of these scenes, the question of the relationship between the resources used by Anna and dispositions derived from her social environment will be discussed in relation to a diagrammatic representation of Scene 5, Episode 4, using the system of description that was used in the previous chapter in the discussion of Episode 3, Scene 4.

TABLE - MD Scene 2

Local Setting

Anna is seated at the table with the card in front of her and a felt tip in one hand. She has just completed her representation of a cat. Rob is looking at it with a felt tip to the ready in his right hand.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|------------------------------------|---------------------------|--|---|--|-----------------|
| EPISODE 1 [10 secs] | | | | | |
| Rob that's a ca't | | | Anna looks at Rob | | |
| Anna yea | | | looks at mark | | |
| Rob oh | | | Anna looks at Rob | | |
| Rob oh you going to draw a cat now | | | gaze moves to the top of Rob's felt tip | | |
| | [ə ə high pitch] 0.5 secs | | | Anna reaches across page to lightly take hold of the end of Rob's felt tip and guides it so it is poised over the centre of the page | |
| Anna do drawing there | | points to top centre of page then rubs finger back and forth on page | gaze on top centre of page | | |
| Rob do drawing of what a cat | | | | | |
| Anna yes | | | gaze moves to bottom left of page | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|----------------------------------|---|---|--|--|
| EPISODE 2 [18 secs] | | | | | |
| Anna I drawing | | | eyes on Rob's pen | Rob starts to draw head | blue outline of cat's head in centre top of page |
| | | | eyes on own drawing | Anna starts drawing in bottom left with up and down stroke | small, discrete red vertical zigzag three quarters way down page on left |
| | | | eye movement up the page to look at Rob's drawing | Rob draws body and tail with quick strokes | outline body of cat extending half way down page with tail to the right |
| Anna a' ts tat | | points to own picture, holds finger on page | looks at Rob | Anna's up and down stroke becomes more vigorous | zigzag shape extended vertically and out to the right of the page |
| Rob yes there's Anna's cat and there's daddy's cat. | | Rob points to his cat with felt tip | Anna looks at his cat | | |
| oh / forgotten the whiskers | [əu] 0.5 secs | | looks at Rob drawing whiskers | Rob draws cat's whiskers | three blue whiskers added to either side of cat's face |
| Rob I've forgotten the whiskers. | [u: ^h Λ+ smile] 1 sec | | | | |
| Rob Daddy's whiskers | | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|--------------|------------------------------|------------------------------|---|--|
| EPISODE 3 [20 secs] | | | | | cat has one red zigzag eye |
| Anna eyes I doing eyes | | | gaze on cat's face | | |
| Rob you're doing the eyes right | | | Rob's gaze on Anna's marking | makes small zigzag on top right of Rob's cat's face Rob moves forwards | |
| Anna ats eyes | | points at mark on cat's face | looks at Rob | | |
| Rob that's his face, yes, you doing the eyes | | | gaze on cat's face | Anna makes zigzag on other side of face parallel to first | two adjacent red zigzags across top of cat's face |
| Anna there's eyes | | points at cat's face | looks at Rob | | |
| Rob red eyes | | | gaze on cat's face | hands on either side of face and elbows on table | |
| Anna mouf | [m] 3 secs | | | | |
| Rob do his mouth | | | | makes small zigzag in between eyes | continuous horizontal red zigzag on cat's face |
| Anna that's mouf | | points to mouth | looks at Rob | | |
| Rob there's his mouth | | | looks at mouth | | |
| Anna yea | | | | removes finger from page | |
| Rob yes | | | | | |
| Anna an nose | | | looks at Rob | | |
| Rob and his nose | | | | | |
| Anna yes | | | looks at face | | |
| Anna thas nose | | | looks at Rob | | |
| Rob there's his nose | | Anna points to nose | Rob's gaze on cat | makes quick zigzag above eyes | small red zigzag above but touching continuous one |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|----------------------|--------------|---------|---|---|-----------------|
| EPISODE 4 [7.5 secs] | | | | | |
| Anna | lets finish | | Anna looks at Rob's cat and then down the page to her cat, across to the red zigzag on her right in the bottom centre, then to the left away from the page to the blue pen top lying on the table on the left of the page | Anna picks up the pen top starts to put top back on pen continues pushing pen into top completes putting pen back in top | |
| | finish. | | gaze on pen and top | | |
| Rob | you finished | | | | |
| Anna | yes | | | | |

Discussion of MD Scene 2

At the beginning of Scene 2, Rob and Anna are still seated at the table with the paper in front of them and the felt tips to hand. During Episode 4 in the previous scene, Anna had specified which area of the page was to be used by Rob for representing 'a cat' and which was to be used for representing 'drawing'; by the end of this scene, she had made a mark on the bottom of the 'cat' side of the page to which she then ascribed the identity 'cat'. Rob however, has still not drawn the picture which Anna has been asking him to draw.

At the opening of Episode 1, Rob follows Anna's ascribing statement, 'that's tat', with an echoing verbal statement which is also interrogative in tone, rising on the last syllable 'that's a ca't'; a pattern also noted in CB Scenes 4 and 8. This provides an affective, interpersonal affirmation, commending what she has done, but also acting as a check on the identity of the mark. This is likely to be a continuation of his interest in the state of Anna's knowledge of graphic resources which was identified in the previous scene; a desire to find out whether she will specify her material mark designated 'cat', to be writing or drawing. Anna makes an affirmative response, maintaining the status of the mark as a material, but unspecified symbolic representation of 'cat'. Rob then attempts to frame the Episode by inquiring whether drawing might be her next activity: 'you going to draw a cat now?'. At this point, by default as it were, Rob assigns the previous mark to the category 'writing'; his interest here, it would seem, is in whether, if he specifies the mode 'drawing' this time, Anna will produce a representation which is differentiated in form from the other marks. The question is again rhetorical, designed to encourage her to draw the cat, to act rather than to respond linguistically.

As Rob asks the question Anna's gaze moves to the felt tip which he has in his hand and remains there for a few seconds; Rob's hand is still; the pen in the still hand signifies preparedness but no action. To the onlooker, Anna's fixed gaze on the immobile pen suggests a reference back to Episodes 2 and 3 in the previous scene where she had asked him to represent a cat for her; the cat however, remains undrawn. The continued inactivity of Rob's hand means that Anna now needs to repeat her request for the drawing, but more emphatically this time. There now follows a sequence of activity in

which Anna links and combines resources around the central semiotic event of ensuring that Rob draws the picture for her; this can be seen as a command, the import of which is: 'I now want you, Rob, to draw a cat with that felt tip pen in this area of space on this sheet of paper *now*'. The sequence starts with Anna's vocalisation, a high pitched [ə ə] which signifies both a protest against Rob's inactivity and a response to his rhetorical question in which she resists his suggestion that she does some drawing. The protest through the vocalisation introduces a negative response to the lack of action; but her following choice of resource restores an equilibrium by balancing this against a positive response to the intention of carrying out the action; from Anna's standpoint: on the one hand, I don't want this state of affairs, but on the other, I do want this. Anna first shifts her gaze to the pen in Rob's hand, identifying it as the focus of activity. She now moves to the mode of action, using it to command Rob to do the drawing. Using the pen in Rob's hand to signify the action she wants him to take, she reaches across the table, and gently but firmly taking hold of the end of the pen, guides it so that it is poised over the centre of the page which at this point is an unmarked section of paper. While this process is taking place, her gaze moves from the mediator of the activity, the pen, to its goal, an unmarked space on the page. Her use of physical action as a resource, moving Rob's hand over the page, foregrounds the temporal nature of the process, the need for immediacy. Her shift of gaze now moves the signifying focus from the temporal, the physical movement of drawing with the pen, to the spatial, the material space on which the drawing is to be placed.

The pen remains in position; the 'given' derived from the first part of the sign making process. In this second stage, the focus is on the spatial element. Her gaze remains trained on the chosen spot on the page, retaining it as the position for Rob's drawing. She then brings in a gesture, rubbing her finger backwards and forwards on the space, identifying it as the material locus for the activity; physically demonstrating the nature of the action she wants Rob to engage in. The linguistic instruction, 'do drawing there' informs him of what she wants him to do. By combining resources from three different modes she is able to tell him where, how and what she wants him to represent. There is no redundancy here; each resource signifies a different element of the instruction. The conduct of the modes of gaze, language and gesture are co-ordinated in such a way that

they operate both specifically and interactively. The subject of the drawing which Rob is required to do remains the 'cat'; the underlying signified retained from Episode 4 of the previous scene and presupposed throughout as its intended object.

The cat is finally drawn in Episode 2. The central semiotic event in this episode is the representation of the cat, which is carried out simultaneously by Rob and Anna, resulting in two cat representations. Anna has already moved her gaze to the bottom left of the page in preparation for this. She responds to Rob's suggestion by describing the nature of her representational activity as, 'I drawing'; before starting however, she slides her gaze up the page, without moving her head significantly, to check what Rob is doing. Once he has started his drawing, she moves her gaze back to the bottom left of the page and embarks on her own drawing. Anna continues to use two textual resources in order to represent her cat, the space on the page and a range of zigzag marks made by a red felt tip pen. In Episode 4 of Scene 1, she had organised the space on the page by designating the left hand side of the page as the section on which 'cat' was to be represented and had placed her first 'cat' on the bottom of this part of the page; she places the second 'cat' mark near the first, filling up the space on that section of the page. Her marking of the second zigzag starts with a bigger up-and-down action than for the first cat, but the length of each stroke is still fairly consistent in size. However after five or six strokes, Anna's eyes slide up the page again to observe Rob drawing his cat's body and tail with a quick, flowing action, extending the body and tail of the cat down and across the page; her pen strokes now become more extended and vigorous, in parallel with Rob's drawing action, and her gaze appears to move back from the page, as if to watch her own process of representation more objectively. The alteration in her physical action produces a different type of mark: longer, with less of a zigzag, and bolder as a result of the greater pressure on the pen. Her comment at this point, 'áts cat', in conjunction with a finger gesture on the mark and her gaze turned to Rob, combine to stress her almost surprised satisfaction with the quality of her sign. Its criterial cat-like quality would seem to derive from the action of representation as much as from the final nature of the mark. By watching Rob's marking action while she is in the process of representing her cat, Anna is provided with a resource in which graphic and actional constituents are linked in such a way that the action itself has

representational significance; in other words, drawing in a cat-like way is another means of representing a cat. In this sense the cat sign is a complex of resources incorporative of the graphic mark in the 'cat' space of the page and her own physical action in making it; but it is also incorporative of the quality of Rob's drawing action from which Anna has derived the transformation of her own manner of marking. There is an echo here of the sign generated in CB Scene 14, where she signifies the physical movement of writing by the action of her hands. Anna's drawing action can be seen as a pivotal resource here: on the one hand generating a textual mark and transforming the spatial relations of the semiotic object, the piece of cartridge paper; on the other temporally and physically mediating her own representational intentions. However, there is no evidence that Anna sees the necessity of producing a 'drawing' whose purpose is to represent the cat by generating a resemblance between an actual cat and the mark representing it. In this case, it is at the level of the *process* of representation where Anna looks for the means to ascribe a representational character to her mark. She does not identify her graphic forms by ascribing a relationship of resemblance between the nature of the form and the object which it is intended to represent.

The page now has three visually distinct graphic representations of 'cat'. Rob adds a further distinction according to which of them had originated the different marks, 'there's Anna's cat and there's Daddy's cat'. He then twice draws attention to the fact that he has omitted the whiskers; Anna watches, responding only with supportive vocalisations, while Rob transforms the cat's face by adding the missing whiskers in the form of three lines sticking out horizontally from either side of the outline shape of the face; he then lays claim to the whiskers as a part of his cat representation, 'Daddy's whiskers'. Her gaze continues to be held on the representation of the face throughout this process, except for a brief lift of her head as she makes the vocalisations. The cat's face, which Anna has continued to study, is currently a blank space contained within the single blue felt tip outline representing a cat's head. Rob's stress on a 'forgotten' constituent has the effect of foregrounding omission: the area within the head outline now signifies a space which needs filling. At the start of Episode 3 it is clear that the distinction between Rob's cat and Anna's cat which Rob posited in the previous episode is not a boundary which she acknowledges. She now picks up the business of

‘completing’ the representation of the cat’s face and continuing the transformation which Rob started.

Anna’s visual interrogation of the face, which has continued throughout the process of adding the whiskers, has the effect of leading her to a decision about what is missing. Where Rob foregrounded the act of omission, ‘forgotten the whiskers’, Anna foregrounds the object which she considers needs to be added, by both fronting and repeating it, ‘eyes, I’m doing eyes’. The fronted object is the verbal answer to a question asked through the visual mode. In this episode, the central semiotic event is Anna’s addition of the ‘missing’ features to the cat’s face. Anna’s gaze has a pivotal role throughout this event in linking the interpersonal and textual modes. The function of her gaze differs between the modes however: in the case of the former, it is used to engage or hold Rob’s attention, while in the case of the latter, it has an analytic purpose. The space on the page is now bounded by the cat outline of the cat’s body and, of particular concern to Anna, the outline of the head. Anna draws on both her personal and textual experience to make a visual analysis of how the space might be filled. Her selection of ‘features’ as a significant missing element is consistent with common practice in visual representation in children’s books and comics (the counting book which is discussed in this and the previous chapter, for example), where facial features are invariably represented by a mark of some kind. The space now signifies ‘a face that is missing eyes’. Anna mediates the outcome of this textual analysis through the linguistic mode, ‘eyes, I doing eyes’; this both starts the process of materialising the outcome at a textual level and informs Rob of her intention at an interpersonal level.

Anna now leans forward over the page in preparation for action, and Rob also moves himself further up to the table and leans over the page to watch closely what Anna does, at the same time encouraging her through an affirmative comment, ‘you’re doing the eyes, right’. This is the first time that Anna has stated what she intends to represent prior to making the mark; the more intense involvement on Rob’s part is therefore likely to reflect his continuing professional interest in the form of these marks and the extent to which they reflect a level of physical resemblance to the object represented. Anna’s gaze remains intently on the cat’s face as she makes a small, discrete zigzag on the top

right hand side of the cat's face, carefully placing it within the bounding framework created by the outline; her gaze retains its textual focus, but this time monitoring the placing and progress of her action. She has now mediated 'the need to add eyes' through the action of transforming the space by adding a mark to represent 'eyes'. She now moves from the textual back to the interactive mode, shifting her gaze from the mark she has just made to Rob's face and once again drawing him into her textual activity. She then draws on linguistic resources to tell him what she has represented, and on gestural resources, a deictic, pointing gesture made with her forefinger, to show him where the 'eyes' mark is placed in the space. For Anna, there is still no necessary link between her stated intention at the start of the episode and the mark she has made; it is the physical process of making and placing the mark that realises the representation of the eyes. Even though she states that she is going to put in the eyes and is focusing her attention on the space bounded by the outline of the face, the action of representing the eyes symbolically does not include an intention that the mark needs to resemble them; the connection between the signified object and the signifying mark is made by ascribing it a name and a position on the page, through the respective modes of language and gesture.

Although Anna has made a mark representing 'eyes' Rob repeats his affirmative comment, but in the repetition suggests that the process of 'doing the eyes' is continuing; Anna has made only one mark, apparently representing only one of the two eyes. He also introduces a distinction between face and eyes perhaps to encourage her to discriminate between face and features. Rob's professional interest in the degree to which she can achieve a level of resemblance to the intended object of her marks is still dominant at this point. Anna's gaze now moves from Rob to the cat's face, taking her back to the textual mode, and she quickly adds a second, small red zigzag on the other side of the face, parallel with the first. She again uses the same combination of resources in the same sequence that she used after marking the first eye, mediating her textual activity through gaze, language, and gesture, and ascribing the identity 'eyes' to the second mark as well. It is likely that this second mark is another representation of 'eyes' rather than a second eye, in much the same way that she made two distinct marks to represent 'cat' in the previous episode. Once again she moves her gaze from Rob's

face back to the page and to the textual mode, but this time also putting her elbows on the table and her hands on either side of her face to enable her to look at the cat's face more intently. Her visual interrogation of the text is still informed by the outcomes of her interaction with Rob as well as the arrangement of marks on space; gaze, in other words, here mediates both temporal and spatial information. What Anna now sees is the cat's face with two red marks in the position where eyes would usually be placed. The face now displays two systems of marking: one which Anna has been using up to this point where each distinct mark is a symbolic representation of either an action or an object, where the mark does not need to portray a visual resemblance to it; the other is the system in which the marks bear a physical likeness to the represented action or object. It could also be argued that in the course of deciding to represent 'eyes' a second time, Anna becomes aware, visually at least, of the effect of placing it adjacent to the first mark rather than anywhere else within the boundary of the face outline; in other words it now resembles a face with two eyes. There is also another level at which this signifying process operates. Anna mediates her intention to 'do eyes' through the physical action of moving the pen up and down in order to produce a particular mark with particular visual constituents which for her represents 'eyes'. Having made the mark, its physical realisation on the page now becomes part of the semiotic object, which is then subject to further interpretative activity on her or on Rob's part. In other words, Anna's action in making the mark has the double function of both representing the cat's eyes in a fixed, material sense, and mediating her intention to signify eyes.

Anna still needs to accommodate the transformation of the space (which now signifies 'a face that has eyes' and indeed in one sense also resembles a face with eyes) to her original purpose of deciding whether there is anything missing from it; the question remains whether there is still space where there ought to be marks. Rob responds affirmatively to her second 'eyes', even adding information about their colour by which he links the mark she has made to the physical tool which she has used. Anna, however is fully engaged in the textual mode at this point, and chooses to acknowledge what Rob says only with a vocalisation; the use of this resource does not distract her from what she is doing, but nevertheless still keeps the interactive channel open. Anna's gaze is extended and concentrated and it is broken sharply by her declaring 'mouf', in

response to the question which has informed her visual interrogation of the face. Her use of language at this point is predominantly textual even though it does incidentally inform Rob of what she has decided; her decision to verbalise allows her to signify the element of the semiotic object which she has identified as missing; to once again give a verbal answer to a visual question. In doing this she materialises the outcome of her analysis of the cat's face and also realises the identity of the mark to herself through stating it linguistically. She now makes another small zigzag in between the two eyes to represent the missing mouth, and in effect joining them together. This mark also belongs to the set of missing features which Anna has been adding to the face. The semantic connection is maintained by the placing of this mark in a position adjacent to the 'eyes'. Anna had previously been using the visual constituents of space and mark principally in relation to each other; apportioning the space on the page to accommodate separate representations. In this case, she makes the semantic connection between the marks by placing them in close proximity to each other; in other words, as well as using the relationship of marks to space as a resource, she is also using the relationship of marks to each other.

Having drawn the mouth, she once again moves her gaze from the mark on the page to Rob's face, returning to the interpersonal mode. She informs him verbally of what she has represented, 'that's mouf' and then uses a gesture, pointing with her forefinger, to show him its exact position on the page. Rob's linguistic responses are affirmative, echoing the language which Anna has used. A break in the pattern of this interaction occurs after this however, with Anna's question, 'an nose?' This break follows directly on from the interpersonal sequence involving 'mouth', without Anna turning her gaze back to look again at the cat's face. This suggests that in her previous extended interrogation of the page, she had completed the business of her visual identification of the missing elements of the face, so that its full signification is, 'a face with eyes, missing a mouth and nose'. This means that in the sequence in which she says 'mouf', the reference is to it being one of two elements which are needed to complete the face. The nose is marked using the same zigzag action and also placed adjacent to the other feature marks, but immediately above the eyes. Here again Anna links spatial and marking resources, choosing the placement according to the criterion of placing

elements which represent features close together on the page. Although they are not placed according to the conventional organisation of features on a face, nevertheless there is a sense in which Anna's criterion for arranging her symbolic representations involves both semantic and material elements: not only does she understand features as being part of the same semantic field, she also experiences them as sharing the same visual and physical space. After completing the nose, Anna returns to the interpersonal mode; she materialises and indicates to Rob the identity of the object by use of language, and the place of the object in relation to the other visual constituents on the page by means of gesture.

Following the completion of the cat's features, Episode 4 starts with Anna looking intently at the page. Here again her gaze mediates her analysis. She scans the cat's face first and then moves her gaze carefully down its body and down the page to her first 'cat' mark at the bottom left of the page. Her eyes then move across the page to the right, to the second of her cat marks, particularly to the more vigorous section on the right hand side. At this point however, her gaze turns sharply to the left, away from the page and towards the pen top lying on the table beside the page. In moving her gaze away from the page, she is also moving the focus of her interest away from the textual activity in which she has been engaging. The pen top signifies completion of an activity; putting the top back on the pen and putting it away. This is reminiscent of the events in Episode 2 of Scene 1, with Anna sorting out the pens in the pot in interested anticipation of their use, but in this scene, she is anticipating completion of the activity. Here Anna is drawing on her previous textual experiences, in which interpretative activity includes a process of framing and temporal organisation; or put another way, recognising when to move on to the next stage of the activity and deciding when something is complete. Her skill in framing for example, is demonstrated in Scene 1, in her ability to take control of events and move them on from episode to episode. Here though, Anna's turning away from the page is derived from her critical reflection on the text of which she herself is an author. In other words, for Anna the creation of a text also involves an interpretative judgement about its sufficiency, in this case its sufficiency to be considered finished or unfinished. The text which Anna has been involved in creating signifies 'cats' in various ways and has to fulfil her criteria of representing cats

sufficiently if it is to be judged finished. This judgement is an introspective one which involves Anna relating the visual constituents materially present on the page to her recent textual experiences from which they were derived, and her wider experience of what constitutes completeness. The question of completeness or lack of completeness was introduced by Rob in Episode 2 with his forgotten whiskers. However in this episode, control over finishing the activity is fully taken over by Anna; completion is a semiotic event in its own right.

A development of the description above makes it possible to identify the completeness criteria Anna deploys at different stages. Using her gaze as an analytic tool to mediate her interpretation of the semiotic object, and operating at a textual level, Anna first studies the cat which Rob drew and whose face she worked on afterwards. The face now signifies a face complete with eyes, mouth and nose in the manner of other pictures of faces in other texts in her experience, though with the features represented according to Anna's own system of representation. The cat's body and tail, which Anna reviews next, signifies completion on an affective level in the sense that it represents the rest of the cat which Anna had been trying to encourage Rob to draw for her in both Scenes 1 and 2. She then moves her gaze down to the cat which she drew in Scene 1 and then across to the cat drawn in Episode 2 of this Scene. At the time of making these marks, in both cases, Anna had signalled completeness by her statement, after drawing each cat, of what they represented, 'at's tat'; she still retains her feeling, at both a textual and affective level, of being satisfied with the way these cats have been represented. Both these marks now signify completed cats. These three acts of visual interpretation in which Anna links the visual and spatial resources on the page to a reflection on the social and temporal experiences which generated them, lead Anna to the conclusion that the activity, as far as it goes, is complete. This completion of activity at a textual level is now signified by the move of her gaze to the pen top, and the physical action of putting it back on the pen. Gaze once again pivots between textual and interpersonal modes and analytic and communicative functions. Moving now into the interpersonal mode she suggests to Rob verbally that the activity is complete by her use of the imperative, 'let's finish'; her use of the linguistic resource here has a performative sense to it, using it to close down the activity in the interpersonal mode. She repeats the word 'finish' and Rob

responds, less to her verbal resource, than to her actions with the pen, this time asking her if she has finished. In parallel to this dialogue, she starts the process of pushing the pen top back onto the pen, lifting them up from the table and moving her gaze from the table to the business with pen and top. This material process has now become an absorbing activity in its own right for Anna, distinct from its role in signifying the completion of the drawing. Having closed down the previous activity at both textual and interpersonal levels, she is free to move onto something new.

In this episode, the activity of combining different resources incorporates the inclusion of resources which are themselves derived from a process of combination. The manner in which Anna finishes the activity demonstrates the way in which her sense of completeness derives from her experience of a sequence of temporal acts closed down by various material routines, such as putting a pen top back on and putting things away, or stating that the activity is complete; in other words, restoring certain aspects of the environment to the same state they were in before the activity started. Her reflection on the state of completeness of the different cats also suggests that as far as generating a text goes, finishing involves developing and applying criteria, or applying already developed criteria for establishing whether the representation is sufficient; these might include criteria which are numerical (an accepted number of features on a face, for example), ontological (the cats are cats because I have said they are cats), or affective (the promise of drawing a cat on this space has been fulfilled); the principle, once established, can be applied in different situations and circumstances. An understanding of completeness then, is something which can operate as an already combined resource, available to be drawn on when wanted without necessarily needing reconstruction.

In the process of transforming the text, Anna is engaged in the generation of resources which can then be developed independently at a textual level. The idea of 'cat' has evolved through Scenes 1 and 2 and is now a significant, 'previously combined' feature of the text; a compound resource which incorporates the all the previous semiotic activity from which it was derived. Anna has concentrated on its visual representation; on how visual and spatial constituents can be used and juxtaposed in order to represent 'cat'. However, the process of the strategic linking of resources has derived a flexible

subject which is not only materially and spatially represented on the page in a variety of ways, but also has the potential to be used temporally; to be featured as a character in any narrative which Anna and Rob might choose to develop. For Anna, a cat in this sense is likely to have been derived from her experience of stories in which cats feature as characters; but also from her day to day experiences of cats as pets, as significant members of people's households about which anecdotes and stories are told.

TABLE - MD Scene 3

Local Setting

Anna is seated at the table with the card in front of her still. She has finished drawing the cat's face and has just put the lid back on the green felt tip pen and is still holding it. over the page.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|---------------------------|-------------------------------------|----------------------------------|---|-----------------|
| EPISODE 1 [15 secs] | | | | | |
| Rob you want to do anything else on it in another colour, how about a green one. | | | gaze on pen tub | moves arm to put pen down on left of page moves arm across towards Rob to give him red pen and take green felt tip | |
| Anna yes | | | | | |
| Rob what can you do with a green one | | | | | |
| Anna daddy | [ə] .25 secs | | | Anna starts to stand up and leans towards pot | |
| daddy | [ə] .25 secs | | | | |
| Rob and I'll have one as well, I'll have a / I'll have a yellow one | | | | continues to stand puts hand on table and straightens up | |
| Anna yes a yeyo one | | | looks at her felt tip | Anna sits down removes lid from pen and places on table on left | |
| yeyo one | [ə ə ə high pitch] 2 secs | rubs finger on bottom right of page | looks at pen tip looks at Rob | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|-------------------------------------|---------------|---------|--|--|--|
| EPISODE 2 [7.5 secs] | | | | | |
| Rob what do you want me to do | [əʊ] 0.5 secs | | gaze on page | Anna starts to make a mark with pen pen falls over on page picks up pen places pen tip on page | small green mark on bottom left where pen was placed |
| Anna mine pen fallen over | | | looks at Rob looks at pen looks at Rob gaze on page | | |
| Rob your pen fell over | Rob laughs | | | pen trails to left | short thin green line across bottom right hand of page |
| Anna yes | | | | pen trails down page | line continues vertically down page |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--|--------------|---------|---|--|--|
| EPISODE 3 [14.5 secs] | | | | | |
| Rob that's nice | Rob [əʊ] | | gaze follows movement of pen tip as it marks up and down the page | Anna leans back and then forward to make a long vertical line up the page, back down parallel but to the right of the first line, up the page in between the lines and further up the page, down the lines again | |
| that's nice | Rob [əʊ] | | | holds pen on page at bottom of vertical lines | an extended green zigzag with four verticals, close together and extending up about two thirds of the page |
| Anna that tats / ts / tee | | | looks at Rob | | |
| Rob that's a /) | | | | | |
| Anna that tats) | | | looks at tree looks at Rob | | |
| Rob cats treeé | | | | | |
| Anna yes | | | gaze returns to vertical marks on page | | |
| Rob oh a tree for the cat to climb up | | | | | |
| Anna yes | | | | | |
| Rob that's a good idea | | | | | |

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|---|---------------|---------------------------------------|-------------------------------|---|--|
| EPISODE 4 [21.75] | | | | | |
| Rob and let's do some branches | [m] 0.25 secs | | Anna's gaze on Rob's pen | Rob draws wavy line across top of page from right to left | yellow wavy line across top third of the page |
| Rob are you going to do some branches up here | | | gaze moves down to own pen | Anna puts pen tip on page | |
| Anna yes | | | gaze to end of Rob's line | | |
| Rob for it to climb up | | | gaze back to own pen | | |
| Anna yes | | | gaze follows pen line | | |
| | | | | Anna makes a small line up the page, then down for a short stroke, then up and right round the top of the page in a curve from right to left, encircling Rob's branch | vertical green line with one zigzag going up the right side of the page and curving across the top and round to the left, crossing the yellow line in places |
| Rob that's a lovely branch. | Rob [u:] | | looks at mark made | | |
| Anna yes | | | gaze moves back up page | | |
| Rob oh yes | | | | slightly leans back from table | |
| do some more branches they're lovely | | | gaze on centre bottom | | |
| Anna mummy | | | gaze turned on Rob | | |
| branches mummy branches for mummy | | | | small zigzag mark on centre bottom of page | small green zigzag at centre bottom of page |
| Rob branches for mummy | | | | pen held still on page making slight movement | under the centre of the arch at the top of the page |
| Anna yes | | | gaze on centre bottom of page | | |
| Rob what are you doing there Anna? | | | | | |
| Anna that's branches | | points to zigzag with left forefinger | | | |
| | | holds finger on page | | zigzag continued | small green zigzag about a centimetre high and a centimetre and a half wide on centre bottom of page |

Discussion of MD Scene 3

In this scene, the focus will be on Episodes 3 and 4 during which Anna starts to develop a narrative within the text being generated. This involves the incorporation of compound resources, as discussed at the end of the analysis of the previous scene, into the process of linking and combining semiotic resources in the course of generating the text.

During Episodes 1 and 2, Rob and Anna engage in business around the pen. At one point Anna's pen falls over, causing a certain amount of humour and making a slight mark on the page as it falls and again as Anna picks it up. At the end of Episode 2, she is holding the pen purposefully, ready to start making the next mark. At the beginning of Episode 3, Anna's gaze is held on the tip of the felt tip as it is poised at the bottom of the page. She leans back a little way in order to focus more clearly on it and in order to allow herself more room for movement in the course of making new marks on the page. She moves the green pen to a point about two thirds of the way up the page, leaning forward as she pushes the pen along, following its progress with her gaze and leaving a long, green line in its wake; without pausing in her movement, she then brings the pen down the page, still following its movement with her gaze and makes an extended, confident movement, drawing another green line close and parallel to the first, but with a slight curve out to the right; the pen is then moved skillfully back up to the top, between the first two lines, but higher than the top point, and finally down again to the bottom of the page, retracing the path of the previous line. Rob watches this activity closely, twice making the same statement of evaluative opinion, 'oh, that's nice'. Rob's vocalisation [əʊ] coincides with Anna's hand and arm movement as she makes the up strokes; the open schwa has a long, high pitched, rising tone following the upward stroke of the pen, and the more rounded sound a short, low pitched, falling tone followed by the statement, which coincides with the end of Anna's upward stroke. The sound which Rob makes is not distinct from Anna's action, but rather is mimetic, following and interpreting the upward flow of the arm movement as it happens. Here, since the resources of vocalisation and language on the one hand, and action on the other are used by two different people, their relationship to each other is a mutually interpretative, interactive one rather than one where the resources are required to

function independently. The resources of vocalisation and language which Rob uses however, do have separate functions with the evaluative statement having the affective purpose of acknowledging and appreciating both the process and outcome of Anna's action.

Anna's pen marking action in this episode was not preceded by the extended analytic gaze which was a preliminary to her marking of the cat's features in the previous scene. In the episode under discussion, gaze and action operate in tandem, with her gaze acting as a perceptual guide for the physical action of the pen through the area of space on the page. Both gaze and action are here linked at a textual level, mediating Anna's representative intentions through her use of a physical tool, the felt tip pen. In this episode, Anna develops the representative range of the zigzag resource from a mark which is relatively small and which operates within defined boundaries (the 'cat' side of the page, or the cat's face) to one which extends up and down most of the length of the page. The more extended physical action enables Anna to explore another relationship between mark and space in addition to those which she has already used in generating graphic meanings; in this case a relationship between mark and the upper and lower material boundaries of the page. In addition to this, although Anna has not in this case stated what she is planning to draw as she did in the case of the eyes, the material form of the mark, which is derived from the physical action of its production with its long, upright strokes, has a resemblance to the material form of the 'tree' which she says she is representing. As in the case of the cat's eyes, Anna incorporates two systems of representation in her marking here, one which represents her meaning at a purely symbolic level and the other at a level of resemblance. However it is through the interpersonal mode, through her interaction with Rob that these meanings are mediated and fully realised.

As Anna completes the zigzag, on the final downward movement she moves to the linguistic mode, and starts to make a statement ascribing an identity to the mark just made, 'that's tat's / ' ; at this point she turns her gaze from the page back to Rob and completes the statement, but pausing slightly before the last word 'ts / tee'. Here again language is used as a pivotal resource, operating at a textual level to realise the

signification of the mark, and at an interpersonal level to inform Rob what the mark signifies and to involve him in this new textual development. The pause also has a pivotal role, foregrounding the importance of the next word which provides new information for Rob. The pause, and the 'ts' which precedes the word suggests that Anna is paying particular attention to the articulation of what she is saying. The same process is now repeated, with Anna moving her gaze back to the text and repeating the first part of the statement about the cat; she then moves her gaze back to look at Rob, and completes the statement by again adding 'tee'. This repetition of the whole interactive sequence acts as a third foregrounding strategy, with Anna seeming to require from Rob an affirmation of the semantic relationship between the lexical items and the visual signifier. In this sense, the means which Anna uses to communicate this to Rob, combine to act as interactive resources which can be deployed to support the development of her text using Rob as mediator. Rob's verbal repetition of 'cat's tree' materialises Anna's new textual item at an interactive level; in a similar way the mark which Anna makes with the green felt tip mediates and materialises 'the cat's tree' visually at a textual level; at both levels it now becomes a shared 'new' element between them.

At the end of Episode 3 in the previous scene, the element 'cat' had become a compound resource, visually represented by the different systems of marking which Rob and Anna used and incorporating semiotic activity from previous episodes. At the beginning of this episode, Anna's marking action develops a tall, thin representation next to the cat in the middle of the page. The cat mark at this point signifies not just a graphic and spatial representation of cat, but also narrative possibilities; likewise the vertical mark that Anna is making represents and resembles a tree. The marks are placed in close physical proximity and therefore have the potential of a semantic relationship, if applying a similar criterion as that used in the case of the cat's features. A symbiotic relationship is now established by Anna between the cat sign and the vertical signifier, such that the cat now takes on a temporal, narrative role, potentially requiring props not yet represented on the page; the vertical mark signifies a narrative relationship to the cat. A further stage in the linking process relates constituents of Anna's social and textual experience of cats, as incorporated in the compound cat

resource, to those constituents of the vertical mark which resemble or represent a narrative element pertaining to the cat. This latter mark now becomes a cat's tree with the semantic connection, made explicit by Rob, that cats like to climb trees. The narrative potential of the text is now further developed with the cat having the tree on which to act.

At the beginning of Episode 4, it is Rob who takes control. He has now shifted his concern with Anna's graphic knowledge to an interest in developing the narrative on the page through their drawing. This time he starts by suggesting that they draw some branches on the tree and immediately follows this by drawing a wavy line across the top of the page himself, leading from Anna's tree. Anna's vocalisation suggests agreement and her gaze follows Rob's pen while he draws his branch. As Rob asks her if she is going to do some branches, Anna moves her gaze to her own pen before answering in the affirmative. She then moves her gaze to the end of the line which Rob has just drawn. Rob continues to develop the narrative possibilities by suggesting that the branches are needed for the cat to climb up. Anna's gaze now shifts to her own pen and she again responds affirmatively to Rob's suggestion. Throughout this interaction, Anna's gaze remains in textual mode, first focusing on Rob drawing his branch, and then assessing her own task by looking from her drawing tool to the end of Rob's branch; in other words linking her own and her father's drawing action in her visual assessment of the demands of the task. Her vocalisation and her verbal agreements to Rob's suggestion maintain the interpersonal communication whilst this assessment is going on.

Placing her pen about half way up the right hand side of the page, Anna now draws a short line up the page quite slowly, but then moves the pen sharply downwards and then immediately up and round the page, crossing and encircling the line made by Rob and ending her circular line half way down the left hand side and round towards the centre of the page. Her gaze guides the direction of the line as it did when she drew the tree, but this time it also monitors its path in relation to the one drawn by Rob. Anna is still using a zigzag as her representational resource, but as with the tree, extends it across the space of the page; this line however has a new feature in being circular in shape,

with the second upwards line sweeping round the top of the page. Rob's vocalisation (ʊə) followed by an evaluative statement, follows a similar pattern to his sequence of response whilst observing Anna drawing the tree. Here it is the rounded 'ʊ' which has the long, high pitched rising tone following the sweep of Anna's hand arm movement as it reaches the apex of the circle, with the schwa and the statement following with the low pitched, falling tone. Again the sound is mimetic, following the shape of the circular movement Anna is making with hand and arm. Anna makes an affirmative verbal response, maintaining lines of communication through the interpersonal mode, but holding her gaze on the page and thereby retaining the focus on the textual mode. Rob now suggests to Anna that she could, 'do some more branches'; Anna makes no verbal response at this point. Instead, she moves her gaze from the end of her branch back to the tree on the right and then leans back slightly so as to gain a clearer view of the page, moving her gaze to the bottom of the page and then up again, following the tree to the point where the branches start. She then moves her gaze back down to the centre bottom of the page, completing her visual assessment of the most recent marks.

This section of the page also signifies the start of Rob and Anna's card making activity, since it was this bottom portion of this side of the page on which the process of transformation began. 'Beginning', like 'completeness', is also a compound temporal resource, incorporating criteria such as affect (the purpose of making this is to offer it to a loved person), material organisation (specific tools and artefacts are needed) and spatial organisation (parts of the room, and the tools and artefacts need to be organised in relation to one another in certain ways). Rob's suggestion that Anna does some more branches because 'they're lovely' has also shifted the reason for drawing them from a narrative to an affective purpose. Anna links the 'beginning' resource, the idea that the card is being made for her mother, to the suggestion posed by Rob that she draws some more 'lovely' branches. Anna's gaze remains on the bottom of the page, still in the textual mode, as she says 'mummy', articulating a reference back to the card's original purpose. She now starts to make a small zigzag mark in the centre bottom of the page, some distance from the 'tree'. Here she is not using the narrative resource, and without the semantic connection which this has been providing, the placing of any new branches on the page becomes a spatial issue once again. In contrast to the more extended

marks which cover the top two thirds of the page, the bottom section of the page signifies 'a space with small zigzag marks', making it an appropriate place for the the small mark representing branches which are unconnected to the cat and tree narrative. Anna now once again uses her gaze as a pivotal resource to link textual and interpersonal modes: looking at Rob, and continuing to hold the pen on the mark, she informs him that the mark represents not just branches but 'branches for Mummy', materialising this new connection through her statement. She then moves back to the textual mode and completes the zigzag. As she completes it, she places her finger on the page in a pointing gesture to indicate the position of the mark, looking at Rob to draw his attention to it. In reply to his query about what she is doing, she holds the position of her finger turning her gaze back to the page to confirm the position and identity of the mark, before looking at back at Rob and informing him, 'that's branches'.

TABLE - MD Scene 5

Local Setting

In the previous scene Anna has been representing written names. In the earlier episodes of this scene, they decide to return to drawing and in anticipation of this, return to organising who has which colour pen.

| Language | Vocalisation | Gesture | Gaze | Action | Semiotic Object |
|--------------------|--|---------|------------------------------|--|--|
| EPISODE 4 [9 secs] | | | Anna's gaze on page | Anna makes small zigzag mark with red felt tip | small red zigzag on bottom left of page in cat section |
| Anna | at's a house ats cat's house | | looks at Rob gaze on page | pen held on page | |
| Rob | oh yes that's a nice idea the cat's house. | | looks at Rob gaze on page | leans back from page | |
| Anna | yes | | | | |

TABLE - MD Scene 7

Local Setting

During the previous scene, Rob tries to encourage Anna to tell him what to write, but Anna persists in requiring him to draw a snake; Rob draws a snake and writes the word 'snake'. In Episode 1 of this scene, Anna selects a blue felt tip from the pot.

Language

Vocalisation

Gesture

Gaze

Action

Semiotic Object

EPISODE 2 [27.5]

| | | | | | | |
|------|--|-----|------|---|---|--|
| | | | | | small diagonal zigzag pen held on page | small blue diagonal zigzag to left of tree |
| Anna | ats treehouse, ats cat's treehouse. | | | gaze ahead gaze on page looks at Rob gaze on page looks at Rob | | |
| Rob | cat's treehouse | | | | | |
| Anna | yes | | | | | |
| | | Rob | [əʊ] | | | |
| | | | | gaze to left of page gaze to bottom left | raises left hand from bottom left of page to allow view | |
| Anna | that's daddy's treehouse. | | | gaze on pen gaze to mark on left of page gaze to felt tip in right hand gaze back to cat's treehouse gaze to felt tip looks at Rob gaze on felt tip looks at Rob | | previously undesignated mark adjacent to cat's house |
| Rob | oh thank you | | | | | |
| Anna | yes | | | | lifts left hand from page continues zigzag | blue zigzag extended on top right |
| Anna | i 'en a' en en in the 'ouse, | | | gaze on page | | |
| | | Rob | [m] | | | |
| Anna | a en in the 'ouse | | | looks at Rob | | |
| Rob | yes | | | | | |
| Anna | daddy / a en in the 'ouse | | | | | |
| Rob | daddy's in his house his tree house | | | gaze returns to page | | |
| Anna | Yes | | | | | |

MD Scene 5 and MD Scene 7

In this section, Episode 4 from MD Scene 5, and Episode 2 from Scene 7 will be discussed together, since they both extend the development of the 'cat' narrative which was introduced by Anna at the end of Scene 1 and developed in Scene 2.

In Episode 4 of Scene 5, having selected a red pen and removed the lid, Anna puts it on the page in position to start her next mark. The physical process of selection and organisation of a drawing tool is a constituent of the 'beginning' resource which is consistently deployed by Anna through the MD activity. The structuring of the sequence of the activity in which she is engaged was mediated in the previous episode by her gesture in holding the pen towards Rob and verbalising the colour of the one which she has chosen. It is evident from this pattern of instances that the material nature of the marking activity in which she is engaged mediates not just its spatial aspect, by making a visual mark on the page, but also its temporal aspect, by requiring tools which can be physically organised and reorganised in ways which structure the sequence of the activity.

Anna now returns her gaze to the page and the textual mode, focusing her attention on the bottom left, the section where she had made her cat marks in Scene 1. She makes a zigzag just above the earlier cat mark, returning to the small, discrete system of representation again. She retains the textual focus by holding her pen on the page while she turns her gaze on Rob, drawing him back into her textual activity. The mark, she informs him, represents 'a house'; returning her gaze quickly to the page, taking in the mark she has just made and the other marks in its environment, she adds the information that it is, 'the cat's house'. The last direct reference to the cat was in Scene 2, but Anna now reintroduces it; the cat at this stage signifies a textual element which can be represented in different ways, with or without a level of visual resemblance to the real thing; having a spatial or semantic relationship to other textual elements; or a relationship of possession, in which the connection between the possessor and possessed could encode the potential for further development of the relationship. At this stage Anna uses both spatial and temporal resources to develop a further sign. The physical proximity of the new mark to the previous cat mark enables her to make a

spatial connection between the two representations. She then chooses the resource of possession (as in the previous relationship between cat and tree) rather than that of semantic set (as in the case of the cat's features), or sameness (as in another cat). Choosing a connection of possession allows for narrative development on the same lines as 'cat's tree': the cat can 'have' other objects on which it can act. In this case Anna decides the cat is to have a house. At this stage in the development of the card, the cat is a narrative resource with a house to live in and a tree to climb and the potential for further developments in its textual world.

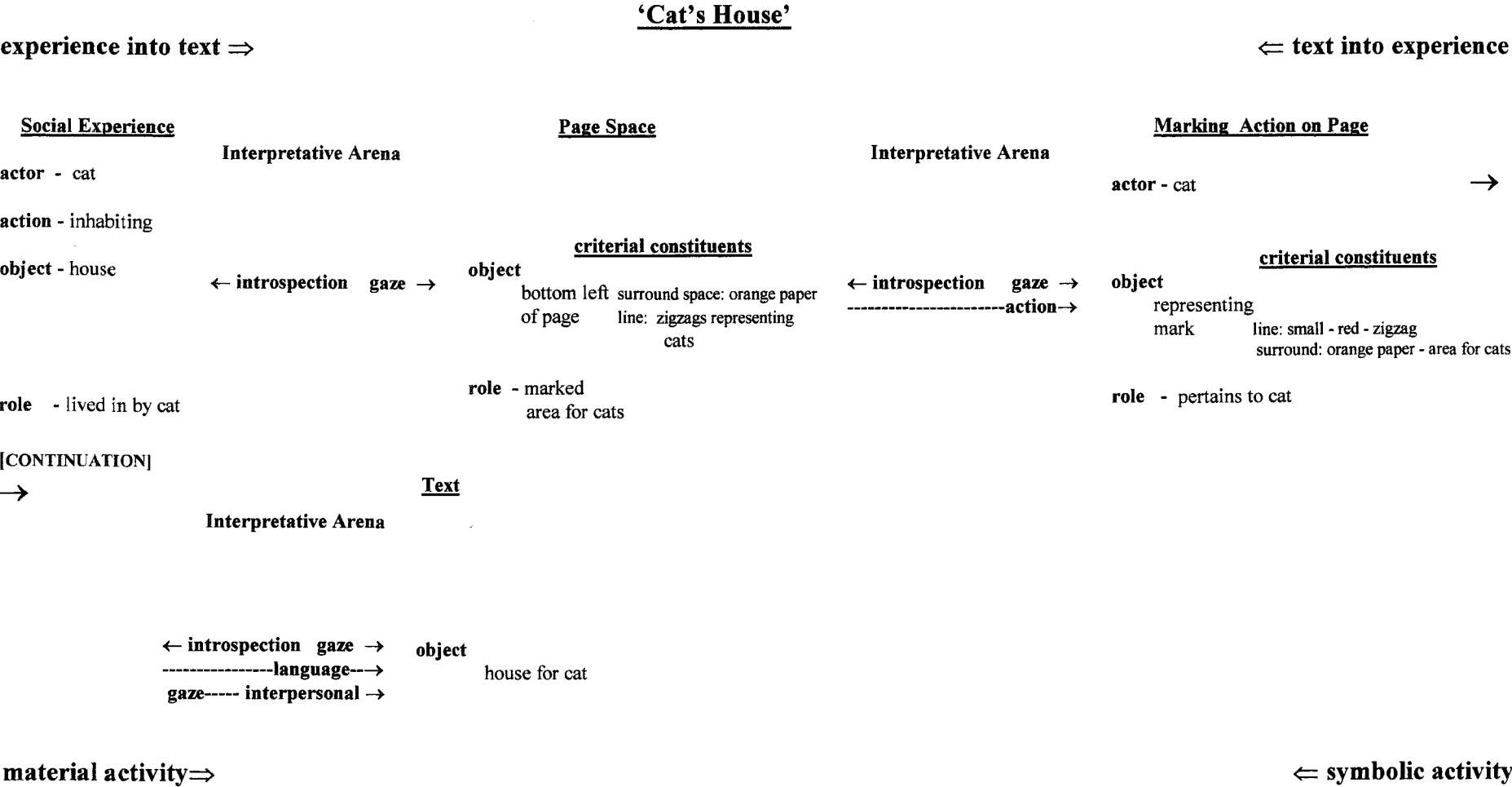
Scene 7, Episode 2 has a similar starting pattern with Anna first selecting a different felt tip from the pot, a blue one this time. She then makes a small zigzag, slightly on a diagonal to the right angle of the page, just on the left of the tree which she had drawn in Scene 3. She then lifts her gaze from the page, but instead of moving straight into the interpersonal mode by looking at Rob as has been her usual pattern, she first looks ahead, away from Rob and the page. In doing this she has moved out of both textual and interpersonal modes into a moment of reflection, an introspective mode which was also noted in CB Scene 8, where Anna and Rob remember their family visit to the butterfly house. Still looking ahead but then moving her gaze back to the page, she announces, 'ats treeshouse'. This verbalisation, accompanied by the movement of her gaze back to the page, suggests a reflection on the relationship between the mark she has just made and the adjacent tree. She incorporates a constituent of the narrative resource, 'house' into the new sign, but without moving her gaze back to check it visually; in this case she would appear to draw directly from her introspection. In doing this she also continues to use the pattern of the possessive relationship, 'tree's house', reflecting this and the spatial relationship in the grammatical construction she uses. She then returns to the interpersonal mode, turning to Rob and re-introducing the cat which already exists as a shared resource between them. Moving back to the text, she then compounds the resource further by adding another possessive relationship and deriving, 'cat's treehouse'. These resources do not however exist solely in a structural relationship to one another, but are also items which are part of Anna's own personal and social experience. In terms of the narrative potential, there is now a cat with a tree to climb up, a house to live in and a treehouse to play in.

Anna now moves her gaze on from acknowledging Rob's checking of this new development, back to the page, but away from the cat's treehouse and to the bottom left of the page where the cat's house is represented. Lifting her hand up from the page in an action which allows her to gain a full view of the bottom left hand section of it, she briefly moves her gaze back to the pen in her right hand, before returning it to the left of the page and using her left hand gesturally to indicate a previously undesigned mark near to the mark representing the cat's house. She designates this verbally as 'daddy's treehouse', but with her gaze on the mark indicating that she is still operating in the textual mode. Here Anna has developed a different compound resource, linking the recently combined 'treehouse' to another compound resource introduced by Rob in Scene 2. During Episode 2 of this Scene, Rob makes a link between textual and interpersonal modes when he describes one mark as 'Anna's cat' and another as 'daddy's cat'. Although he is referring to the marks made by each of them as part of the text, nevertheless the effect of the remark is to blur the boundaries between the personal and the textual. This is now used as a resource by Anna, drawing her personal relationship, through the mediation of gaze, gesture and language into the semiotic object which she is generating. It is linked into the structure of the text through the compounding process, such that 'daddy's treehouse' now becomes another part of the narrative resource. Rob responds affectively, saying 'thank you' and accepting his role as part of the text.

Anna now returns her attention to the other side of the page, moving her gaze first to the felt tip and then to the mark representing the cat's treehouse; the focus of her gaze mediates her intention to return to using the felt tip to further marking activity in the vicinity of the original mark. She moves her gaze back to the felt tip, now using it to direct the focus of her zigzag action to the cat's treehouse mark and extending it by means of adding another mark on the top right of the original. Returning to the interpersonal mode, she moves her gaze away from the pen and the page and looks at Rob, turning her head to the right to do so. She then repeats the pattern of ascribing an identity to her mark by verbalising it: on this occasion, she repeats 'a en' (a hen) twice, and then develops the description by ascribing not a relationship of possession to the

two elements, but one of position, 'a (h)en in the (h)ouse'. Here she has extended her spatial resources further by adding one mark to another to generate a compound which allows her to both visually represent the relationship of the hen in the house, to verbally describe it and to add it to her developing set of narrative resources. Rob's response to Anna's verbalisation is a vocalised [m], expressing acknowledgement, but a degree of uncertainty; this would seem to be one of the few occasions when he does not understand her meaning. Anna seems to understand this and turns her gaze back to the page, as if to monitor her own representation and then returns to the interpersonal mode through her gaze and through a carefully enunciated third repetition. Since Rob has generally been affirming her narrative development by echoing her words, Anna is not convinced by a simple 'yes' and repeats the phrase again, this time preceding the phrase by his title, 'daddy', in order to emphasise her meaning. Rob then repeats what he thinks she has said, but this time Anna accepts that he has not understood, and also using an affirmative, closes down this section of the interaction. The narrative development remains for Anna however, with the addition of another character to potentially engage in the action.

TABLE 6.1



Discussion of Table 6.1

Using the same system of structural description as was used in Table 1, Chapter 5 to look at the relationship between social dispositions and textual activity, Table 2 looks to consider this relationship in Episode 4 of MD Scene 5. The two tables immediately invite comparison by discrepancy in the number of stages involved in the progress of the two episodes; whereas in Table 5.1 there is only one interpretative arena represented, in Table 6.1 there are three. One likely explanation lies in the different nature of the two semiotic objects: although the interpretative starting point for both was space on a page, the counting book exists as a text in its final material form; the mothers's day card on the other hand is in the process of being physically generated by Rob and Anna. The interpretative activity in which they engage around the card is therefore likely to be a longer, and more drawn out activity, involving as it does a process of interpretation of space followed by generation of mark followed by interpretation of space and mark and so on. What both semiotic objects have in common is Anna's engagement in an analysis of how a mark, either pre-existing or produced as part of the activity, represents, in a symbolic sense, an aspect of her social reality; or to turn this around, how dispositions derived from that reality can be used to interpret and generate text.

The analytic problem which engages Anna in the first interpretative arena shown in Table 6.1, is what might need to be represented on the bottom left of the page; what is missing in relation to the other visual elements already represented on the page. The visual constituents which are criterial here are the two zigzag marks representing cats. The experience which she draws on in her analysis of the situation is both textual and social. The cat, as has been discussed above, is the principal actor in the narrative which Anna has been developing in the course of making the card. This disposition to use a narrative frame is one which is likely to have been derived from textual experiences in which stories predominate. During the reading of the counting book for example, Rob consistently reads and emphasises the story narrative, in spite of the fact the book is intended to encourage young children to count; Rob's professional concerns and background were doubtless significant in this. Stories were also a very significant and visible part of her brother's life at this time, as he was in the process of learning to read at school and regularly bringing books home to practice reading aloud to both his

parents and sister. The cat's house which Anna decides to represent might also have elements of textual narrative in its origins, given the anthropomorphic nature of many story books for young children. However the cat's prominent role is also a reflection of a cultural disposition to keep certain living creatures in a domestic location as pets and to incorporate them in domestic routines and discourse.

Referring to the first interpretative arena in Table 6.1, both social and textual practices are drawn into Anna's interrogation of the area of the page pertaining to cats and the zigzag marks representing cats. This is a two way process in which her disposition to generate a story around the cat informs her analysis of the arrangement of space and the cat marks, signifying the possibility of development and transformation; and at the same time, Anna's introspection of her social and textual experience suggests new meanings to be represented on that section of the page. This introspective analysis is drawn into the next interpretative arena, and mediated materially by her marking action with the felt tip pen. Anna still uses a zigzag mark which represents, but does not resemble her meaning. Her placing of the mark however, below and to the left of the other cat marks and therefore in the cat section of the page, allows for the possibility of it signifying 'a mark pertaining to cats'. Indeed, the very assigning of a 'cat' area of the page derives from Anna's consciousness of their social and cultural importance. In the final interpretative arena shown in Table 6.1, this disposition is realised materially as the constituents of the cat story, which have motivated the making of the mark, unfold. This is mediated through the alternation of her gaze between the analytic and interpersonal roles: between the mark on the page and Rob's face. In other words, the material and multimodal nature of the social and textual resources from which this disposition has been derived is mediated by Anna at a highly symbolic level through the zigzag mark, and then rematerialised and made accessible to further interpretative work through further mediation of gaze and language.

Each of the stages involves a transformation and reinterpretation of the particular section of the card in the light of the resources which Anna draws into the interpretative arenas from her 'cat' dispositions: at the first stage the page signifies an area of the paper marked for cats; at the second it signifies an area with a new mark pertaining to

cats; and in the third stage an area of paper with a mark which signifies a cat's house. At each stage, the resources are transformed, becoming increasingly refined and sharply focused. Dispositions, by definition, also operate from a diachronic perspective; both cats and houses already have a history for Anna, on which the dispositions on which she draws during sign making activity are contingent. At each of the stages identified, constituents of the dispositions are drawn into the arena and transformed to realise material meanings which are then subject to further interpretative activity.

Chapter 7

In this final chapter, I shall consider the evidence which has emerged from the analysis of Anna's interpretative activity on the videotape and the kinds of answers which it provides to the questions posed at the end of the second chapter. In the first instance, evidence about the nature of the resources drawn on during this activity will be discussed; the process of selection and combination will be next considered and the means by which this is mediated; the relationship between the resources drawn on and Anna's social and cultural environment will be then be discussed and the degree to which it is possible to demonstrate its operation at a micro level of description; finally, the extent to which the analysis provides evidence which can be considered to attest to an intention on Anna's part to make sense of the interpretative process itself will be reviewed. I will also incorporate into these discussions an examination of whether the analyses raise questions about the sufficiency of the methodological tools used for micro description of semiotic processes, including the terminology available. Finally I will return to the observations discussed in Chapters 1 and 2, and reflect on how the structural analysis of the video tape of Anna's interpretative activity supports the insights derived from these more informal observations. As was pointed out in the first chapter, the theoretical territory underlying these questions has been divided up in order to make analysis manageable, but these divisions are not discrete and bounded and answers to each of these questions inevitably also provides answers to the others.

The analysis of Anna's work with the counting book, the card and the games incorporates a distinction between those resources derived from Anna's social and cultural knowledge and experience and those physical bodily resources through which she mediates interpretation, both intrapersonally and interpersonally. Whilst this distinction is not absolute, it has provided a valuable methodological means of extending description of the operation of individual modes in mediating interpretative activity. In addition, it is through making this distinction that it has also been possible to induce from the analysis of the physical process of mediation that is visible on the video tape, insights into the nature of some of Anna's cognitive activity generated by her active and visual engagement with the material constituents of the semiotic objects.

Significant features of those resources that are evident in the scenes analysed will be discussed next.

Interpretative Resources

A key resource which Anna draws on consistently throughout her engagement with both the book and the mothers' day card is that of narrative, as discussed by Bruner (1990, 1996). Temporal, day to day experiences are drawn into the process of interpretation, most frequently as elliptical narratives in the sense that the narrative is referred to, or can be deduced from her activity, but is not represented in any complete form. This certainly involves the theorising of experience in order that stories can be produced and understood. In Anna's case this also involves the narratives themselves being theorised: from the process of relating events to actions and goals in specific and material circumstances, more general and abstract principles are derived, providing her with new and flexible resources which can be transferred to different interpretative situations; an example of what Feldman (1987) describes as 'ontic dumping'.

Relating of narrative experience to the visual constituents of the semiotic objects involves a systematic use of framing devices (see Goffman 1986). The episode, which is used in the analysis as a means of framing the data, involves a central semiotic event which is invariably synonymous with the interpretative frame which Anna is using; central refers here not just to the principal activity which is taking place, but also to Anna's principal interpretative interest at the time. The analysis of Anna's activity has generated evidence of a number of interpretative strategies with an underlying narrative structure. Comparison for example, between symbolic visual representations of things and material items in her social world provides her with a broad connecting framework; the connective significance of these material items being derived from their meaning in temporal events which have taken place in Anna's life. These frames are refined to high levels of delicacy in order to be able to accommodate variation. In the counting book, the cook's apron has a physical resemblance to her mother's apron and the butterflies have a physical resemblance to the butterflies at the butterfly farm. The frames however, are differently positioned in the two cases in order to accommodate the variation in the nature of the connecting resources. In the first case, Anna's mother's apron is physically

present in the room, providing an immediate material connection between her experiences of her mother cooking and the graphic representation of the cook's apron; in the second case, the butterflies were not materially available to Anna at that time, but were physically present during an identified past event. They are drawn into the interpretation and connected to the butterflies illustrated on the page through reflective activity mediated by linguistic interaction with Rob. In the case of the connection which Anna makes between the line drawn on the acrobat's knee and her personal experience of injured legs, the frame is refined, but with reference to the connecting experience being drawn in entirely elliptically, with no recounting of the event or events from which the reference is derived.

Another refinement of the narrative framework, used most noticeably in the making of the card, is that of possession. At the beginning of the card making activity, Anna introduces a character, 'cat'; references to it then continue throughout the course of this activity, providing a link between the scenes. With the introduction of an actor in the text, the potential exists for the development of a story around it. Possession, both in relation to personal and social and textual circumstances, is used by Anna to give a temporal structure to the development of the card text. In this case, she has drawn on theorised elements of narrative structure at a textual as well as at a social and personal level in order to rematerialise them in the marks she is making on the page. Possession has been transformed from a social and material reality into a symbolic resource through which she is able to introduce the idea of a related sequence of different episodes: cat's tree, cat's house, cat's treehouse. The possessive relationships which Anna brings into the activity give the character, the cat, objects on which it can act in different ways on different occasions; in this sense the possibility of narrative action is incorporated.

The other significant set of interpretative resources which Anna draws on are spatial resources. Each of the objects has a complex array of spatial relationships: interpretation, in the case of the book and the card, involves her in a visual analysis of the relationship between space on the pages and the ways in which the marks and images are organised in that space; in the case of the card, her initial problem concerns the structuring of a considerable area of empty paper in relation to the making of marks.

As with those derived from narrative structures, spatial resources are also deployed in systematic ways which provide effective solutions to the interpretative questions which she faces. In the case of the blank sheet, Anna uses two strategies initially: that of placing the mark close to a boundary, the bottom of the page; and that of differentiating the representative role of marks by their relative position on the page (see Ferreiro 1984). Thus, Anna's positioning of the material mark embodies, as Cole (1994) suggests, the symbolic decisions which she has made. These ways of using space reflect, as Arnheim (1969) says, logical solutions to spatial problems. As he also points out, such solutions involve a close interplay between the properties of the object and the nature of the subject looking at it. In the case of Anna's interpretation of perspective, the spatial problems posed by the differentials in the size of the bees and the fish are interpreted by Anna according to a spatial logic which makes sense in terms of her own view of the world; some of the bees are smaller than others and since in her experience small things are small because they are not full grown, ergo the smallest bees must be very young. Refinement is also involved here with different routes leading to distinct, but related interpretations (see Millar 1994). Spatial codes, in the sense discussed by Hodge and Kress (1988), operate in the counting book in ways which stress its didactic purpose: for example, the use of perspective to convey relative distance is not applied consistently, tending to be used to foreground the actions of some of the characters as they are introduced into the action of the story. In other words the illustrator uses certain artistic conventions as localised spatial codes. Throughout these activities, it is the interest of the individual signmaker which, as Kress (1993) has points out, is paramount. Whilst Anna's account of these incidences of spatial organisation are unconventional, they are always systematic and reflect a powerful ability to reason logically, to find a route through to meaning. Woodward and Serebrin (1989) also point out the consistent use of logical ways of making sense of interpretative questions by the three year old boy in their study. This all adds to the array of evidence of the reasoning abilities of very young children (Giroto and Light 1992, Donaldson 1978, Bryant 1974).

Vurpillot talks of young children's use of spatial algorithms, in which a process of trial and error leads to satisfactory ways of doing things which can then be successfully

repeated and applied in different circumstances. Interestingly, the example she cites, that of putting geometric shapes into matching spaces, is a similar task to that in which Anna is engaged during the initial stages of the two sorting game activities. Anna's activity with these games, particularly in the first stages, involves just this kind of repetition of familiar spatial routines based on her previous knowledge and experience of the stacking and sorting games. However, Anna is also able to extend the semiotic potential of these algorithms by, as in the case of narrative resources, using them for different purposes. In the case of the sorting game, she transforms the shape and space matching algorithm into a resource with an affective purpose during the second stage of the activity. The matching and posting routine is theorised by Anna to a level at which she is sufficiently aware of the principles of its operation to be able to use it in an entirely different framework. In this instance the algorithm operates along the lines of the genre patterns which Feldman and Kalmar (1996) suggest provide models for interpretative activity.

Some of the interpretative situations presented by activity around the objects require Anna to use both spatial and narrative resources in close collaboration. Disequilibrium, and by contrast equilibrium are, it could be surmised, states which have been variously experienced by Anna and theorised so as to be available for further use. This illustrates another feature of the resources which Anna draws on, namely their flexibility in relation to mode. These states are realised visually on, for example, the pages of the counting book featuring the acrobats. Spatially, the disequilibrium is created when the continuous line made by the acrobats being connected from the top of the page to the bottom is broken on the following page. However, these states are also signified narratively through the visual representation: the disequilibrium occurs because a new complication arises with the acrobats falling and dropping the cake.

Anna also draws on both temporal and spatial modes in her exploration of that which pertains to beginnings and endings. These are an ontologically significant resource in which Anna's sense of when things should start and when they should end become part of her textual operations with each of the objects. In the first counting book and card making scenes, it is Rob who frames and articulates the idea of starting textual activity;

a 'beginning' is constructed by his suggestions that they 'start on the first page' and that they 'make a card'; this is then materially mediated by the actions of, respectively, moving to a particular point in the book and folding the card in two. This pattern is also used by Anna in the MD episode in which she completes the features on the cat's face. Here, completion in the temporal sense and completion in the sense of having reached a satisfactory spatial solution operate collaboratively. The operation of beginnings and endings in the semiotic process can also be induced from the movement from episode to episode throughout the scenes, in which the negotiation of control between Rob and Anna signifies an awareness of the completion of all relevant modes of activity in any one semiotic event and the need to move onto the next. Movement from one central semiotic event to the starting of the next, on the whole takes place without any necessary articulation of a shift or change; in other words Anna's use of this resource has become sufficiently refined for it to be incorporated directly into the structure of the discourse (using the term in the multimodal sense used by Hodge and Kress (1988) and Van Leeuwen (1996)).

The analysis of Anna's activity on the video tape demonstrates that the resources which she draws on derive from her social and textual world, both at a material and at an ontological level. They are organised in ways which reflect a spatial and narrative framing of experience. These spatial and temporal resources are refined in ways which make them highly flexible and sensitive to nuances of different interpretative situations. They are always multimodal in origin, reflecting the state of the social and cultural world from which they are derived, and they are used and transformed in ways which take account of the multimodal nature of semiotic objects. Anna uses them in flexible ways which always provide her with a meaningful account of an interpretative event. It does need to be reiterated at this point that whilst their origin might be material, these are at the same time *cognitive* tools used in *symbolic* activity; in other words not all their constituents are obvious materially; these have had to be induced from the analysis of the physical and material actions of Anna and Rob available on the video film, supported by some ethnographic detail. It could be argued therefore, that they cannot be regarded as other than hypotheses. However, the use of multimodal analysis at a micro level of detail has generated consistent patterns of activity which suggest that

these are, at worst, very strong hypotheses. In other words, how Anna makes meaning from these texts is, to a considerable extent, available to scrutiny.

The Use of Terms

Two terms need to be reviewed at this point, in the light of the analyses. The term 'interpretative' is used consistently to describe the nature of Anna's textual activity and of the sub-set of resources on which she draws. Interpretation, from which the term is derived, has amongst its meanings that of 'explanation'. Implicit here could be a sense of 'primary reference' of the kind which Foucault (1983) refers to in relation to representation and resemblance, against which derived meanings are measured. Anna's interpretative activity however, far from suggesting a search for some pre-existing textual absolutes, involves her in a process of putting meaning together. The routes she makes and follows in exploring the text become part of what it means to her; interpretation is action. Its boundaries are flexible, as Woodward and Serebrin also show, allowing for the necessity of their movement to accommodate new or different meanings as they are needed.

The term 'resource' has also been used consistently to describe, in a general sense, what is needed to generate semiotic activity. In the first chapter, a distinction was drawn between 'resource' and 'tool' in which it was noted that whilst all tools are a resource, not all resources are tools. Hence one difficulty with this term is its meaning in relation to use. Matter (see later discussion) is transformed into resources which are then available for use as tools during semiotic work. However, it is not until they are actually used for such work that they move from a potential to an actual role. So, in analysing Anna's work with the objects, the resources, being in a potential state, can only be induced from what actually takes place and can be observed in the course of her mediating her interpretation through physical means; in other words from the use of semiotic tools. Whilst the term 'resource' has been consistently used throughout the analysis, it is clear that both cognitive and physical resources exist in potential and realised states; as both resources and tools.

The term 'semiotic matter' was mooted in the first chapter in order to distinguish between potential resources and available resources. Anna's interrogation of the objects, it could be argued, starts a process of transformation of matter to resource. This distinction is helpful in accounting for the decisions she makes during her activity. Perspective, for example, can be seen as a spatial algorithm which Anna might use as a resource to account for instances of differentials in size and distance of objects in the illustrations in the book. Evidence from the analysis however, suggests that whilst these differentials are critical to her, in this instance this algorithm is not available to her as a resource to account for them. Arguably, it is the very lack of this resource which leads to her interest in the differentials and to the connection which she makes between her personal experience and the visual representation on the page. A more detailed discussion of the nature of semiotic matter and its relationship to resources lies to a considerable extent in the realm of the third question considered, namely the relationship between resources and social dispositions. Tables 5.1 and 6.1 in Chapters 5 and 6 respectively, identify an interpretative arena in which experiential and textual modes are drawn together and reconfigured or, in terms of the current discussion, where matter is transformed into resources. It is not within the remit of this thesis to discuss the relationship between resources and matter at length, separately from the other questions. However, it would promise to be a productive area for future development.

Mediational Means

The resources through which Anna mediates her interpretative activity are physical, bodily resources and in that sense distinct from the objects with which she engages. For Anna, her body is itself a multimodal resource available to her for the purpose of mediating her own meanings. As was made clear in Chapter 3, the process of arriving at a set of categories which satisfactorily reflected the physical strategies consistently used by her in the course of mediating meanings around the objects was a gradual, abductive one. The categories derived from the preliminary interrogation of the video text were then used to structure the analysis from which, as has been said, other resources used by Anna were induced. The analysis also uncovered further levels of meaning making potential within each mode of mediation described. In their operation, they are revealed

as having multiple constituents which provide a flexibility which allows them to be used in a variety of ways as the demands of the semiotic activity in hand require. In other words, the specialised function of the modes is made possible by the fact that they have multiple constituents, each having the potential for an independent mediating function. In spite of this however, the levels of description which are readily available reflect a situation in which certain modes, predominantly language, maintain a privileged position within the process. Methodologically speaking, more refined levels of description are possible, at least in theory, for language than for the other modes included in the analysis, since there are more available and established systems of linguistic description already in existence. Within this research however, attempts have been made to maintain parity in the levels of description by having a single descriptive category for each mode. The analysis derived from this description shows each of the mediating modes, language, vocalisation, gesture, gaze and action, to operate with multiple constituents.

Linguistic tools

In mediating interpretative meanings through language Anna is, as Halliday (1993, 1978) has pointed out, engaging in a highly socially interactive process. It is through her control of discourse structures that she is enabled to use her interaction with Rob to generate and realise meanings. A motivating factor in much of her linguistic activity is the maintenance of this discourse; this is one way in which Anna can maintain the interactive nature of the interpretative activity. Anna uses variants of the continuative 'yes' to maintain the discourse; even on occasions when Rob has misunderstood her, the concern to retain the momentum of the discourse can override a detail of understanding. She uses statements to inform Rob of the material and symbolic action she is engaged in, in order to retain his involvement. Questions, particularly about the visual images in the book, are asked to advance her understanding, but like the statements, are designed to continue the discourse by requiring a response which necessitates Rob's continued involvement; questions are also asked when the answer is known, with the purpose of drawing Rob into an activity. Anna's use of imperatives is a particular feature of the card making, through which she mediates her interest in Rob engaging directly in the physical activity of drawing and writing. At the other end of the

scale, discontinuing linguistic interaction is used to withdraw involvement: during the reading of the counting book, Anna discontinues speech when they reach a page on which there is nothing of interest to her. Her concern to maintain Rob's linguistic involvement in her activity is partly affective, but also reflects a meta-semiotic awareness on her part of the significant role which linguistic interaction plays in her interpretative process.

Anna uses language to mediate a material connection to the objects: she uses it deictically to signify that she is identifying a significant location on, or in relation to the object. Having identified a location, she also uses language to materialise meaning: this happens consistently throughout the making of the card where language is used to realise the signifying status of the zigzag marks. The identifying of signifieds in this way then enables her to generate the cat narrative which she develops in the MD Scenes. Language is also used in an substantiating capacity, contributing to the process of affirming meanings which have been derived from Anna's visual analysis. Prosodic constituents are also deployed here, with intonation being used by Anna to foreground the enquiry around meanings which is at the centre of this kind of affirmatory discourse. Each constituent of the linguistic mode, including prosodic constituents, is used by Anna for a specialised purpose within particular sequences of her activity.

Sound tools

Vocalisation, although a small category in terms of the number of instances recorded, likewise has a unique semiotic purpose distinct from that of linguistically structured sound. Whilst Anna's use of vocalisation concurs with the observation of Cruttenden (1997), that it is interruptive in function, at least in part, it is the flexibility of its use to generate different types of interruption which is of particular interest. Hence vocalisation is used to hold interpretative proceedings in time, when Anna is waiting for a particular response from Rob during the reading of the book, or where she is deliberating in the course of interpretative analysis; in the card making process, vocalisation is used by her as vocal action, to interrupt Rob's suggestions for further activity on her part; in this case, the vocalisation also carries an affective constituent, expressing irritation at the need for an interruption in activity. However, in all these

cases, the interruption is to linguistic activity, with activity in other modes often being maintained as part of the semiotic event in which the vocalisation is involved.

Gestural tools

Anna's use of gesture has a similar pattern of motivated and discrete use. There are parallels to be drawn with the physical movements Anna makes in the course of gesturing and the descriptors developed by McNeil (1992). However, where the descriptors used by McNeil describe the physical form of the gesture, the analysis in this thesis focuses on its the function in interpretative events. Certainly Anna uses gesture deictically, as described by McNeil, pointing to parts of the page or the paper, or even to other items in the room. Her purpose in using gesture in these instances however, is to use the resource most apt for for the mediation of her meaning; in this case to physically demonstrate a material location on or near the object. The gestural mode is most useful for this purpose and the deictic constituent the most appropriate refinement; the term 'locating' might be used to describe this function of gesture in the interpretative process. McNeil also describes gestures as involving 'beats', often tapping or up and down movements on another part of the body or on a relevant object; here again Anna can be seen using such actions: her tapping, or sometimes rubbing with her finger on the page, is associated with holding a previously identified semiotic location as the focus of attention for an extended period of time: a 'deliberating' gesture in the sense of extending the time when interpretative decisions can be made about subjects in that location; removal of the finger often acts as closure of the topic. The evidence from Alibali et al, that gesture can be associated with tentative ideas, is interesting in this respect. McNeil also describes a third kind of gesture as 'iconic': having a mimetic relationship to the accompanying speech. None of Anna's gestures quite fit into such a category, although there are instances where her gesture is mimetic of the meaning she is mediating: where, for example, she moves her finger along the book title, this is mimetic of the action of physical action of writing; likewise her sweeping gesture across the cartridge paper to indicate to Rob where on the page she wants him to draw and write is mimetic both of the physical space he could cover and the openness of the options available to him. These are only small instances, but in both

cases Anna is in some sense ‘enacting’ her meaning through the mediation of her gesture.

Where use of gesture, as used in the interpretative process, differs most substantially from the view of gestural use discussed by McNeil, is in its relationship to other mediational modes, particularly language. Whilst McNeil does see gesture as having meaning making properties in its own right, nevertheless these are seen as part of the linguistic process; gestures are co-expressed with language, not just in the sense of happening at the same time, but also in the sense of having the purpose of enhancing the linguistic message. Anna’s use of gesture is co-expressive with other modes in the sense of mediating meanings multimodally, but not in the sense of being used to *enhance* the linguistic message; as has already been discussed, gesture has a unique function within her interpretative process (See Kendon 1994). This is more in line with evidence from Alibali et al (1997) and Ireson and Goldin-Meadow (1997) where differential information was produced through linguistic and gestural modes during problem solving activities.

Action tools

At an early stage in designing this analysis, the combination of the modes of gesture and action was experimented with, based on the premise that they are both modes which involve movements of parts of the body as tools (there are perhaps some parallels here with the use of vocal apparatus for the production of both language and vocalisations). As was suggested previously, on a continuum from movement with an instrumental purpose through to movement with a symbolic purpose, the boundaries between movement as action and movement as gesture are not always going to be clear. Indeed, a distinction has been made between technical and expressive action, with the latter describing the positional relationship between body and object. Anna’s tendency on occasions, to rest her elbows on the table in order to be able to scrutinise the book more closely, exemplifies this kind of expressive action. However it is worth noting that although for the viewer of the video this is an expressive action, for Anna herself this is a technical resource carried out to better facilitate her activity. This exemplifies the suggestion of Laban (1971) that actions are never devoid of expressive elements.

An uncertain boundary also exists between the instrumental and symbolic purposes in what has been termed technical action. In making her zigzag marks, Anna engages in a physical activity, a technical action, one purpose of which is to mediate her symbolic intentions. This is in contrast to, for example, the technical action used in picking the pens out of the pot. Another level of complexity is added where Anna uses the physical movement of her pen mimetically, and incorporates that action into the symbolic meaning of the mark: most strikingly where she makes a tall, thin zigzag up most of the length of the page to represent a tree. Here the technical action materialises the representative role of the mark, physically incorporating the action in the symbolic mark, leaving traces of its technical production in its material form in the manner discussed by Ormerod and Ivanic (1998). Not only that, but the total result of this action is left as a material, visual signifier on the page which can be returned to on different occasions for further semiotic action; an example of what Van Oers (1994) calls the double function of the sign. It is in this ability of action to make permanent (in the sense of enduring over a specified period of time) transformation to the material form of the object, that its function is most distinct from that of gesture. For Anna, it is a tool which she uses in different ways and with levels of refinement which enable her to explore relationships between material and symbolic forms.

Gaze as tool

Gaze is used by Anna as a means of mediating meanings in two ways: interpersonally, and what has been characterised so far as analytically. These are distinct modes of visual mediation, each of which is multiply constituted; nevertheless they frequently operate in tandem, with Anna alternating between the use of interpersonal and analytic visual tools as she works with the objects. Not only that, but this system of alternation often involves a double process of mediation with percepts which have been visually mediated then being brought into the interpretative arena through, or partly through, gaze used as an interpersonal tool.

With respect to the use of gaze as an interpersonal tool, of the three functions identified by Kendon (1967), monitoring, regulating and indicating planning, the first two are

readily identifiable in Anna's use of gaze. However, as in the case of other resources, it is her use of the constituents of these functions to achieve refined levels of meaning in the process of interpreting and generating objects which is significant in this research. Her use of gaze to monitor Rob's response occurs principally in the course of affirming or realising meanings: where there is an element of uncertainty about her use of language, for example, this is followed by Anna looking at Rob for affirmation to check whether she has been understood; likewise her use of language to realise meanings is invariably followed by her turning her gaze on Rob, in this case to monitor whether Rob has acknowledged the movement of visual percepts and representations into the interpretative arena. Gaze is also used by Anna affectively, to monitor the degree of Rob's attention to what she is doing: this is particularly evident in the sorting game where her shift of gaze from the object to Rob marks a change in the whole purpose of the activity. Her use of gaze to signal significant points in discourse, what Kendon calls its regulatory function, runs parallel with its monitoring function in certain circumstances: the pattern of moving gaze between the page and Rob's face whilst drawing the cat's features, for example, is used to monitor realisation of meaning, but also has the effect of contributing to the structuring of the episode. The regulatory function is also evident when gaze is used to put an interpretative moment on hold; retaining Rob's visual attention to a particular location by holding his gaze for an extended period.

The monitoring function of gaze is also used to mediate action: in the case of the sorting game, for example, Anna uses her gaze to monitor her use of the algorithm; at an even more instrumental level, she monitors the business with the felt tip pens through her gaze. This is quite distinct from interpersonal monitoring, but also distinct from the operation of what has been termed analytic gaze. Here gaze mediates ideational resources by means of what Arnheim (1968) describes as visual thinking. The distinction made by Dugdale (Widdicombe 1998) between eyesight and vision is also helpful here. For a sighted child like Anna, eyesight mediates vision through the kind of active exploratory operations to which Arnheim refers: through using her eyes she assesses what is of significance on the page; frames significant sections on the page or the picture, foregrounding them for detailed activity; locates specific images on the

page; follows a physical or conceptual trail, for example, Rob's finger or a pen moving on the page, or the pattern of representation applied to the bees. Sight is also used to mediate connections between visual representations and visual experiences, for example between the apron on the page and the apron in the kitchen. Gaze in the sense of eyesight mediating vision, like all the other modes discussed is multiply constituted and the constituents used by Anna to achieve the best possible solutions to interpretative problems. Finally, there is one scene in which the visual representation generates such a powerful and complete related visual experience that Anna's gaze is directed neither at Rob nor at the image: when Anna recalls the visit to the butterfly farm after seeing the image of the butterflies on the page of the book, her gaze is directed straight ahead of her, as if in drawing on her visual memory, as Gardner (1993) suggests can happen when recalling a particular incident, she needs a blank visual screen on which to reformulate it.

The Combination of Resources

At this stage evidence which relates to the first part of the second question will be reviewed: the process of selection and combination of resources. Anna's selection of resources, as has been discussed in previous sections, is determined by the interpretative requirements of the semiotic event; by the routes she follows in putting meaning together. The choices she has open to her come from her ability to use multiply constituted resources in a flexible way. Indeed it is fair to say that the evidence from this analysis suggests that it is the flexibility provided by the multiply constituted nature of the resources and the means of mediation used by Anna, which underlies her ability to combine them to create motivated and meaningful signs.

Any particular material representation might only have transient significance for Anna, in the sense that she moves quickly from one central semiotic event to the next, sometimes leaving Rob with an unresolved interest in what she had previously been doing. The apparent transient nature of young children's interest in the material outcomes of their semiotic activity has also been noted in the other related studies discussed (Kress 1997a, Labbo 1996, Rowe 1994). However, whilst concern with material outcomes might be brief, the epistemological work which has taken place has

enduring results. A significant feature of resources developed during this work is their durability and flexibility: once derived and theorised, they are not discarded but are available for re-use and transformation. It is these features which then enable Anna to envisage how they might be deployed in her exploration of semiotic routes. An ontological construct, such as beginning and ending, is available for use in a variety of different circumstances during activity with all the objects; in some cases her re-negotiation of its use is overtly stated as part of her activity, but in others, such as the movement from episode to episode, its use has moved beyond the realm of necessary conscious control. Similarly, the spatial algorithm used in the re-construction of the posting game is a resource with which Anna can deploy it without having to think about its use. This familiarity also enables her to use it to transform the nature of the activity with the game from an instrumental to an affective interactive one with the purpose of engaging Rob directly in the activity. With the stacking game, Rob and Anna also use a familiar routine, which could be termed an affective algorithm, when Anna suggests she blows the stack down and Rob pretends to be shocked at her suggestion.

Resources derived from activity with one object, or which are more regularly used with one object, are transferred and transformed as interpretative tools for use with a different object; a similar point to those made by Eco (1979) and Kress and Van Leeuwen. So Anna's familiarity with a spatial algorithm which relates the face of a three dimensional shape to the appropriate space, enables her to transform constituents of this algorithm in order to be able to use it in the very different circumstances of linking spatial relationships represented visually on the page of the counting book to spatial relationships derived from her physical and material experience. This flexibility also extends to carrying constituents of the algorithm along different conceptual routes, whilst still holding on to a common connection between symbolic representation of spatial relationships and the realm of social, narrative experience: so for example, the spatial relationships between the bees and between the fish are accounted for in a similar way, the smaller ones representing the younger ones as accords with Anna's experience of the world; but the comparative routes through which these interpretations are reached are different, one involving spatial comparisons within the set and the other between that and a different set.

The availability of previously used signs for current semiotic activity, indicates its diachronic nature. The evidence suggests that the availability of these previously combined signs as tools for Anna's work adds to her control of events by increasing the range of interpretative possibilities. The analysis shows her generating a sign during one event and then using it as a resource in ensuing activity; the term 'compound resource' has been used to describe the result of such a process. One of the most striking of these is the cat narrative where, through a compounding process of adding to the cat's possessions as the activity goes along, a story about a cat is generated; by carrying the original cat sign through the scenes, Anna both develops a narrative and structures the process of making the card. There is also evidence of the use of compounding in Anna's activity around the counting book: the disequilibrium of the disconnected swing and the falling acrobats is a marked sign for Anna only in relation to the sign on the previous page which shows the images in a state of equilibrium. Such a relationship also exists between the 'baby bees' and 'baby fish' signs. However, compounding in this sense is not the semiological chaining discussed by Barthes (1972) and described by Sinha (1988) as involving an endless circularity of sign movement. There is an interpretative purpose in the linking of the signs making them interdependent, with movement passing back and forth between them: so the disconnected swing signifies disequilibrium in relation to the equilibrium signified by the swing on the previous page. However, although the latter occurs before the former, in the obvious sense that it is on a previous page, neither one can really be said to precede or follow the other since the existence of one as a sign depends on the existence of the other. Not only that, but Anna's ability to generate interpretative signs depends on, as the evidence continually exemplifies, her skill in drawing into the interpretative arena semiotic resources associated with different times and places and modes of activity. Where in CB Anna 'speaks' the title of the book as 'writing David's' for example, she is drawing on, as has been described, narrative, affective and aural experiences which have contributed over time to what print on the page means to her; in other words, a meaning which is both multimodal and historical in essence.

The Operation of Mediation

Central to the *process* of selection and combination of resources in the course of generating signs is Anna's ability to move and manipulate the resources she is using. Ricoeur's use of the term mediation to describe the faculty of conducting from one part of the text to the other can, as has already been suggested, usefully be applied in this situation to the placing of sign constituents in the right position at the right time, and their movement from one part of the interpretative arena to another; the process of making routes through. Furthermore, the evidence from this analysis suggests that the concurrent deployment of different modes of mediating meaning, in which the modes have a specialised purpose, allows a number of semiotic operations to take place at the same time, as it were. Anna generates signs by manipulating and combining different elements of resources in a number of discrete though connected moves, through the deployment of the most appropriate tools of physical mediation to achieve the most effective meaning. This allows for different constituents of the sign to be realised through different modes of material mediation.

Some reference back to the analysis is required at this point, to clarify and exemplify what is meant. Referring to the analysis of the second episode of first scene of activity around the counting book, Anna uses gaze mode to interrogate the image on the page; the question raised by this interrogation is mediated linguistically to Rob, his attention focused on the page through the mediation of Anna's action in holding the book up so that he can see it; her gaze remains on the page, retaining it as the semiotic focus of the interaction. Next, Anna operates the modes concurrently, generating a discrete meaning through each and refining their operation to match the purpose for which they are needed: she uses a deliberating gesture to indicate her uncertainty around the identity of the image on the page, then holds her finger still, transforming it into a deictic gesture to retain the locus of attention on that position on the page; she completes her original question with a linguistic deictic, drawing the narrative and textual interest implied by the question into the interpretative arena; narrative and spatial modes intersect at this point, mediated, respectively, by the linguistic and gestural deictics; Anna now holds the interaction, mediating this through an interruptive vocalisation, and using her extended gaze in a regulatory manner to draw Rob into the interpretative arena. The intersection

of Anna's social and textual experience with specific visual images and features of the text, through the linked mediation of gesture and language, is a significant pattern of mediation in her activity with the counting book. Gesture, as has already been said, has a close relationship to action; however, the movements of a gesture can be refined in ways which make them ideally suited to physical locating of detail in the features of the text, often following the use of gaze analytically. In this way, constituents are moved into the centre of the interpretative arena.

In the case of the mothers' day card, the pattern of activity shows a prominent mediating role for action. It is through the physical action of making the marks on the page that the text is generated; in other words, the nature of the object plays a prominent role in determining the pattern of use and combination of the means of mediation. However, the function of the means of mediation remains consistent where the circumstances of the activity are similar. So, in the first episode of the second scene, following Rob's suggestion that she does some drawing, Anna turns her gaze onto Rob's pen; she uses a vocalisation to put a hold on her own activity and concurrently mediates a transformation of the agent of the drawing activity from herself to Rob, through the action of physically moving the hand and the pen so that they are positioned over an unmarked section of the page; she then, as in the previous example, intersects temporal and spatial modes, mediating her directions about events which she wants to take place through the linguistic mode, and directions about their location through the gestural mode. With the sorting and stacking games however, the patterns of combination exclude the gestural mode entirely, and the linguistic mode partially. Her activity centres around her re-running of a familiar spatial algorithm, mediated through gaze and action. The physical manipulation of the object is the means by which this is carried out, putting action at the centre of the scenes with the games so that even the communication of affective meaning, mediated by both language and gaze, is directed at and through the action. The activity with these objects is not interpretative in the sense previously discussed; an algorithm, by definition, does involve a primary point of reference against which other activity is measured. The games therefore, have a more restricted requirement for the use and mediation of resources than the book and the card.

The control which Anna exercises over semiotic events derives to a large degree from this ability to combine and manipulate resources through a complex of physical means of mediation. As was discussed in the second chapter, similar phenomena have also been noted by some psychologists: Alibali et al (1997) and Iverson and Goldin-Meadow (1997), show how children engaged in various problem solving tasks mediate different information through gestural and linguistic modes respectively. Weinberg and Tronick (1994) observed babies signifying a range of meanings by using differential and elaborated combinations of physical means of mediation including facial expression, gaze, voice, gesture and movement.

The Making of Signs

The analysis shows Anna's making of signs in the course of interpretative activity to be a process involving the relating of three elements: social and cultural experiences relevant to the interpretation of the object, but materially distinct from it; the material and symbolic constituents of the object itself; and the physical process of mediation deployed by the subjects engaged in the interpretative process. The first element is both diachronic and multimodal, reflecting Anna's social and cultural history (see Hodge and Kress 1988, Volosinov 1986). The material and symbolic features of each object are also multimodal (visual, linguistic, haptic). And the physical process of mediation is analysed according to the mode deployed; the former is recursive and temporal, moving sign elements in and out of the interpretative arena as required. Viewed this way, making signs is a complex act of co-ordination across time, modes and states. The same kind of process was also observed in the activity of the children discussed in the first chapter. The term 'motivated' by which Kress (1993) characterises the generation of signs, aptly describes the activity in which Anna engages. The high level of control of episodes by Anna which the analysis shows, reflects her concern to be able to combine sign elements in ways which enable her to always act meaningfully. The description of Anna's sign making does potentially raise questions about the internal structure of the signs and the sufficiency of currently used descriptors to account for it and this would seem to be a major area for further development.

Developing Dispositions

The third question which has been considered in this thesis, the relationship between Anna's social environment and the resources on which she draws, focuses on how the social roles played by Anna and Rob are materially connected to the semiotic interactions which take place. The evidence needed to consider this question has been partially drawn from the ethnography, but principally been induced from the analysis itself. Tables 5.1 and 6.1 in Chapters 5 and 6 respectively, address this question directly, showing that it is the mediational tools which are used as conductors between the material and symbolic elements of semiosis, placing resources where needed; specifically they are shown to draw matter from Anna's social and cultural world into the interpretative arena, transforming it into resources which are then made available for interpretative work, and also for metasemiotic reflection on the matter from which they were derived. Bourdieu's concept of habitus, which takes into account the ways in which an individual's early experience of certain social practices develop into enduring styles of action embodied in systems of dispositions, has been significant in thinking about the development of description of these connections at this micro level. Since however, the analysis in Tables 5.1 and 6.1 are a secondary level of description, derived from the substantive analysis of the use and combination of resources, they can act only as a preliminary outline of how the relationship between semiotic activity around objects and identified social dispositions might be described. In the long term, explanation at this micro level is significant in trying to achieve something approaching a description of semiosis; if, as has been argued, this involves a finely tuned, motivated process of selecting and combining resources derived from social and textual experiences, then not even the smallest constituent of the process can be considered transparent when accounting for relationships between social and symbolic practice.

The evidence from the ethnography and the analysis includes that of the kinds of dispositions incorporated into Anna's interpretative activity. Tables 5.1 and 6.1 provide analyses of the relationship between individual marks on pages and related social practice. These are broadly of two kinds. Firstly, styles of action and reaction which display an affective disposition towards interaction around objects. Playing with toys, looking at books, using drawing and writing tools, are, it has been surmised, activities

which have invited a physical and emotional response from adults in her life; this is evidenced in the analysis in a disposition to expect adults to respond when she is doing these things, and to engage in routines which demand this kind of interaction where it is lacking. So for example, Anna starts looking at the counting book on her own, but then engages in a sequence of activity with the purpose of suspending proceedings until Rob joins in with her; her desire for Rob to be materially involved in the process of making the mothers' day card persists across a number of episodes, mediated in particular by actions in which she physically moves Rob's hand into position to write and draw; with the sorting game, she transforms the algorithm she is using into a resource designed to involve Rob directly in the game. Drawn into the interpretative arena, an affective disposition can become transformed into a resource, in the sense that Rob's involvement is needed by Anna, not just for the pleasure of having him sharing what she is doing, but also for the purpose of using her interaction with him as a means of advancing her interpretation.

Anna already, at twenty three months old, displays dispositions of a second kind, namely to styles of textual action. These are evident in her material engagement with the objects; the way in which she holds the book and turns the pages and the way in which she handles and manipulates the paper and pens; these might be equated with what Lemke (1995) calls 'action genres'. Traces of a disposition to equate a text with having an identifiable communicative purpose is seen in her engagement with book and card: her generation of the cat narrative in the making of the card, for example and her observation about the 'saying' nature of writing when she looks at the title page. She also has a disposition to relate significant meanings and events in her own life to object meanings and events; in some cases this also involves affective factors as well. This plays a major role in framing semiotic events through her selection of criterial constituents of objects; she interrogates constituents which mean something in her personal experience of the scheme of things: her mother's apron and the broken eggs, both associated with her mother cooking. This infuses all of her semiotic, interpretative activity, but there is also evidence of it at a metasemiotic level: the overt statement of the connection between symbolic and social purpose exemplified in 'says writing David's' and 'branches for Mummy'. A disposition to styles of textual action also

operates at the level of the video text itself: Rob's interest in the extent to which Anna displays and develops dispositions to literate behaviour is evident at both personal and professional levels; in this sense the video shows dispositions to literacy in the making.

Epistemological Disposition

These dispositions provide evidence of, and are themselves part of a third disposition which infuses Anna's interpretative activity; it is the potential operation of such a disposition which, it has been suggested, motivates the complex manipulation and organisation of resources which has been described in this thesis. Such a disposition is characterised by an expectation of significance in the texts and objects which Anna encounters, and a need to find meaning through her engagement with them. Significance in this case operates at a symbolic level, involving what Thompson (1990) describes as symbolic action. Such action is characterised by Ricoeur (1984) as interpretation of the rules of meaning within the symbols and by Geertz (1983) as interpretation of how different systems of symbolic forms organise their particular significant world. The analysis of Anna's interpretative activity shows her manipulating and combining resources derived from material experiences in her own world with the material constituents of the objects, in order to generate routes and patterns and structures which suggest logical interpretations. Part of this process is her selection of criterial elements of the objects; she is interested in that which can be interpreted and expects to find ways to account for complex symbolic relationships in the material features of the objects.

Calhoun suggests that interpretative behaviour such as Anna's is reflective of what he considers to be a theoretical attitude which derives from a certain social placement. As both the ethnography and the analysis indicate, the social placement of Anna and her family, Rob's professional role and her brother David's recent introduction to schooled literacy (Street 1995) is such that it would be surprising if she did not have some disposition to interpret texts as meaningful objects. Scribner and Cole (1991), Heath (1983) and others (see Chapter 1) suggest that whilst the particular community and family in which children live will affect the kinds of cultural resources available for use, and that some of these have a greater affinity with the resources associated with

schooled literacy than others, nevertheless all communities provide children with an array of cultural resources with which to work. The evidence from what Anna does however, suggests that it is the *process* of selecting from whatever cultural resources are available, transforming matter into resources, and combining them in ways that are appropriate for the job in hand, that is interpretatively significant. Kress (1997a) also provides strong evidence of this in his analysis of young children's use of semiotic resources in play, drawing and writing. This view also extends to the question of Anna's age and level of development which was discussed in Chapter 1; Anna selects and combines resources available to her at her particular age and stage of development and always generates meaningful interpretations even though these interpretations will be subject to transformation on the basis of further information or understanding at some future point in time, as Woodward and Serebrin have pointed out. This is not to disregard the differentials in value and power which are assigned to certain literacies, nor the differences that pertain to age; rather it is to give due regard to what children might be able to do whatever the resources available and whatever their age.

This certainly involves a theoretical attitude, in the sense of having a concern for rules of meaning, but more than that as Wells (1993) suggests, it involves children being fully involved in the activity of enquiry into meaning. Anna selects and manipulates the means of enquiry which she uses so that she controls the operation of interpretation, even taking measures which take into account what she does not know so that the interpretative process is not interrupted. The evidence of the analysis suggests that her understanding and control of the process of her own learning is inseparable from the interpretative process itself. The suggestion was made in the first chapter that the term epistemological disposition could be used to account for what is happening here. However, what is involved is not a single disposition, but an epistemological field of habitus pertaining to the social and cultural worlds of children, in which an ensemble of dispositions, including affective dispositions and dispositions to textual action, are embodied in the different modes of physical mediation. This would seem to be another area in which further work is needed, particularly with respect to describing the relationship between the dispositions of a habitus and semiotic resources and matter at a micro level.

Back to the Beginning

At the beginning of the first chapter, I had reflected that what had surprised me about literacy learning was not what children failed to achieve, but what, in spite of such an inconsistent set of experiences, they succeeded in achieving. The analysis in this thesis makes this seem less surprising and more accountable. Assuming, which I do, that Anna is not unique in her ability to select, use, and combine those social and cultural resources available to her and to transform these into tools for interpretative purposes, I would conjecture that similar analyses with different children in different situations would reveal a similar process of selecting and combining the best resources available.

Indeed, Rosie, Helen and Krishan also selected resources in a structured and motivated way; their activity also involved interaction with others and the use of visual, spatial and narrative as well as material resources, mediated through different physical and bodily channels. Like Anna, Helen used her interactions with others in the room as resources to achieve certain symbolic ends. She also, like Anna with the cat, used the fictional monster as a flexible resource, incorporating it into her play and transforming it through the introduction of her personal experiences into the game. Krishan concentrated on the visual images in the Tintin book just as Anna did in her engagement with *The Counting Book*, both of them using their gaze analytically to frame and interpret what they saw on the page in the light of the array of multimodal experiences which informed their interrogation. All of them were also, as part of their interpretative activity, exploring the grounds of their own learning, constantly refining and transforming resources and making them available for new interpretative eventualities. Their need to mean was realised through the mediation of physical and symbolic resources derived from the minutiae of their personal experiences and over which, therefore, they all had a high level of control.

The analysis of Anna's activity with the book, the card and the sorting games suggests that children's interpretation of texts and objects is not a mysterious and inaccessible cognitive activity, but a motivated social process of generating signs through physical means of mediation; a process which is to a significant extent accessible and

describable. In an educational climate in which literacy education is increasingly dominated by prescribed pedagogies, there is a danger that the routes into literacy taken by children themselves are not considered; that their fascination with the basis of their own learning, their need to mean, is set aside.

APPENDIX

Transcript of Linguistic Interaction on Videotape

Counting Book (CB)

SCENE 1

Anna ere's te cake

ere's te cake dad

what's that /

theres

Rob what are they

Anna pff pff

Rob are they bears

no rhinos

Anna rhinos

Rob start at the first page what's on the first page

Anna yes

Rob what's on the first page

how's it start

where's the cook

Anna hmm

Rob find the cook making the cake.

Anna hmm

Rob find the cook

where's the cook

Anna er no

Rob you dont know

Anna ere's it

Rob there we are let's start

what's happening here

who's this

Anna ehh

b'oken eggs

Rob broken eggs

Anna yes
Rob who's this
Anna er baken
Rob the cook who baked the cake
Anna yea
looks like mummy's bapran
there
Rob hanging up on the door yes
Anna yes
Rob what's happening here

SCENE 2

Anna I dunno
Rob who are these
Anna monkey stoled the cake
Rob the monkey stole the cake
Anna yes
Rob and where's the cook
Anna no
there
Rob under the table
Anna yea
Rob everything's falling off the table
Anna m the eggs
Rob the eggs are breaking
Anna yea
Rob can you see two little animals here
Anna yea
Rob what are that those
Anna mouses
Rob mouses mice

SCENE 3

Anna e'phants to' the cake

Rob 3 elephants tossed the cake with their trunks

Anna yes

Rob up in the air

Anna yes

Rob four rhinos caught it

Anna Yes

laughs

[Rob turns the page Anna sighs]

Rob five clowns pulled off the cake

[Anna's eyes move to next page]

Anna *sighs*

hmm

Rob six acrobats picked it up.

Anna hmm

SCENE 4

Rob 7 crocodiles snapped at the cake

Anna yeah

is is hands

Rob the acrobats have let go haven't they they're falling off

Anna yes hold this

's hold this

Rob holding on with his leg

Anna yes

Rob hm

they're trying to catch the cake aren't they

Anna yes

Rob but the crocodiles snapped at the cake

Anna there its poorly legs

Rob he's holding the legs

Anna yes

we [stut]

we [stup chrang]

Anna yes
 Rob you saw some butterflies
 Anna mummy
 daddy
 mummy di daddy
 Rob oh you meant we went to see some butterflies didn't we
 Anna daddy
 Rob I came with you
 Anna dan mummy
 Rob and mummy and David
 Anna yes
 Rob the butterflies were flying all over weren't they
 Anna yea
 Rob that was good wasn't it
 Anna yes
 Rob do you know what colour these butterflies are
 Anna yes eh big ones
 Rob big ones
 Anna babies ones
 Rob yes
 Anna there
 Rob and what colour are they
 Anna eh
 Rob are they like your cardigan
 Anna mm
 Rob are they the same colour as your cardigan
 Anna yes
 Rob what colour's that?
 Anna not know
 Rob you do
 laughs
 Anna not know

Rob is is blue

Anna yes

Rob yes

Anna yeah

Rob says blue butterflies

SCENE 9

Rob there they are again look but this time its 14 soldiers shot at the cake

Rob they've got red uniforms on.

Anna yes my sleeves up

Rob you want your sleeves up

OK

Ann ank you ankie daddy's ankie

Rob you want daddy's hankie

why

Anna blow nose blow nose

Rob want to blow your nose

its a blue hankie.

Anna yes

Rob oh you want me to do it

thats better

Anna yes

Rob right you turn the page

Anna yes

daddy read it

Rob yes and you turn the page for me

SCENE 10

Rob oh thank you

Anna owls

Rob owls trying to peck the cake

Anna yes

Rob what noise do owls make

Anna ooo ooo

Rob towit towoo
Anna mm
no
Anna eh dad
Rob the elephants the soldier's fallen over
Anna yes oh dear
bonk bonk bonk
Rob bonk bonk
laughs
falling over
Rob 16 bears run to catch the cake
Anna yes
yawns
Rob oh are you tired d'you want to go to bed
Anna no
Rob go to bed
}
Anna no
Rob yes, you start
laughs
want to sleep on my bed

SCENE 11

Rob 17 squirrels tied up the cake
Anna yes
Rob 18 mice try to ride on the cake
Anna mmm
Rob oh what are those

SCENE 12

Anna no
tortoise
Rob 19 tortoises marched along with the cake and what's on the last page
Anna *smiles*

Rob no can you remember what's on the last page
who's on the last page who is it

Anna yes
no uh uh

Rob children the children

Anna hands
no

Rob and 20 children ate it and only the crumbs were left

Anna yes
knife

Rob yes that was for cutting the cake wasn't it

Anna there 't cake

Rob there's a bit of cake
these poor elephants they look hungry

Anna yes
elephants cake

Rob oh he's giving the elephants some cake that's nice

Anna yes

Rob mmn.

Anna got a blue jumper.

Rob he's got a blue jumper

Anna like me

Rob he's got a blue jumper like you that's right
anybody else got a blue jumper

Anna yea 4, 5, 6

Rob 4 5 6
a lot of them have got blue jumpers on some of the girls have got red
dresses on haven't they
yes she's got a red dress

Anna that like my trousers

Rob are those trousers like your trousers
yes they are

Anna in the bedroom.

Rob in the bedroom hmm they are aren't they

Anna hmm

SCENE 13

Rob did you like that story

Anna yes

again

Rob again

Anna yes

Rob your turn to read it this time

Anna yes

oh

Rob finished

Anna yes

Rob right start there it is

Anna yes start start again

Rob go on then

Anna *laughs*

daddy read it.

SCENE 14

Anna missed the page

Rob hm

Anna says writing David's writing David's writing David's

Rob writing like David's

Anna yes

Rob David's always writing now isn't he

Anna is tiger

Mothers Day Card (MD)

SCENE 1

Rob shall we shall we do a [k] its mummy's day today mothers' day shall we do
do you want to do one for mummy

Anna yes

Rob shall I make it into a card shall I fold it for a card

Anna yes

Rob And then can you do a picture on the front

Anna hmm

I a drawing

Rob there you are

Anna there

daddy daddy

daddy doin

daddy have that one

Rob I'll have that one

Anna I'll have that one

yes

Rob you have a red one are you

Anna yes

Rob OK you jus doing a lovely drawing for us are you

Anna mummy day

daddy doing there

Rob yes you do yours first then I'll do mine

Anna there

Rob what's that

Anna uh uh uh

there paper

Dad

Rob do you want me to write or draw

Anna drawing there

cat there

Anna know what

uh uh

Anna know what

do'n mine

there

uh uh

writing there

Rob do you want me to do some writing there

Anna there are

Rob what do you want me to say

Anna uh

there

there jus [tabing] mummy

Rob um

Anna jus tabing mummy

there

Rob write mummy

Anna yea

Rob is that what you want me to write

Anna I top my top

Rob what's that Anna

Anna that's tat

SCENE 2

Rob that's a cat

Anna yea

Rob oh you going to draw a cat now

Anna uh uh

do drawing there

Rob do drawing of what a cat

Anna yes

I drawing

ats tat

Rob yes there's Anna's cat and there's daddy's cat
oh
forgotten the whiskers

Anna uh

Rob I've forgotten the whiskers

Anna oh

Rob daddy's whiskers

Anna eyes I doing eyes

Rob you're doing the eyes right

Anna at's face

Rob that's his face yes you doing the eyes

Anna there's eyes

Rob red eyes

Anna mouf

Rob do his mouth

Anna that's mouf

Rob there's his mouth

Anna yea

Rob yes

Anna a nose

Rob and his nose

Anna yes

Anna tha's nose

Rob there's his nose

Anna lets finish

finish

Rob you finished

Anna yes

SCENE 3

Rob you want to do anything else on it in another colour
how about a green one

Anna yes
Rob what can you do with a green one
Anna uh
daddy
uh daddy
Rob and I'll have one as well
I'll have a
I'll have a yellow one
Anna yes a yeyo one
a yeyo one
uh uh uh
Rob what do you want me to do
Anna oh mine pen fallen over
Rob your pen fell over
Anna yes
Rob oh that's nice
oh that's nice
Anna that tats te
Rob that's a)
Anna that cats te)
Rob cats tree
Rob oh a tree for the cat to climb up
Anna yes
Rob that's a good idea
and let's do some branches
Anna hm
Rob are you going to do some branches up here
Anna yes
Rob for it to climb up
Anna yes
Rob ooh that's a lovely branch
Anna yes,

Rob oh yes
do some more branches they're lovely
Anna mummy branches mummy
branches for mummy.
Rob branches for mummy
Anna yes
Rob what are you doing there Anna
Anna that's branches

SCENE 4

Anna [rik]ing nana
Rob you're writing
Anna nana
Rob you're writing granma or nanny
Anna mama
Rob granma
Anna yes
Rob you're writing grandma there are you
Anna off nanny
Rob and that says nanny does it
Rob why not write Anna down here
Anna no do one
no do one
Rob that says Anna
Anna 3 4 5 6
Rob 3 4 5 6
laughs
that's very good
Rob so that says what
that says David
that's grandma
that's nana
hm that said cat didn't it

oh where's mummy going to write mummy

Anna yes mummy

Rob that says mummy

shall I write Anna right across the top

Anna yes

Anna I finished mine

Rob shall I help you

right

SCENE 5

Anna drawing

Rob you drawing on yourself

Anna yes

Rob do you want a drawing pen d'you want a red one

Anna mummy pese

daddy want one

Rob yes I'll have a)

Anna blue one)

Rob yes I'll have this blue one here

Anna no

Rob this blue one

Anna no this blue one

Rob *laughs*

that's a pink one

Anna yes pink one

Rob yes and you've got a red one

Anna yes

Rob right oh

Anna I got a red one

Rob you got a red one

Anna yes

Anna ats a house

ats cat's house

Rob oh yes that's a nice idea the cat's house.

Anna yes

Rob and what's that

Anna s'horse

Rob a horse

uhu

SCENE 6

Anna dad birds

birds

Rob you can hear the birds

Anna yes

Anna I finish is

daddy writing

yes

Rob daddy do some writing

what shall I write you tell me

Anna dere

do da dere

Rob what shall I write

what shall I say

Anna do da dere

ere.

Rob right what do you want me to write Anna

Anna daddy do a long long snake

Rob a long long snake

laughs

Anna yea

Anna I finish my pen

Rob that says snake

Anna yea.

Rob thank you

and this is a drawing of a snake

Rob see where it says snake
I'm going to draw a snake there
eeh eeh
I'm going to go all the way round it there's his head there's his body

SCENE 7

Anna yes I a blue one
Rob you've got to do some blue one
Anna yes
ats treehouse
ats cat's treehouse
Rob cat's treehouse
Anna yes
Rob oh
Anna that's daddy's treehouse
Rob oh thank you
Anna yes
I en
a en in the ouse
Rob hm
Anna a en in the ouse
Rob yes
Anna daddy, a en in the 'ouse
Rob daddy's in his house
Anna yes
Rob OK
Anna yes
That's 3 4 5 6
Rob *laughs*
yes
Anna 3, 4, 5, 6.
Rob hm
Anna finished pen

Rob yes I've finished thanks

SCENE 8

Anna a red one

Rob you have the pink one and I'll have the blue one

Anna oh

top on t'day

Rob ehm

Anna I writing daddy's top

I writing daddy's

I writing top

Rob you writing on top of daddy's

Anna hm

Anna this side

daddy this side daddy this side

daddy there a long snake

Rob a long long snake

hmmm whee

look at the long snake.

Anna a snake

laughs

Rob two snakes

Anna yes a snake

Rob yours is the red one

Anna yes

SCENE 9

Anna I drawed

daddy draw eyes

Rob eyes

Anna yes

eyes

Rob oh those are eyes

Anna daddy eyes

Rob hm

SCENE 10

Anna I finished mine

Rob finished with yours and me

Anna back in there

Rob oh the top's come off

Anna yes eh daddy mend my pen

oh, my page

Anna there we are there a blue one ats at

Rob a blue one

Anna yes

Anna oh no dunno no

no blue one

Rob that's a pink one

Anna pink one

at's blue one

Rob two blue ones

SCENE 11

Anna Yes writing a book

writing a book

Rob you're going to write in a book are you

Anna writing there

Rob alright you do the picture and I'll do some writing

or you could do the writing

Anna daddy daddy

Rob alright Anna

Anna I lost my top I lost my top

Rob you lost your top

Anna yes

Rob you got it now right good girl.

Anna ats tat ats te tat ats my tat

daddy do tat for Anna

Rob a cat you want a blue cat

Anna draw one

Anna I draw one

I lost my top I lost my

I finished mine I finished mine

Rob right

Anna there fold away

show g'ma, show g'ma

Rob show grandma when she comes

Sorting Posting Game (SG)

SCENE 1

Anna I doing this
I doing this

Anna es tha go
there
es tha go there
za go there
dad

Rob yea
well done

Anna zas
zis there

Rob *laughs*
you know where it goes

Anna there

Rob there yes

Anna there
i there

Rob no

Anna there

Rob that's it

Rob can you build a tower now with the other ones

Stacking Game (STG)

SCENE 1

Anna oh

Rob go on build a tower.

Anna where's David

Rob he's watching tele

Anna oh daddy

Rob let's see you build a tower
I'll make a film of you making a tower

Anna daddy

Rob I'll watch you

Anna yea
see the bebbow
there

Rob hm

Anna there

Rob well done

Anna this go

Rob well done that's very good
laughs

Anna I

Rob can you

Anna I blow it

Rob oh no are you go on.
oh dear
can you put them all back together now

Anna yes

Rob I'll mix them up
see if you can sort it out which one goes inside which one
see if you can do that

Anna there
a' there
a' there
wrong one there
dada there
let's sort it out sort it out
there

Rob well done
 laughs

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