

A STUDY OF REFERENCE AND ANAPHORA IN CHILDREN'S NARRATIVE

Gillian Wigglesworth

This paper reports the results of an experimental study designed to provide insights into the development of children's ability to introduce a character into a story, and to maintain reference to that character and any additional characters. Previous studies have suggested that the appropriate linguistic devices used for this purpose, such as definite/indefinite articles and anaphoric pronouns are not acquired until relatively late. Four groups were tested, three groups consisting of children aged eight, six and four, and an adult group which was included in order to provide a control. The results indicated that none of the groups of children had attained adult competence in their control of reference and anaphoric relations. In comparing the results of this study with other similar studies, it was also suggested that the nature of the materials used to elicit the narratives can influence the conclusions drawn from the results.

1. INTRODUCTION*

This paper is concerned with narratives elicited through the use of picture prompts, collected from children in three age groups as well as adults, focussing particularly on the ways in which referents are introduced and anaphoric relations are set up and maintained throughout the narratives. The results of this study are discussed in relation to other studies which have been concerned with referential strategies, most particularly Karmiloff-Smith's (1981) study of narratives elicited from French and English speaking children.

2. APPROACHES TO NARRATIVE ANALYSIS

The ability to relate a coherent, structured narrative demands considerable linguistic and cognitive skill. The information must be organised into a whole, participants must be named and differentiated, and linguistic referents must be established for future anaphoric reference. There have been a variety of approaches to the study of child discourse, with major focuses concerned with the analyses of children's stories of past events (e.g. Petersen & McCabe 1983; Hudson & Nelson (1984), their fantasy stories (e.g. Applebee 1978; Botvin & Sutton-Smith 1977) or reiterations of favourite tales (e.g. Sutton-Smith 1981). The analysis of discourse elicited through prompts has received less attention, but represents a qualitatively different approach which tests the ability of children to analytically sequence events and create a storyline (see, for example,

Karmiloff-Smith 1981). Under these conditions, no substantive test of memory is involved; instead, the children's skill in developing a cohesive narrative is tested.

Two recent studies illustrate the way in which these different approaches can influence results. Bennett-Kastor (1983) suggested that children as young as two could introduce a noun phrase into a story and use it to maintain cohesion throughout successive clauses, while Karmiloff-Smith (1981; 1983; 1985) claimed that it was not until around the age of seven that children were able to organise sentences into a cohesive narrative unit. To account for this difference it is necessary to examine the nature of the task required of the children. In the first instance, where the children are simply asked to tell a story, they either retell a known tale or invent a story. Here, they may rely on memory of previous hearings to structure their story, or in the case of invented stories, on internal mental representations of which they, as both creator and narrator of the story, have control. In the second case, the children were being

* I would like to thank Dr Edith Bavin for her most constructive comments of an earlier draft of this paper.

asked to tell a story from a specific set of picture prompts, demanding greater organisational skills on the part of the child who was required to set up linguistic referents from extralinguistic sources and maintain clear reference to them throughout the length of the narrative. Thus, not only is the child required to continually process the new information presented in each picture, but s/he must at the same time organise the information in a structured way. A variety of prompts may be used to elicit narratives: subjects may be asked to watch a film and retell it (e.g. Chafe 1980); they may be read or read a story and then retell it (Mandler & Johnson 1977; Mandler 1978); alternatively they may be shown a set of pictures bound into book form and tell the story that develops as they go through the pictures, which they may have seen previously or not (as in Karmiloff-Smith's study reported in Karmiloff-Smith 1981, 1985). However, only when children relate a narrative from previously unseen pictures that they will be unable to draw on previously learned notions of story structure to develop their narratives.

Karmiloff-Smith's (1981) study was one of the earliest studies of children's narrative production of this type focussing on the way children maintained linguistic cohesion throughout spoken narratives. Her results indicated that children under six used spatial deictics and paralinguistic gestures to this end; pronouns were deictic, and provided each sentence was looked upon as a separate unit, the pronouns were not ambiguous, although they were if the series of utterances was looked at as a whole. At around the age of six, children started using pronouns anaphorically, together with other devices which maintained cohesion in their narrative. The thematic subject was kept in sentence initial position, but not always in the role of agent, but on other occasions having the role of experiencer, agent or possessor. At this age the primary character was maintained in sentence initial position even where this required spontaneous speech repairs, indicating that the children used a thematic subject strategy in order to handle the narratives as a whole. Older children (8/9 years) also had a tendency to determine a thematic subject, but would also place other characters in sentence initial position, marking the fact with some clear linguistic marker (e.g. full definite expression). Pronominalisation of non-thematic subject was rare, and usually only occurred within sentence boundaries with connectives, suggesting that the ability to monitor the relationship between sentences and spans of utterances is acquired relatively late.

Consistent with these findings, Karmiloff-Smith (1983) developed a three-phase model, useful in both linguistic and non-linguistic analyses, where, in linguistic terms, the first procedural stage is characterised by a rich lexicon with pronouns being used deictically, a good command of syntax, but a lack of overall narrative organisation. The second, metaprocedural stage is characterised by the development of a thematic subject which always appears in sentence initial position, and a poorer lexicon, but with a recognisable overall organisation. The third stage exhibits overall organisation, but the richer lexicon is again evident and narratives are more detailed. Karmiloff-Smith concludes that children are constantly solving problems when they produce language. They need to generate ways of mapping between linguistic terms and extralinguistic referents; deal with local syntax in order to output well-formed utterances; and generate processes for linking spans of utterances into a single unit. Therefore not only must linguistic processes be taken into account, but processes of a more general cognitive nature involving overall organisational procedures need to also be considered. The meagre lexicon and lack of story detail found by Karmiloff-Smith at level two is the result of a qualitative change, whereby organisation processes temporarily come to the fore as the child attempts to control her/his output in order to produce an organised narrative. At level three the development of organisation processes has been established, enabling organisation, richness of lexicon and story detail to be woven together for the purposes of producing a narrative (Karmiloff-Smith 1983).

In a related study, Tyler (1984) used the model as the basis for her examination of the sources of information a child uses in order to integrate new utterances into her or his representation of earlier discourse. Taking the concept of three levels, Tyler suggested that the second stage was one in which pronouns did not function referentially, but marked the most prominent entity as the one which was still being talked about, whereas in the third stage, children were sensitive to both the structure of the discourse and the lexical properties of the pronoun.

Tyler's (1984) experiment tested 40 children of 5, 7 and 10 years of age with one of four versions of three types of story where the semantics of the verb in the first type indicated the secondary protagonist as the object; in the second type the verb was neutral, but the discourse indicated one protagonist as object, and in the third type the discourse biased a perception of one protagonist as subject while the verb was inconsistent with this. Tyler was able to draw two main conclusions. Firstly, the thematic subject constraint proposed by Karmiloff-Smith was found to be less dominant in younger children than suggested since these children took into account the lexical properties of the pronoun when mapping between utterance and discourse. Secondly, where there was conflict between the verb and the protagonist, children responded either by making the protagonist consistent with the verb, or by introducing an entirely new element, suggesting that children's integration of utterance and discourse was primarily guided by the pragmatic considerations of the verb.

Silva (1984) used picture prompts to elicit narratives from children, which were analysed for the use of conjunctions and then compared to the way in which adults used conjunctions in telling the same story. Her results indicated that children use conjunctions differently from adults, particularly in extended discourse such as narratives, suggesting a difference between what surfaces linguistically in conversational discourse and in narrative discourse since the early use of conjunction in conversation may be prompted by the interaction with others.

Bavin & Shopen (1985) elicited discourse from Warlpiri children using the methodology of Karmiloff-Smith. By testing a group of 30 children ranging in age from 4;10 to 12;0, they showed that the older children concentrated more on organising their narratives into story-like forms and developing a thematic subject than did the younger participants, who stressed actions rather than participants and omitted details essential to showing how events were related. In a later paper using the same data base, Bavin (1987) supported Karmiloff-Smith in finding that children under six were unable to structure a narrative through introducing referents and maintaining anaphoric reference to them. However, language specific properties may also have a role to play. Where the children were using overt nouns phrases to refer to the thematic subject, it may not be to resolve ambiguity, but in order to focus attention, since focus markers cannot be used without an overt noun phrase (Bavin 1987). On a methodological note, Bavin & Shopen 1985 also found that a longer story (i.e. 12 pictures rather than 6) allowed the children to become more involved in the story and produce more cohesive narratives.

Monolingual German-speaking children were the subjects in Bamberg's (1986) study involving the elicitation of narratives and the examination of anaphoric relations has been undertaken by Bamberg (1986). This study also used picture prompts, but in a substantially longer, commercially published book of 24 pages, and with an episodic structure commensurately more complicated. There were also differences in the methodology, with the narratives analysed being those collected on the children's second telling of the story, and after they had had a parent tell the story to them on the two previous consecutive days. This methodology was demanded by the nature of the materials, since the story depicted by the pictures was both long and complex. However, it is also likely that the methodology affected

the results Bamberg obtained, with the children's narratives being influenced by their parent's storytelling.

Bamberg's interest was in the way children set up, switched and maintained reference in order to develop a cohesive, coherent narrative. In comparing the children's narratives to those of their parents, he found that while adults almost always used a full noun phrase when switching reference from one character to another, children used a variety of approaches which were conditioned by the story participant to whom they were referring and the age of the child. In comparing his results to those of Karmiloff-Smith, he found that while there was evidence for a thematic subject constraint, it appeared much earlier in the narratives of these German-speaking children, occurring in the narratives of the youngest group (3;6-4 years). However, only further research will show whether these results were influenced by a methodology (in which the children had had the story told to them previously enabling them to model their own narratives on those of their parents), or whether specific features of the German language influence the earlier use of this strategy (the fact that the basic word order in German is T(topic)VX, for example).

McGann & Schwartz (1988) used 6-page picture books to elicit narratives from monolingual English-speaking children. They, too, were concerned with the way in which children switched and maintained reference, but their analysis focussed on the degree of agency, frequency of appearance, and whether the character's appearance on the first page of the book effected the children's use of nominals and pronominals. These three conditions were manipulated in order to determine whether these features affected the children's reference to the main character in the book. Their results indicated that these features did effect the children's notion of main character and that in all but the youngest group (3;3-3.11) pronominal forms when switching reference tended to be reserved for the main character, particularly in the conditions where frequency of appearance and first appearance were concerned.

That there are universal trends in the way children develop the cognitive ability to tell a coherent, cohesive narrative is indicated by the similarities in the results which have been obtained in the cross-cultural studies outlined above. However, language-specific properties can also effect the developmental path of narrative acquisition. For example, Bamberg (1986) found that while adults used full nominals to switch reference on all occasions, even the children in his eldest group (9-10 years) did not do this. On the other hand, Bavin (1987) showed that by eleven Warlpiri children were emulating adult narrative norms and using full noun phrases even where ambiguity would not ensue with a pronominal or ellipsed form. Such differences may be attributed to specific language properties, and Slobin (1985) has shown that the details of particular languages can effect the acquisition of certain linguistic features. Further study of the acquisition of narrative skills is likely to support this view, whilst at the same time providing evidence in support of general cognitive developmental stages such as those proposed by Karmiloff-Smith (1983, 1985).

This study was designed to further investigate the ways in which children establish referents and use pronominal forms, with the aim of contributing to our understanding of the development of linguistic cohesive devices and story organisation. It was expected that the results of this study would support Karmiloff-Smith's thematic subject constraint, with the youngest group using pronouns deictically, whilst the six-year old group developed a thematic subject and reserved pronominalisation in sentence initial position for the thematic subject. The eight-year old group was expected to exhibit greater flexibility in the way they handled their narratives, pronominalising both thematic subject and secondary characters in utterance initial position. In addition, the materials were designed to determine the effect of

changing parameters such as length of story and involvement of secondary characters had on the linguistic results.

3. METHODOLOGY

3.1 The Subjects

Eighty subjects were tested: twenty adults, and twenty children in each of three age groups: 4, 6 and 8. Half the subjects were male and half were female in each group (see Table 1). All subjects were monolingual English speakers from similar socio-economic backgrounds, i.e. all children came from upper middle class families. The four-year olds were selected from the La Trobe University Children's Centre, and the six and eight-year olds were selected from single-sex, fee-paying schools in Melbourne. Children were excluded from the study on the basis of exceptionally poor academic performance, or where their regular teacher considered that a child had particular language problems.

Table 1: Subjects used in the study

No of Subjects	Ages	Median Age
20	8;1 – 8;11	8;6
20	6;0 – 6;11	6;5
20	4;0 – 4;11	4;7

The experimenter spent a considerable time with all children in their classroom prior to testing, so that all the children were familiar with her by the time they were tested. The adult group was composed of undergraduate students at La Trobe University.

3.2 The Materials

The materials consisted of two picture books. Book 1 contained eight pictures, while Book 2 had 10 pictures. The pictures were drawn in pen and ink and coloured, then laminated and bound into book form.

The story depicted in Book 1 was designed in such a way that no strong thematic subject would emerge on initial viewing since no single character could be easily singled out as a major protagonist. The pictures in this book depicted the following:

- Picture 1: Three children playing volleyball in a park
- Picture 2: A girl and a boy enter at foreground; original children now in background, still playing
- Picture 3: The girl and the boy run towards the others as if to join game
- Picture 4: Close-up of all five children playing together
- Picture 5: The girl misses the ball, and a dog has entered picture and is seen chasing it
- Picture 6: The dog has the ball in its mouth and the girl and the boy are in pursuit
- Picture 7: The girl has caught the dog and rescued the ball, and is patting the dog who is sitting on the ground
- Picture 8: The girl runs back to the game (now again in background) holding the ball.

It was not until the seventh picture where the girl is pictured alone with the dog that specific reference to a single person is likely. Each picture was designed to depict considerable action in order to encourage involvement with the story.

The second book was designed specifically to encourage the development of a thematic subject:

- Picture 1: A girl is standing on a station platform waiting for the train which is coming down the track
- Picture 2: The girl enters the train
- Picture 3: The girl kneels on the seat to put her bag in the rack above
- Picture 4: She sits down and is facing an older woman who is reading a magazine
- Picture 5: The girl is sitting watching the woman who is searching in her bag for something
- Picture 6: The woman has taken a packet of sweets from her bag and is offering one to the girl
- Picture 7: The girl reaches across and takes one
- Picture 8: The girl is sitting while the woman is reading her magazine
- Picture 9: The girl climbs onto the seat to get her bag down from the rack
- Picture 10: She leaves the train

Once the thematic character has been well established, a secondary character of the same sex is introduced, rendering the use of pronouns without clear referents, ambiguous. Since the secondary character becomes an active participant in the fifth picture, she cannot be ignored.

3.3 Procedure

Each subject was tested separately with the experimenter and subject seated side by side at a table. The experimenter showed the subject the first picture in the first book and asked "what's happening?". Once the subject had responded the experimenter turned the page, but no further prompt was given. Once the first book had been completed, the procedure was repeated with the second book; however, only half the subjects in each group were asked to talk about the second book. This was part of a larger study in which the other half of the subjects were required to perform a different task which is not under analysis here (Wigglesworth 1985¹).

4. RESULTS AND DISCUSSION

4.1 Introducing the protagonists

Table 2 shows the way in which the first characters were introduced in the first book.

Table 2: Introduction to first characters in Book 1(20 Subjects)

	Adults	8 y.o.	6 y.o.	4y.o.
Noun phrase	14(70%)	0 (50%)	8 (40%)	1 (5%)
Pronoun	6 (30%)	10 (50%)	12 (60%)	11 (55%)
Ellipsed	-	-	-	8 (40%)

There is a clear and increasing tendency with age here to introduce the children on the first page with a full noun phrase. It is postulated that where pronominals are used to introduce the first character these are used by all subjects deictically. The subjects were not told in advance that the pictures constituted a complete story and since the experimenter was seated alongside the subject and could also see the pictures, a deictic pronoun would be an adequate response to the prompt.

¹ The results presented here are part of longer study undertaken for a Masters' Preliminary Thesis at La Trobe University, Melbourne in 1985.

The results for Book 2 are presented in Table 3 below. Most notable here is the difference in the way the six-year old group introduced the first character here compared to their introductions in the first book.

Table & Introduction to first character in Book 2(10 Subjects)

	Adults	8y.o.	6 y.o.	4y.o.
Noun phrase	8 (80%)	5 (50%)	8 (80%)	2 (20%)
Pronoun -		5 (50%)	1 (10%)	6 (60%)
Ellipsed	2 (20%)	-	1 (10%)	2 (20%)

While the subject sample sizes were different for both books, being smaller for Book 2, the results require some explanation. One possibility is that the nature of the materials elicited different responses since the first book required introduction to a group while the second book required introduction to an individual. However, since only the six year old group exhibited a substantially different response in these introductions, this hypothesis is not supported. More salient is the fact that Book 2 was always tested after Book 1. As a consequence of this, the subjects were likely to have been more aware of what was expected of them in Book 2, i.e. that the events depicted in the pictures constituted a story. It seems likely that the 6 year-old subjects were introducing a character to take on the role of thematic subject for the duration of the discourse. This would be consistent with Karmiloff-Smiths findings that 6 year-olds are particularly conscious of this need to set up a thematic subject in order to create a linguistic referent for further anaphoric reference. Interestingly, two adults ellipsed their initial reference to the first character in this second book. Bill McGregor (pers. comm.) posits an explanation for this in that the most obvious character is sometimes not introduced in a narrative; in this case because the visual information was shared between subject and experimenter, this would seem even more likely.

The use of definite and indefinite articles and their relationship to reference is complex and major studies have been devoted to the study of their acquisition by children (e.g. Maratsos 1976; Karmiloff-Smith 1979). Maratsos (1976:93) proposes that there are two semantic factors involved in acquiring competence in the use of articles; the first determines whether the referent is distinguished from all other members of its class by some unique specification (i.e. use of the definite article) as opposed to a situation where only the referent's class membership or the idea of its class membership is marked (i.e. the indefinite article). The second concerns the ability of the listener to make the same identification of class membership as the speaker. The use of articles in the introduction of characters in a picture book, where speaker and listener share extralinguistic referents through the pictures, involves an additional complexity. This is because as a unique example its class, the extralinguistic referent (i.e. the character depicted in the picture) would always be given definite reference, but its role as a protagonist in a story means that both definite and indefinite reference are acceptable. Bamberg (1986) examined his adult subjects' use of definite and indefinite referents for introductions to the characters in the picture books he used, and found that definite forms were used approximately half the time, while indefinite forms were used the other half of the time. Table 4 below shows how the first character(s) were introduced in each of the two books in this study, suggesting that there were differences in the adult's use of articles compared to that of the children:

Table 4: Articles used for initial mention of first character

	Adults*	8y.o.	6 y.o.	4 y.o.’
Book 1				
Indefinite	12 (60%)	2 (10%)	4 (20%)	–
Definite	2 (10%)	8 (40%)	4 (20%)	–
Pronoun/ellipsed	6 (30%)	10 (50%)	12 (60%)	19 (95%)
Book 2				
Indefinite	5 (50%)	-	3 (30%)	–
Definite	2 (20%)	4 (40%)	5 (50%)	1 (10%)
Pronoun/ellipsed	2 (20%)	6 (60%)	2 (20%)	8 (80%)

* one adult and two four year olds omitted the article with the nominal.

These results exhibit similarities to those of Bamberg (1986), with adults showing a slight preference for indefinite reference over definite or pronominal reference, and children showing a clear preference for definite or pronominal reference.

Having introduced the first character, the subjects were required to switch reference to the secondary character(s). In the case of Book 1, there were three opportunities for switching reference: the arrival of the girl and the boy in the second picture, the appearance of the dog in the fifth picture and the presence of the girl in the seventh picture. Table 5 shows how the initial switch was made to these characters as they came into focus. Occasionally, the reference was not switched to these characters when they were introduced, and they were simply not mentioned specifically throughout the narrative. This was rare, and where it did happen, it was largely in the four-year old group.

Table 5: Introduction of secondary characters in Book 1

	Adults	8 y.o.	6y.o.	4y.o.
Noun phrase	54 (91.5%)	48 (80%)	52 (89.7%)	30 (56.6%)
Pronoun	5 (8.5%)	12 (20%)	6 (10.3%)	13 (24.5%)
Ellipsed	-	-	-	10 (18.9%)

In comparison, the secondary character in Book 2 was always introduced with a noun phrase, with the exception of two of the four-year olds, one of whom used a pronominal form, while the other omitted any mention of the woman. It is postulated that the difference in the results between the two books was influenced by two factors; firstly, the first book is more complex in that new characters appear on pages two (the children) and five (the dog) and seven (where the girl appears alone with the dog), whereas in the second book the only new character to be introduced does not appear until page five. Secondly, in the first book the pronominal references to the secondary characters were to the children on the second page, or the girl on the seventh page who had already been introduced, although not as an individual. Coming on only the second page, the pronominal introduction to the children was probably deictic since the subjects would not necessarily have grasped that the pictures constituted a story.

Comparison of the way definite or indefinite noun phrases were used to introduce the dog in the first book and the woman in the second book, and whether they were in subject or object position is also revealing. Tables 6 and 7 show how the secondary characters were introduced in the two books:

Table 6: Introduction of 'dog' in Book 1

	Adult	8 y.o.	6 y.o.	4.y.o.
In object position	5 (25%)	2 (10%)	-	4 (20%)
In subject position	15 (75%)	18 (90%)	20 (100%)	14 (70%)
No mention	-	-	-	2 (10%)
Indefinite article	11 (55%)	4 (20%)	4 (20%)	4 (20%)
Definite article	9 (45%)	16 (80%)	16 (80%)	14 (70%)
No mention	-	-	-	2 (10%)

Table 7: Introduction of secondary character in Book 2

	Adults	8 y.o.	6 y.o.	4 y.o.*
In object position	10 (100%)	8 (80%)	6 (60%)	3 (30%)
In subject position	-	2 (20%)	4 (40%)	6 (60%)
Indefinite article	10 (100%)	6 (60%)	8 (80%)	2 (20%)
Definite article	-	4 (40%)	2 (20%)	6 (60%)

* one four-year old did not mention the woman at all, and one used only a pronominal form.

The results indicate that even the oldest group of children was not using indefinite articles in the same way as the adult group. In Book 1, only 20% of the children in each group used an indefinite noun phrase at the arrival of the dog, whereas 55% of the adults did. But the results also exhibit clear differences in the use of articles in the first and second book. There is a high incidence of definite article usage for initial introductions of the dog in Book 1, whereas the human secondary character in Book 2 is most frequently introduced with an indefinite article by all groups with the exception of the four-year olds. It was expected that the four-year olds would use articles deictically, in line with the deictic nature of their narratives in general (pronouns were also used frequently and deictically), and this appears to have been borne out. Certainly, definite and indefinite articles function in language in a variety of ways, and the child's acquisition of these functions has been extensively investigated by Karmiloff-Smith (1979). In very general terms, she has suggested that for children under five or six, definite articles are used deictically, while indefinite articles are used in a naming function. However, following Karmiloff-Smith's functional approach to determiner acquisition, it is postulated that for both six and eight year olds in relating a prompted narrative, the indefinite article tends to have a nominative function, while the definite article has a deictic function. Thus the indefinite article is used more frequently in introducing the woman character in book 2 because her passive role means she must be specifically named; the higher incidence of definite initial reference to the dog in Book 1 results from the animal's active nature. This allows the child to assume that in sharing the same visual field the listener too must be aware of the animal thus eliciting a deictic functor from the child.

In an earlier study, Warden (1976) suggested that it was not until around the age of nine that children were fully competent in their use of definite and indefinite articles, and Hickman (1980), following a developmental study of the way referents are created in discourses has suggested that this might result from an inadequate knowledge of how to set up and maintain anaphoric relations in discourse, a skill she suggests is not completed until around ten years of age. The results of the present study appear to support this.

The difference in the introductions of the secondary characters in subject or object position is an effect partially explainable through reference to the details of the story. The appearance of

the dog is a surprise, and his role is unambiguously active and is difficult to express succinctly if the dog is to be kept in object position (e.g. the ball went wild and landed near a passing dog). On the other hand, the role of the secondary character in Book 2 is more passive, at least initially, and she is consequently much easier to introduce in a passive role in object position. This active versus passive role can effect the nature of the elicited narrative. An active secondary character is able to usurp the utterance initial position in the sentence and thus make the maintenance of a thematic subject strategy more difficult. Since the passive secondary character is introduced in object position, when she subsequently becomes active in the next picture, it is very simple to make anaphoric reference to her in the next utterance with a pronoun in utterance initial position. Thus the maintenance of a thematic subject strategy can be crucially influenced by the active or passive natures of the secondary characters, and additional factors bearing on children's use of thematic subject strategies are discussed in the following section.

4.2 Switching and maintaining reference

This section examines how the subjects maintained reference once this had been established, and how they switched reference to another subject when this became necessary. In the discussion of her results, Karmiloff-Smith (1981) concentrates on the way the utterance initial position is filled for each picture. In examining these positions, she is able to develop a thematic subject constraint to the effect that children around the age of six will attempt as far as possible to always fill this position with the character they consider to be the thematic subject. In the present study, in the first book the group of children in the second picture were frequently referred to in the first few pictures and could be thought of as the thematic subject. Most six-year olds were careful to reestablish the children as subject again with a noun phrase after the appearance of the dog, while most eight-year olds did not, perhaps assuming that they were sufficiently well established as thematic subject. The adults tended not to refer to these children after the fourth picture. In referring to additional characters, one strategy is to use a full noun phrase for every mention of non-thematic subject, and the eight-year olds tended to do this with the dog, as did the six-year olds to some degree. With all groups, reference to the dog, whether by full noun phrase or pronoun, was always clear (i.e. the anaphor always has a clear referent). But referring back to Table 6 above, note that all the six year olds and most of the eight year olds introduced the dog in utterance initial position — the position which it was claimed would be generally reserved for the thematic subject. Once again, it is suggested that this was a result of the story depicted in the book with the dog being a very active character and thus very difficult to introduce in any other position in the sentence.

It was the second book, however, which was designed specifically to encourage a thematic subject strategy. In her 1981 paper, Karmiloff-Smith focussed on the narratives elicited from one specific book (four were used altogether) and Book 2 was developed to elicit comparable results. Both books encouraged the development of a thematic subject, both had a secondary character of the same sex as the first character participating briefly during the episode and both then returned to the primary character as sole protagonist. However, there were also differences. Karmiloff-Smith had fewer pictures (six instead of ten), her secondary character was introduced earlier (the second instead of the fourth picture) but never became an active participant, while in this study the secondary character was active briefly while the primary character was passive. There were in addition differences in the sex of the characters and the size of the objects which formed the connection between the two characters, but these are not discussed here because they do not bear on the results presented in this study.

In Book 2 of this study, the girl was the clear thematic subject, with the secondary character being introduced in the fourth picture. Therefore, in line with Karmiloff-Smiths constraint, it was expected that the youngest group would use pronouns deictically, and while most four-year olds introduced the secondary character with a nominal, they did not do this in order to set up a linguistic referent. Having introduced the woman, most then used pronouns deictically rendering their narratives ambiguous without reference to the picture prompts as illustrated in examples 1 and 2 (.. indicates hesitation):

- (1) Boy 4;3 “.. and reading her book (i.e. the woman) .. and/and sneaking off her bag (i.e. the girl)
- (2) Boy 4;2 “.. she’s (i.e. the girl) .. sitting on the seat .. she’s (i.e. the girl) sitting on the seat airplane. she’s (i.e. the woman) giving something to a girl, now she’s (i.e. the woman) looking at a book.. now she’s putting the thing up high

The six-year olds were expected to maintain the girl in sentence initial position, with the eight-year old demonstrating more flexibility. In fact, Tyler’s (1984) findings that the thematic subject constraint was not as dominant as had been previously thought were supported by the results from this study, but for different reasons. All six-year olds placed the older woman in utterance initial position with a full noun phrase in either the fourth, fifth or sixth picture, rather than always maintaining the thematic subject in utterance initial position as Karmiloff-Smith (1981) had suggested. But more importantly, five of the six-year olds also pronominalised the secondary character in this position, something none of Karmiloff-Smiths level two subjects did, as in the example below:

- (3) Boy 6;6 “.. the/the lady got something out of her purse .. she got some sweets out of her purse .. the girl got some sweets

In maintaining and switching reference in their narratives the six year old used a number of strategies. Firstly, they used a full noun phrase as well as pronominal forms for both the major and the secondary protagonist (see example 4):

- (4) Girl 6;4 “.. and then another lady comes in and she’s got a book with her .. and then the little girl’s sitting down .. and the lady’s looking in her bag and the little girl is still sitting down wondering what to do .. and then the lady gives her .. some sweets and the little girl looks happy .. then she takes one and she says “thank you” .. then she pu/.. then she’s .. eats it and the li/and the/and she’s .. the lady’s looking at the book”

However, while this child was careful to reestablish the linguistic referent before pronominalising the girl, four of the five subjects who used this strategy did not, presumably assuming the girl to be adequately established as thematic subject, a strategy used by Karmiloff-Smith’s level three subject (the older children, but not her subjects of around this age who were fell into her level two stage. For example, see 5 below:

- (5) Boy 6;4 “..and there’s a granny up/and there’s a granny there and she (i.e. the girl) put her luggage in her net .. and she sits down .. the granny looks in her basket .. and she finds some/and she finds some sweets for her (i.e. the girl) ..“

Secondly, they used a pronominal for the woman but full nominals for the girl in the utterances where both were mentioned, as in example 5:

- (5) Girl 6;4 “.. er the lady’s looking for something in her bag.. um .. um she’s giving the girl .. some blues .. and .. um .. the girl’s taking one”

Thirdly, a couple avoided pronominals altogether using full noun phrases to refer to both characters as shown in example 6:

- (6) Boy 6;5 “.. and now the little girl’s looking at that girl/at that woman and the woman’s trying to get something .. the woman gave the little girl some sweets .. and the little girl is picking one of them/the sweets up .. and the woman .. is holding her bag of sweets”

The three strategies outlined above indicate that the six-year olds were generally concerned with their use of referring expressions, and overall narrative organisation, but the results suggest they were not using a thematic subject strategy in the same way as Karmiloff-Smith found her subjects were. The self-repairs of this group provide additional support for this.

Self-repairs in conversational speech may result from the listener giving some indication that a breakdown in communication has occurred. A number of studies have investigated the cues that prompt repairs, and the types of repairs used (see Konefal & Fokes 1983 for a brief review of some of these). Repairs can also occur, however, as a result of the speaker’s own monitoring of his or her speech without any indication from the listener that a miscommunication has taken place, and examination of these types of speech correction can provide important insights into speech processes. For Karmiloff-Smith, the self-repairs of her subjects were a crucial argument in supporting her thematic subject constraint, and such errors also provide linguistic evidence of a burgeoning cognitive ability to organise spans of discourse.

The most revealing self-repairs in this study were those which concerned referential expressions. While such repairs constituted very few of the repairs of adults and four- year olds, they were quite a large percentage of the repairs of the two other groups, as can be seen in Table 8 below. The first line shows the total number of self-repairs, the second shows the number of self-repairs related to the maintenance of cohesion through the use of noun phrases or pronouns and the last line gives the percentage of this kind of self-repair in relation to the total. Self-repairs are counted as those instances where the subject backtracks in order to correct her/himself; hesitations are not counted.

Table 8: Self-repairs

	Adults	8 y.o.	6 y.o.	4y.o.
(a) Book 1				
Total self repairs	26	57	52	25
Referential SR’s	3	12	19	2
%age of total	11.5%	21.0%	36.5%	8.0%
(b) Book2				
Total self-repairs	6	36	20	19
Referential SR’s	1	9	7	3
%age of total	-	25.0%	35.0%	15.7%
(c) Both books				
Total self-repairs	32	93	71	4
Referential SRs	4	21	26	5
%age of total	12.5%	22.6%	36.1%	11.4%

The figures show clearly that from the incidence of repairs to referring expressions that the concerns of the six-year old group were significantly greater than those for the adult group

and the eight-year old group. While the latter were still making more referential repairs than the adults, the results suggest they were more confident in this area than the younger group. Karmiloff-Smith argued that at level two (ie. around the age of six) subjects used self-repairs to maintain thematic subject; for the subjects of this study, however, while this was occasionally the case, it was not a priority, and referential self-repairs were used most frequently simply to clarify the referent where this might otherwise be ambiguous or to correct an error. Self-repairs were used only infrequently to maintain the thematic subject in utterance initial position, however, they do nonetheless support the proposition that children at around this age are highly concerned with making clear and unambiguous reference to the characters they are talking about in their discourse. Some examples of these types of repairs are presented below:

Book 1

Boy 6;3 “.then .. he/mmlshe got the ball and took it back to the rest of them”

Girl 6;4 “..and she’s lealand the girl .. is leaning ..“

Girl 6;8 “.and then these little g/two girls were going to try and catch the ball

Boy 6;2 “..and the/a dog

Book2

Girl 6;4 “.then she pul.. then she’s .. eats it and the li/and the/and she’s .. the lady’s looking at the book”

Boy 6;2 ..she’s go/go/the lady’s got

Girl 6;4 “..and the li/and the/and she’s .. the lady’s

These results support Tyler’s (1984) view that Karmiloff-Smith’s formulation of the thematic subject constraint was too strongly stated. It is posited that the conflicting results of the two studies can be explained by the differences in the materials that were used. This is an important point because it means that the structural and relational parameters of the story prompts can apparently strongly influence the content of the data collected. This was a small study involving only eighty subjects, and consequently these results can only be considered to show preliminary indications, but they do suggest that careful consideration of the design of prompt materials used to elicit the experimental protocols is essential if definitive conclusions are to be reached. It is postulated that further investigation of the thematic subject constraint would show that this is not a strong feature of the language of children at a certain age, but that the results which led to its formulation were possibly an artifact of the design of the prompts used in that particular experiment.

Although definitive conclusions are clearly premature it seems reasonable to postulate that certain specific story design factors critically influence the results of such prompt protocols. The factors include: length and complexity of story; activities of the main character(s), human/animacy of secondary character, active/passive entrance of secondary character, and the number of major protagonists. It may be possible to design an analysis procedure using these factors as predictors of the incidence of certain linguistic features in the narratives. For example, the entrance of an active secondary character may promote initial mention in subject position; definite articles may be used by children to introduce animal characters more frequently than human characters; alternatively it may be the active role of the character that encourages definite article usage. Bamberg (1986) found that in a story in which a boy and a dog appeared throughout, his child subjects used different referential strategies to refer to the boy and to the dog.

The nature of narrative elicitation through the use of prompts is such that many parameters are available which can be changed and which must consequently be strictly controlled. In attempting to make viable predictions concerning the acquisition and development of

particular linguistic skills including story organisation, it is essential to know exactly how the prompt materials are going to influence the resultant narratives. It is for this reason that it is important to have an adult group from whom to elicit narratives using the same prompts as those used with the younger age groups. The analysis of the narratives they produce provides a measure with which the narratives of the younger groups may be compared.

REFERENCES

- Bamberg, M. 1986. A functional approach to the acquisition of anaphoric relationships. *Linguistics* 24. 227-284.
- Bavin, E. 1987. Anaphora in Children's Warlpiri. *Australian Review of Applied Linguistics* 10 (2). 1-11.
- Bavin, E. & Shopen, T. 1985. The development of narrative by Warlpiri children. *Berkeley Linguistics Society* 11. 1-13.
- Bennet-Kastor, T. 1983. Noun phrase and coherence in child narrative. *Child Language* 10. 135-149.
- Botvin, G. & Sutton-Smith B. 1977. The development of structural complexity in children's fantasy narratives. *Developmental Psychology* 13. 377-388.
- Chafe, W. 1980. *The Pear Stories. :Cognitive, Cultural and Linguistic Aspects of Narrative Production*. New Jersey: ALEX Publishing Co.
- Hickman, M. 1980. Creating referents in discourse: a developmental analysis of linguistic cohesion. In Kreiman, J. & Ojeda, A. (eds.), *Papers from the parasession on Anaphora*. Chicago: Chicago Linguistic Society.
- Hudson, J. & Nelson K. 1983. Differentiation and development in children's event narratives. *Papers and Reports on Child Language Development* 23. 50-57.
- Karmiloff-Smith, A. 1979. *A Functional Approach to Child Language: A study of determiners and reference* . Cambridge: Cambridge University Press.
- Karmiloff-Smith, A. 1981. The grammatical marking of thematic structure in the development of language production. In Deutsch, W. (ed.), *The child's construction of language*. London: Academic Press.
- Karmiloff-Smith, A. 1983. Language development as a problem-solving process. *Papers and Report on Child Language Development* 22. 1-22.
- Karmiloff-Smith, A. 1985. Language and cognitive processes from a developmental perspective. *Language and Cognitive Processes* 1 (1). 61-85.
- Konefal, J. & Fokes, J. 1984. Linguistic analysis of children's conversational repairs. *Journal of Psycholinguistic Research* 13 (1). 1-11.
- McGann, W. & Schwartz, A. 1988. Main character in children's narratives. *Linguistics* 26. 2 15-233.
- Mandler, J.M. & Johnson, N.S. 1977. Remembrance of Things Parsed: Story Structure and Recall. *Cognitive Psychology* 9. 111-151.
- Mandler, J.M. 1978. A code in the node : The use of a story schema in retrieval. *Discourse Processes* 1. 14-35.
- Maratsos, M.P. 1976. *The use of definite and indefinite reference in young children : an experimental study of semantic acquisition*. New York: Cambridge University Press.
- Petersen, C. & McCabe A. 1983. *Developmental Psycholinguistics: three ways of looking at children's narrative*. New York: Plenum Press.

- Silva, M. 1984. Developmental Issues in the Acquisition of Conjunction. *Papers and Reports on Child Language Development* 23. 106-114.
- Slobin, D. I. 1985. Why study acquisition cross-linguistically. In Slobin, D.I. (ed.), *The crosslinguistic study of language acquisition*. Hillsdale, NJ: Lawrence Erlbaum.
- Sutton-Smith, B. 1981. *The folkstories of children*. Philadelphia: University of Pennsylvania Press.
- Tyler, L. 1984. Integration of information during language comprehension: a developmental study. *Papers and Reports on Child Language Development* 23. 125- 133.
- Warden, D.A. 1976. The influence of context of children's use of identifying expressions and references. *British Journal of Psychology* 67. 102-112.
- Wigglesworth, G. 1985. *An examination of children's language development through the study of narrative discourse*. MA (Preliminary) thesis, La Trobe University.