

REFERENT TRACKING STRATEGIES OF YOUNG CHILDREN IN EXTENDED NARRATIVE DISCOURSE

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ABSTRACT

Introducing, tracking and differentiating between the various characters in a story are essential features of storytelling. This paper reports on a study in which narratives were elicited from ten female and ten male subjects at each of four ages: six, eight, ten and adult, to explore the development of these skills. The stories were elicited by using a twenty-four page picture book in which two main characters, a dog and a boy, search for a third, a frog.

Across both age and gender groups it was found that while references were switched and maintained in similar proportions over the whole story, the use of nouns or pronouns for these functions varied with adults tending to use more nouns where the subject of the clause was involved a switch of reference from the subject of the previous clause, and more pronouns where the subjects of consecutive clauses were the same. Examination of the narratives of the four and six year olds suggests that by the age of six a number of subjects were using a thematic subject strategy to organise their narratives, although its use was influenced by the complexity of specific episodes in the story. A thematic subject strategy was rarely evident in the narratives of the four year olds.

1. Introduction

Children's narrative monologues have been shown to be a rich data bank for studies in children's acquisition of a variety of linguistic categories and structures. In addition, developmental changes in the structure and organisation of the narratives gives some insight into the developing cognitive abilities of the children. The last decade, in particular, has seen a wealth of studies (for example, Hickman 1980, Karmiloff-Smith 1981, 1983; Slobin 1987, 1988, Berman & Slobin 1988, Bamberg 1987) which have focussed on narratives elicited under controlled conditions where children relate the story from a series of pictures, particularly designed or chosen for the task. In recent years a number of studies have been conducted on narratives elicited using 'Frog, where are you?' (Mayer 1969), a picture book first used by Bamberg (1987) to elicit narratives from German-speaking children. This book consists of twenty four pictures which depict the story of a little boy who is initially shown with his dog admiring a frog in a jar. The story continues with the frog escaping from the jar while the boy and the dog are asleep, and leaving through the open window. The story then focuses on the search which is undertaken by the boy and the dog for the frog, a search in which they encounter various animals who contribute to a number of mishaps which befall them. Finally, thrown from a cliff by a deer, the boy and the dog find themselves in a pool where they hear and then find some frogs, and they start their journey home with one of the frogs. A detailed outline of the story is given in the Appendix.

This story is particularly attractive as a prompt for eliciting narrative since it provides a substantial test of the child's narrative skills, both in having to maintain the search-motif over a relatively long period, and in having to describe a range of events which befall the protagonists. This book has now been used to elicit data in a number of languages, and comparisons have been made; these suggest that while there are cross-linguistic similarities in the development of organising skills, the typological features of the language can influence the acquisition of specific linguistic features (Slobin 1987, 1988). While much of the analysis undertaken has considered tense and aspect, the book was originally chosen for the Bamberg

(1987) study which focused on the child's developing ability to manipulate the nominal and pronominal system of German in tracking referents through a narrative. The book is particularly suited to this kind of analysis since the narrator is required to track two protagonists throughout the story, where both are undertaking different activities, on many occasions simultaneously. In addition to switching and maintaining reference to the two main characters, the narrator must also introduce and refer to a variety of subsidiary characters who participate briefly, but actively, in the train of events.

Karmiloff-Smith (1981,1983) had previously examined developmental aspects of children's pronominal usage in discourse and found that in the narratives of children over about the age of six a thematic subject strategy was frequently used to organise the narrative. This was typified by the child choosing a particular character as the thematic subject, and subsequently referring to this character pronominally almost exclusively, but particularly in utterance initial position. This work was undertaken with French and English speaking children with narratives elicited from a short six page picture book. This finding has since been supported by Bavin (1987) who also found Warlpiri-speaking children were unable to structure their narratives with a thematic subject until about the age of six. From a methodological point of view, Bavin also found that a longer picture book (12 pages in this case) allowed the children to become more involved with the story and consequently to produce more cohesive narratives. This is interesting when related to the findings of Bamberg (1987) who analysed the narratives elicited from German-speaking children from the 24 page long "Frog Story" outlined above. Bamberg found evidence of children as young as three and a half using a thematic subject strategy, and in addition the strategy was still used by some children in his oldest age group - ten - suggesting either that it is a strategy used by some children over a long period, or that there is variation in the age at which children first employ it. However, Bamberg's study used a different methodology from the other studies, and tapped recall rather than spontaneous organisational abilities.

In this paper I investigate further the thematic subject strategy. It reports on a study in which narratives were elicited from eighty children in four different age groups, and twenty adults, using the Frog Story as prompt. If the methodology is the critical variable then we should be able to find evidence of a thematic subject strategy emerging under certain conditions in English to support the findings of Karmiloff-Smith.

2. Methodology

The narratives were collected from five different age groups, four, six, eight, ten and adult. There were twenty subjects in each age group, ten male and ten female. Adult subjects were all students at La Trobe University studying first year humanities subjects; the child subjects were all students at a primary school in an outer Melbourne suburb. All subjects were monolingual English speakers. Subjects were coded according to age, gender and subject number. Thus 4F5 was a four year old female, subject number 5.

Experimental protocol was as follows: subjects were seated opposite the experimenter so that the experimenter could not see the pictures, and the subjects were asked initially to look through the book at every page in order to familiarise themselves with the story. Following this, they were asked to turn to the first page of the book and to relate the story to the experimenter. All narratives were tape-recorded and a tap on the microphone indicated page turns by the subject. All subjects turned pages by themselves when they were ready to do so with the exception of a few of the four year olds who required some help.

2.1 Coding the data

In After transcription, each narrative was divided into clauses. Clauses were defined according to the criteria used by Berman et al (1988) for previous data elicited from the same prompt.

Following this a coding system was designed to account for the form and function of every animate noun phrase which appeared in the narrative. This coding system was designed not simply to distinguish switch reference from reference maintenance occurrences, but also to capture the relationship between, for example, subjects separated by an object noun. Thus, it attempted to capture the relationship between a pronoun and its antecedent, in that, for example, a pronominal subject can generally unambiguously and appropriately have as its antecedent either the subject or the object of the previous clause. Similarly, it is possible to refer to the object of a clause with a nominal and then refer to it again one or two clauses later with a pronominal without there being any doubt as to the appropriate antecedent for it.

Each noun phrase was coded according to the following four dimensions:

1. the referent of the noun phrase. Here the possible referents were (i) the boy (BOY), (ii) the dog (DOG), (iii) the frog (FROG), (iv) the boy and the dog acting as a joint subject (BOY/S), and (v) all the other peripheral characters grouped in together (OTHER) or (vi) a dummy subject such as 'there' or 'it' (\emptyset);
2. the function of the noun phrase: subject (SUB) or object, including the object of a phrasal verb (OBJ);
3. the form of the noun phrase: nominal (N) or pronominal (P) (zeros were counted included with pronominals in the first instance), or a dummy subject, 'it' or 'there' (\emptyset);
4. This category depended upon the coding for category 2. If the noun phrase was coded as a subject in category 2, then category 4 coded it as either a different subject to the subject of the previous clause (DS), or the same as the subject of the previous clause (SS), e.g. (from AF

- (1) after Jimmy grew tired
Jimmy: BOY.SUB.N.DS
he went to bed
he: BOY.SUB.P.SS
frog wasn't tired yet
frog: FROG.SUB.N.DS
so he climbed out the bottle
he: FROG.SUB.P.SS

Where the subject was different from the subject of the previous clause but the same as the object of the previous clause it was coded as DIFSSO (from 8M4):

- (2) a deer started/... he got caught on a deer
he: BOY.SUB.P.DS
deer: OTHER.OBJ.N.DO
and a deer started running
deer: OTHER.SUB.N.DIFSSO

If the noun phrase in category 2 was coded as an object, then in category 4 it was coded as either a different object (DO) (where this object was different to the one occurring in the last two clauses, or where no object had occurred for at least two clauses), or as the same object (SO) where the object was the same as the last occurring object which must have occurred no more than two clauses previously, e.g. (from 10F3):

- (3) so the dog could/he could find the .. frog
he: BOY.SUB.P.SS
frog: FROG.OBJ.N.DO
 but no they couldn't find the frog
they: BOY/S.SUB.P.DS
frog: FROG.OBJ.N.SO

Alternatively, it was coded as OSSP meaning the object was the same as the subject of the previous clause, e.g. (from AM3):

- (4) and he's crying out for it
he: BOY.SUB.P.SS
it: FROG.OBJ.P.SO
 and his dog accompanies him
dog: DOG.SUB.N.DS
him: BOY.OBJ.P.OSSP

Or OSSC was used meaning the object was the same as the subject of the same clause, e.g. (from 10M9):

- (5) and it took him/he took it with him
he: BOY.SUB.P.SS
it: OTHER.OBJ.N.SO
him: BOY.OBJ.P.OSSC

Counting was undertaken by a computer programme which counted each instance of every category. As dummy subjects were not counted past the first instance (i.e. they were noted, but not categorised further) there were six options for subjects and eight options for objects, for each of the five categories of characters giving a total of 70 options altogether.

3. Results

3.1 Finding the thematic subject

The first task is to determine which character, if any, is the most likely candidate for a thematic subject. Bamberg argues (1987) that the boy, the dog or the boy and the dog are the three contenders for this function, but found that the boy was always assumed to be the thematic subject. In order to assess whether or not a thematic subject was present, the data were examined to determine whether any of the dog, the boy, or the boy and the dog as plural subject, were referred to substantially more than any others.

Table 1 summarises the number of references to the boy singly, the dog singly, and the boy and the dog as a plural subject.

TABLE 1: References to the boy vs the dog vs the boy and the dog

	4	6	8	10	A
Total ref	580	712	718	771	992
Boy refs	345	372	411	456	541
%boy	59.48	52.25	57.24	59.14	54.54
Dog refs	178	226	192	206	283
%dog	30.69	31.74	26.74	26.72	28.53
Plural reference	57	114	115	109	168
% plural refs	9.83	16.01	16.02	14.14	16.94

Table 1 shows that the boy received a higher percentage of references overall than either of the other two candidates, and thus appeared to be the most likely candidate for thematic subject. However, a thematic subject strategy is characterised not only by frequency of mention, but also by pronominals being used to both switch and maintain reference (Karmiloff-Smith 1981, 1983; Bamberg 1987). Table 2 shows use of proportion of pronominal references used for (1) all characters, (2) the boy, (3) the dog and (4) the boy and the dog.

TABLE 2: Pronominal usage to the boy vs the dog as a percentage of total references to each of these characters

ALL	4	6	8	10	A
Total refs	839	1034	1092	1172	1529
Pro refs	415	428	469	518	688
% pro	49.46	41.39	42.95	44.20	45.00
BOY					
Total refs	345	372	411	456	541
Pro refs	264	233	249	302	325
% pro	76.52	62.63	60.58	66.23	60.07
DOG					
Total refs	178	226	192	206	283
Pro refs	37	32	26	27	81
% pro	20.79	14.16	13.54	13.11	28.62
PLURAL					
Total refs	57	114	115	109	168
Pro refs	48	102	95	92	140
% pro	84.21	89.47	82.61	84.40	83.33

The percentage of pronominal references to the boy was noticeably higher than those to the dog. However, the fact that the joint reference also received a high percentage of pronouns suggests that it too may be involved in the thematic subject strategy.

Tables 3 and 4 examine pronominal function, and show that from the earliest age children appeared to avoid using pronominals to switch reference to the dog, suggesting perhaps that the children were aware of the appropriateness of switching reference with a nominal. For the boy, on the other hand, pronouns were used with high frequency for switch reference with all the child groups. Where the plural reference to the boy and the dog was concerned, although the total number of references was low, the percentage of pronouns used for this function was high, particularly with respect to the six year olds.

TABLE 3: Switching reference to the boy vs the dog

BOY	4	6	8	10	A
Total SW	145	190	191	208	130
Total SW Pro	90	81	67	83	45
% SW Pro	62.07	42.63	35.08	39.90	19.57
DOG					
Total SW	126	161	140	152	106
Total SWPro	8	6	2	0	1
% SW Pro	6.35	3.73	1.43	0.00	0.56
PLURAL					
Total SW	21	45	50	26	51
Total SW Pro	14	38	31	15	26
% SW Pro	66.67	84.44	62.00	57.69	50.08

In Table 3 there is a notable developmental trend observable in the data for the boy. For the four year olds, a pronominal was used for switching reference over 62 percent of the time, while an overall decrease with age ended up with adults using pronominals for this function less than 20% of the time. However, pronominal usage for switching reference to the dog was rare even with the youngest children, indicating that they were aware that a nominal was the appropriate form for this function. Table 4 presents use of pronouns for reference maintenance:

TABLE 4: Maintaining reference to the boy vs the dog

BOY	4	6	8	10	A
Total MA	200	182	220	248	311
Total MAPro	174	152	182	219	280
% MAPro	87.00	83.52	82.73	88.31	90.03
DOG					
Total MA	52	65	52	54	106
Total MAPro	29	26	24	27	80
% MAPro	55.77	40.09	46.15	50.00	75.47
PLURAL					
Total MA	36	69	65	83	117
Total MAPro	34	64	64	77	114
% MAPro	94.44	92.75	98.46	92.77	97.44

From this table it is clear that, firstly, all groups maintained reference to the boy considerably more than to the dog. In addition, when they did this, all groups, but particularly the children, were more likely to maintain reference with a pronoun to the boy than they were to the dog.

Summarising the finding from tables 1-4 it was found that the boy was referred to twice as much as the dog, and was referred to much more with pronouns than the dog, particularly across all the younger groups. In addition, when switching reference to the dog, all subjects showed an extremely strong preference for using a noun, whereas this was not unambiguously the case with the boy. A clear developmental progression toward using nominals for this function was observed, with the youngest group showing a strong preference for using pronouns. Finally, Table 4 showed that while pronouns were strongly preferred to maintain reference to the boy by all groups, the children used roughly equal proportions of nouns to pronouns for the dog.

These results suggest that if there is a thematic subject strategy being used, the boy is singled out as the thematic subject. Evidence for this is provided by the frequency with which pronominals are used for both reference maintenance and reference switching functions, in line with the findings of Bamberg and Karmiloff-Smith.

3.2 Referring to the boy

Having determined that there is some evidence of use of a thematic subject strategy where the boy is the thematic subject, this section considers the question posed earlier, namely whether this strategy was used by the youngest group, or whether it was first apparent in the narratives of the six year olds. While data was collected from children aged four to ten, this investigation will focus on the narratives collected from the four and six year olds groups, considering the adult data for the purposes of comparison. The eight and ten year old groups will not be discussed further, although it should be pointed out that there was evidence of a thematic subject strategy being used by some of the subjects at these ages.

A close examination of the way nouns and pronouns were distributed for the boy for the two functions of switching and maintaining reference, suggested that six alternative strategies were being used. These are categorised 1 - 6 in Table 5, together with the number of subjects who used each strategy for each of the three age groups under consideration:

TABLE 5: Referencing strategies

Category	Strategy used to refer to boy	4	6	A
1	Pro used to switch and maintain reference	12	5	1
2	Noun or pro to switch, pronouns to maint.	3	6	0
3	Noun & pro equally distr. across functions	1	0	0
4	Nouns used for both functions	1	0	0
5	Noun for switching, noun & pro for maint.	1	1	1
6	Noun for switch, pronoun for maintenance	2	8	18

I examine initially the adult narratives, to see how the adults referred to the boy. Table 5 shows that for eighteen adults, there was a clear preference for switching reference to the boy with a noun while maintaining reference to him with a pronoun. For the remaining two adults, two different strategies were used. One, AF3, used pronouns to refer to the boy almost exclusively for both functions (only one nominal was used to switch reference) and she then referred only twice in her entire narrative to the dog. This adult's narrative, in fact, shows very strong features of a thematic subject strategy in the use of pronouns to switch and maintain reference to the boy. However, in fact, this subject focused on the activities of the boy, only mentioning the other character if their actions specifically determined the boy's activities. The two mentions of the dog occurred once when it fell out of the window, thus carrying forward the plotline to centre the search outside and once when the boy tells the dog to be quiet. This occurs at picture 13a, and the picture would be hard to describe without reference to the dog, who is the object of the boy's attention. The following is an example of this subject's narrative:

- (6) at/while he was looking out the window
 his other little pet dog climbed out the window so he followed
 and climbed Out the window too
 he went looking around his house
 calling out for the frog

The other adult, AM4, while using nouns to switch reference to the boy, used both nouns and pronouns to maintain reference reflecting a particularly careful style in an elaborate and complex narrative. Overall, the adults strongly preferred to use a noun for switching and pronoun for maintaining reference to the boy, a strategy which Bamberg has termed "the anaphoric strategy".

Table 5 shows that of the six year olds, eight appeared to adopt an anaphoric strategy (Category 6), showing a clear preference for switching reference with a nominal, and maintaining it with a pronoun. One subject fell into category 5 where nouns were used both to switch reference and maintain reference, although pronouns were also used for this latter function. Six subjects fell into category 2 where switches of reference were marked fairly evenly with nouns or pronouns, while pronouns were favoured for reference maintenance, and five subjects preferred pronominal reference to the boy for both functions.

Turning to the four year olds, only two subjects appeared to adopt an anaphoric strategy, but one of these only switched reference a total of three times to the boy, twice with a noun, once with a pronoun. One subject used nouns to switch reference but used both nouns and pronouns to maintain reference to the boy. The subject in Category 4 used a nominal strategy where nouns are used to switch reference and maintain reference to the boy. Three subjects

adopted a strategy of using nouns or pronouns to switch reference, whilst maintaining reference with pronouns, and the majority of children in this group - twelve - showed a strong preference for referring the boy with a pronoun, irrespective of function.

The next sections examine the individual narratives of some of the subjects in the six and four year old groups. I concentrate on those which fall into the first two categories presented in Table 5. These categories are the ones which suggest the most likelihood of a thematic subject strategy being used, evidenced by the high use of pronouns for referring to the boy, particularly when switching reference. Thus the narratives of 15 subjects in the four year old group, and eleven in the six year old group, are examined in the following sections.

3.3 The six year olds

Table 6 details the breakdown of forms and functions used in referencing the boy by those six year olds who fell into category 1 in Table 5:

TABLE 6: **Form/function pairing references to the boy in the narratives of the six year old in category 1**

Subj	No	Total Cls	Total refs to boy	Noun for switch	Pro for switch	Noun for maintenance	Pro for maintenance
6F3:	E	44	25	4	11	0	10
6F7:	R	50	24	3	11	0	10
6F5:	K	35	24	3	5	0	16
6F6:	C	23	10	2	4	1	3
6F10:	A	33	17	3	6	1	7

The narratives of these children subdivided into three groups. Two, E. and R. used large numbers of pronouns to switch and maintain reference, with a few nouns used to switch reference. One (K.) used more pronouns than nouns to switch reference, but generally seemed to adopt a strategy of maintaining reference pronominally to the boy as much as possible and to avoid switching reference. Finally, two (C. and A.) both used pronouns for both functions, but used occasional nominals for both as well.

Detailed examination of the narratives of these subjects revealed evidence of a thematic subject strategy used by all subjects for at least some part of their narrative. E. used this strategy throughout her narrative. She introduced the boy nominally in the first clause, and maintained the boy as thematic subject until picture six:

- (7) and **he**'s shouting something out the window
 and his dog's got the bucket on his head
 the dog jumped out the window
 and **he** had to jump out the window to get him

From page six, E. focused on the dog for a brief period, with five references to the dog in a total of eight clauses. E. used no plural references to the boy and the dog as a joint subject, and used only one pronominal to maintain reference to the dog, with all other references (15) to the dog being nominal for both switching and maintaining reference:

- (8) and **the dog** jumping up there and up and down
 and **the dog's** about to go out there get it but it fell down
the boy went out there

R. did not introduce the boy until clause 4, and then did so pronominally, using pronominal references to switch reference to the boy until the dog falls out of the window. She then focused on the activities of the dog, and the dog apparently took over briefly as thematic subject. In the following example, bold references are to the dog:

- (9) and **the dog**'s sitting down
and then **he** finds the beehive
and **he**'s looking at it
and the boy's looking through a hole
and then **he** goes to the branch
and the boy is sitting down

From this point on, she reverted to the boy as thematic subject, with a noticeable reduction in references to the dog from this point. Thus both these subjects generally foregrounded the boy as thematic subject, but for brief periods the dog became the focus - on both occasions at points where the activity was considerable, and where the dog's activities were more continuous, while the boy's activities, if they were to be foregrounded, required more detailed description since his activities changed with each picture, and were more involved than the those of the dog.

K. introduced the boy nominally, and then referred to him pronominally, irrespective of function, until the dog fell out of the window, where another nominal was used to switch reference back to him. From this point, once again, all subsequent switch references were pronominal, until the boy and the dog land in the pond and the protagonists attention is turned to the new environment. At this point, she reintroduced the boy nominally:

- (10) the dog was chasing him
.. .. then the reindeer .. put/put him in the river
down they landed on/on/in the river
Robert said 'sh'

Note here the previous reference to both protagonists switched reference with a pronoun, suggesting that for a moment the boy and the dog jointly were acting as thematic subject. On reverting to focus on the boy, K. had to reintroduce him nominally, since he had briefly lost his position as thematic subject.

C. used relatively few references to the boy and did not refer to him at all for several clauses, referring to the assorted other creatures which entered the narrative briefly, but not mentioning the boy. A thematic subject strategy was evident briefly during the first episode of the story until they set off to search in the forest, but from this point she did not really pick up this thread again. Thus her narrative was in many ways similar to R.'s, who also abandoned her thematic subject strategy at the end of the first episode, but unlike R.'s in that she did not pick it up again. While A.'s narrative was grouped with C.'s, on closer examination it had more of the features of R.'s and E.'s. The thematic subject strategy was used fairly consistently, with nominals used to introduce the boy initially, and to switch reference to him twice, once after the dog had been focussed on (catching his head in the jar) and once to reintroduce the boy after the dog's activities with the bees.

Thus, from this first group of subject, we have evidence of a thematic subject strategy being used by all subjects for at least some part of their narratives, with all subjects abandoning this strategy at least briefly during their narratives. For four of the five, this occurred at the end of the first episode - where the activity moves from the house to the forest (page 5). From this point, the activities of the boy and the dog become more complicated, making a thematic subject strategy more complex to control. A series of mishaps befall the protagonists, which result from their contact with a variety of other animals who must be introduced into the story. In addition, the boy and the dog are each performing different activities. The result is a tendency to use a nominal strategy to maintain the plotline and differentiate between the activities of the boy and the dog. Once the foregrounded activity becomes more focussed on the boy alone, the thematic subject strategy is again adopted.

Table 7 details the results for the six year olds subjects who fell into the second category - this was where nominal and pronominal references were fairly evenly divided for switching reference to the boy, whilst, pronominals were generally used to maintain reference to him.

TABLE 7: **Form/function pairings of references to the boy in the narratives of the six year olds in Category 2**

Subj	No	Total Cls	Total refs to boy	Noun for switch	Pro for switch	Noun for maintenance	Pro for maintenance
6F1:	N.	23	5	2	2	0	1
6M1:	S.	36	7	3	2	0	2
6F4:	B.	73	28	8	9	4	7
6M5:	I.	35	18	5	5	3	5
6M6:	D.	58	25	6	5	3	11
6M8:	F.	31	16	3	4	1	8

This group subdivided into three distinct groups. N. and S. used very few references to the boy at all; B. and I. used nouns and pronouns to both switch and maintain reference, with little preference exhibited in their form/function pairing; D. and F. showed a clear preference for using pronouns to maintain reference, but used both nouns and pronouns to switch reference.

Examining more closely the narratives of N. and S. initially, we find that both children were indeed using a thematic subject strategy. It was not previously evident because they chose as their thematic subject the plural subject of the boy and the dog on most occasions. The following is an example from N.'s narrative:

- (11) Well um there's this boy
 and he's got a dog and a frog \$
 and um the frog jumps out of the jar
 and um then **they** wake up \$
 and um **they** look around for the frog
 and **they** can't find him \$
 and um the dog he fall out of the window \$
 and then **they** um ... look for him \$
 then **they** look in the hole

This is one way out of the difficulty of tracking two different characters through the story - collapse them into a plural subject and refer pronominally throughout. N. switched reference only twice to the boy with a nominal. One was the introductory reference, and the other occurred at the beginning of the pond episode where the boy tells the dog to be quiet - a very similar strategy we saw to the one K., above, was using. While N.'s thematic subject strategy was clear throughout, S. began and ended with a clear thematic subject strategy, losing track of it briefly in the central active episode - in other words, in the same spot as we found the thematic subject strategy abandoned by most of these six year olds:

- (12) and they're calling out for it he looks in a hold
 the dog tries to get a beehive down from a tree
 and um .. there's a squirrel right on the ground and um
 the bees are going in their beehive
 and he get the beehive down
 and urn then he um /the boy goes up the tree
 and looks in a hold in the tree

Shortly after this point, S. reverted to using the plural subject as the thematic subject, which he maintained for the remainder of his narrative.

B. and I. used nominals and pronominals both to switch and maintain reference; B., too, began with all the appearances of a thematic subject strategy but abandoned it, more rapidly than the others, in favour of a nominal strategy which was maintained through page three to page thirteen. Her use of nominals to maintain reference reflects this strategy:

- (13) and then .. the dog's looking out the window
and so's the boy
and the boy's yelling some/something
and the dog falls down with the jar on his head
and the little boy's still standing at the window
and then the boy's on the ground with his boots on

Hereafter, the thematic subject strategy was rekindled throughout the end of the story. Thus B., too, used the thematic subject constraint where she felt confidently able to keep track of the characters, but with additional active input from other characters, she abandoned the strategy in favour of nominals. I. used a variety of nominals and pronominals to switch reference, but there was very little order in his narrative, and there was little evidence of a thematic subject strategy. His narrative really typified the 'here and now' approach found by Bamberg, whereby use of a noun or pronoun to switch or maintain reference to the boy did not reflect any overall organisational strategy by the narrator.

D. introduced the boy with a full nominal, and then appeared to be adopting a thematic subject strategy. However, from page 3, D. uses nominals to switch and maintain reference. However, from the point where the boy is tossed into the pond a thematic subject strategy is adopted through to the end. Finally F. adopted the boy as thematic subject until the last few clauses, in which he favoured a more anaphoric approach:

- (14) and then ... the boy fell in the water
then his dog hopped out
hopped over the hill
and the boy said "sh" to the dog
and then the little boy climbed up on the other side
and he saw his frog
and they they went back home

The results for the six year olds suggest that a majority of these children used a thematic subject strategy for at least some of their narrative. However, most of the children abandoned this strategy at the point in the story where other peripheral characters became involved, and where the dog's activities were totally unrelated to those of the boy. Once the two protagonists began acting in tandem again, the thematic subject strategy was taken up once more. Two subjects simplified the tracking problem by using the plural subject 'they'. There is clear evidence of a thematic subject strategy being used by this group of children, but it is clear that not all contexts lend themselves as readily to the strategy as others.

3.4 The four year olds

The critical comparison is with the narratives of the four year olds. Table 8 details the breakdown of references to the boy in relation to form and function by the twelve four year olds in Category 1:.

TABLE 8: **Form/function pairing of references to the boy in the narratives of the four year olds in category 1**

Subj	No	Total Cls	Total refs to boy	Noun for switch	Pro for switch	Noun for maintenance	Pro for maintenance
4F5:	L.	14	5	0	3	0	2
4M2:	P.	34	22	0	4	0	18
4M5:	W.	20	6	0	5	0	1
4M8:	X	17	10	0	5	0	5
4F9:	N.	34	24	1	6	0	17
4M3:	V.	22	14	1	2	0	11
4M7:	Z.	31	25	2	5	0	18
4M2:	M	34	17	1	10	1	5
4F3:	H.	27	15	1	6	3	5
4M6:	Y.	24	15	1	6	0	8
4F10:	O.	39	23	3	8	0	12
4M10:	Q.	20	10	0	3	1	6

This large group of twelve children divided into three sub-groups. Firstly, there were the narratives of those children who use only pronouns to refer to the boy: L., P., W. and X. The next subdivision consisted of N., V. and Z., who appeared to maintain reference to the boy a great deal throughout their stories. The remaining children, M., H., O., Y., and Q. used various approaches.

L.'s narrative showed no evidence of a thematic subject strategy, nor was there any evidence of overall organisation. She appeared to describe various unrelated events picked from the pictures, which she interspersed with frequent comments on the activities. She was clearly aware that the pictures related a story, as she tied in her final clause to the motivating force of the story, but there was no evidence of any ability to sequence events appropriately or to provide any overall organisational structure onto it. Her last few clauses evidence her approach:

(15) and he hurt his head
 ?? oh no I think he's in the pond
 he is in the pond
 there he is right there with all the other frogs
 thank you everybody for giving my frog back

P.'s narrative was typified by deictic pointers to each picture, suggesting that this child described each picture separately. Again there was no evidence of any overall organisation. On the few occasions on which pronominals were used to switch reference to the boy, these were no more than descriptions of the boy's activity which happen to follow a reference to another character. W. told a very short story. His differential approach to referring to the boy and the dog (linguistically marking the boy with a pronoun, while the dog is referred to nominally on most occasions) indicated a thematic subject strategy being used. However, the narrative lacked overall organisation, and the picture-by-picture description was marked by frequent use of deictic pointers (references to the boy are in bold type):

(16) and the dog's up there
 and look **he's** putting his hat on
 and the dog's going to get that boot
 there **he** is running out of there
 and the doggies?
 and **he** said "who" didn't he

X.'s short narrative did not develop a plot line, and he appeared to be describing specific pictures; however, there was some attempt being made to linguistically differentiate the boy and the dog. Evidence for this came from X.'s self repairs to the dog:

- (17) and he/he was/the dog was getting upon the big tree
and he/and he/and he/and the dog was running

X. self repaired three times to the dog - from pronoun to noun - and once to the boy - from pronoun to pronoun:

- (18) and he/and he went on the reindeer's head

N, V. and Z. all used large numbers of pronouns in their references to the boy. N.'s narrative presented as a series of picture descriptions, not as a whole. V. used a considerable number of pronouns to refer to the boy, and maintained reference to him throughout the large part of his narrative, avoiding switching reference to other characters. However, there was no additional evidence that what he was doing was organising the narrative as a whole - there were no conjunctions, and each clause appeared disjointed from the last. Z.'s use of pronouns for switching reference initially indicated that he did not have a thematic subject strategy either, switching reference to the frog with a pronoun as well as the boy (boy in bold):

- (19) and ... when **he** was asleep
he hopped out of the jar and (he = frog)
{I know what happened}
he looked out the window

However, his narrative did reflect aspects of a thematic subject strategy in the episode where the boy and the dog were searching through the forest in that pronouns were used for both the functions of switching and maintaining reference to the boy, while the dog was referred to nominally:

- (20) and he walked and he walked and he walked ...
and he looked in a/in a hole in a tree
and the dog was ge/doing a hole ..
and the dog runned from the bees

At this point he used a nominal to switch reference back to the boy but for the remainder of the narrative reference was always pronominal. However, pronominals were also used to switch reference to the reindeer and the frogs in the latter part of the narrative.

Unlike her peers, M. did use a thematic subject strategy throughout her narrative, referring to the boy pronominally to both switch and maintain reference, whilst referring to the dog exclusively with nominals. Her one nominal reference to the boy came where he tells the dog to be quiet, the same point at which the six year olds often used a nominal reference to reintroduce the boy. However, in the section where many of the six year olds abandoned the thematic subject strategy in favour of a nominal strategy, M. did not. Instead, she simplified the plotline by not mentioning either the gopher or the owl:

- (21) and he was calling to that little hole
he called into another hole
the dog broke .. the beehive
and .. he put his boots on
and the dog chased..
and then he/and then he crawled down to the/onto the .. the rocks

H.'s narrative reflects the 'here and now' strategy mentioned earlier, where nominals or pronominals are chosen apparently randomly to refer to all characters as shown in (22):

- (22) and the dog's cry/trying to ? see
 and he found him (he = owl; him = boy)
 and he's running after him (he = owl; him = boy)
 and the boy fell
 and he's calling for him (he = boy; him = frog)

0. clearly kept the plotline in mind while relating her narrative, but she did not differentiate linguistically between the boy and the frog, switching reference to both with pronominals, and in fact rarely using nominal references at all during her narrative. In example (23), references to the boy are again in bold, references to the frog in italics:

- (23) dog jumped off the window
 and then he growled at **him**
 and then he licked **him**
he looked through the trees
 and *he* wasn't there
he looked in the beehive
 and *he* wasn't in that home

Both Y. and Q. related short narratives. While Y.'s opening initially suggested a thematic strategy, the plot line was not developed and the narrative was very difficult to follow:

- (24) um .. he fell out the window
 looked at the .. looked at the boy
 and says hello
 and he smells/he hates the smell
 he smells the tree
 he fell out

Q referred to the dog exclusively for the first four clauses, then introduced the boy pronominally. Further references to the boy, with one exception, were pronominal. Other characters were referred to only in object position with full nominals. The dog was introduced once with a noun, from which point Q. used the plural reference. Thus there was some evidence that a thematic subject strategy was being used, with additional evidence of his attempts at cohesion coming from his use of connective; he used a large number of subordinates, with sequential function.

Thus from this large group, only one subject, M. used a true thematic subject strategy, while there is some evidence with a few of the others that this approach may be developing.

Finally the narratives of the three four year olds who fell into category two were examined. Table 9 details the referencing choices for the boy:

TABLE 9: Form/function pairing of references to the boy in the narratives of the four year olds in category 2

Subj	No	Total Cls	Total refs to boy	Noun for switch	Pro for switch	Noun for maintenance	Pro for maintenance
4F6:	G.	39	24	5	5	2	12
4F8:	T.	41	29	5	4	1	19
4M9:	J.	34	12	4	3	1	4

Table 9 indicates that G. and T. adopted a similar strategy, with switch references evenly divided between nouns and pronouns, and pronouns strongly preferred for maintaining reference to the boy. G.'s story began with the first three pictures being described with full nominals for both switching and maintaining reference to the boy. While she used

pronominal references to switch to the boy, there was no evidence that this reflected a thematic subject approach, and she appeared switch reference pronominally or nominally on a 'here and now' basis, rather than due to any overall strategy, as in example (25) (references to the boy are in bold):

- (25) and then the dog failed out the window
and then he licked
then **the/the/the boy** frowned
and **the little boy** calls 'frog where are you'
and then .. he found a beeshive
and **he** still called 'frog'

This example shows that unlike the narratives of the six year olds, nominal references to the boy did not reflect the introduction of a new episode, and the child did not appear to be differentiating linguistically between the two characters.

T.'s narrative was much more disjointed than G.'s, and she did not manage to maintain the thread of the story. Each picture was represented by what appeared to be an individual description, with no attempt made to interconnect the events into a cohesive whole:

- (26) and then he/when he tried the boots on they was too bit
and then he fell down
and the dog stall running
and when he got up on the rock
he was going to go round there

J.'s narrative did not reveal a clear thematic subject strategy either. J. used pronouns to switch reference to the boy, but he also used them to switch reference to the dog, the bees and the reindeer. His narrative was also disjointed, and required reference to the pictures to make sense of it, for example:

- (27) then the boy came out to a.. um something with some horns
an a/an a owl was stopping by
and he got on it
then he was chasing the doggie

However, for the last few clauses of his narrative, J. follows the plotline, and at this point his narrative becomes more comprehensible:

- (28) they also had a big splash
then they found the log
they climbed upon it
then when they got on it
they met two frogs

In the final episodes the boy and the dog are acting together and therefore it is much easier to relate their activities. In addition, the only other characters who participate in the story at this point are the frog family, and they are passive, sitting in the pond, and are not affecting the ongoing plotline. Thus, it is much easier to describe the events coherently because there is no conflict as to which character to focus on.

Conclusion

Bamberg (1987) claimed that a thematic subject strategy was used commonly among his youngest group of German-speaking children (age three and a half to four) in their narratives told from the Frog Story. This paper investigated whether this phenomenon was present in the narratives of the four year old English speaking children who participated in this study.

Bamberg's finding that the thematic subject strategy was most commonly found in his four year old group was not reflected here. There was only one child, M., in the four year old group who was clearly using a thematic subject strategy throughout her narrative, although she simplified her story by ignoring a number of the actors in it. There were a few other children in this group who used this strategy for brief periods during their narratives, but in general the narratives of the children in this group were categorised by lack of any overall organisation, and lack of plotline development, with some children using deictic gestures or deictic markers to focus attention on a particular character or activity. There was clear evidence for many of the six year olds using a thematic subject strategy, at least a some points throughout their narratives.

A thematic subject constraint was used by most of the six year olds for at least parts of their narratives. However, complex episodes cause some alternative strategy to be used at various points throughout the narrative. This occurred consistently in the second episode, where the activities of the boy and the dog were different on every page, and had to be constantly monitored. Karmiloff-Smith's books were far less complex and the storylines were based on a single episode. In the current study the prompt comprised several episodes and it was with the first and last episodes that the thematic subject constraint was most predominant, where both characters were performing similar activities, and could often be collapsed into a plural pronoun.

These results support the finding of Karmiloff-Smith who argued that children pass through three stages of development. The first stage is characterised by details, but no overall cohesion, and a lack of 'top-down' organisation. The second is where the thematic subject constraint applies; the children at this stage demonstrate awareness of the necessity of exerting some overall organisation onto their narratives, and adopting a thematic subject strategy is one way of simplifying the task of tracking competing referents through the narrative. In the third stage, not discussed in this paper, the subjects are able to demonstrate more flexibility in their narratives, providing more detailed and cohesive narratives, in which the necessity to linguistically differentiate between the protagonists is no longer in evidence. I suggest that the difference between these findings and those of Bamberg result largely from the differences in the methodology used, where Bamberg's task was not primarily a test of the children's abilities with respect to narrative organisation, but focussed more on their recall skills, since they had previously heard the story twice from a parent in addition to having told it themselves once before. Thus these children came to the task with a mental representation of the story already in mind which allowed them to focus on the activities of the boy and to refer to him thematically. For the children in this study, the task represented an organisational test of their narrative skills. There is very scant evidence of the four year olds entering Karmiloff-Smith's second stage.

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APPENDIX

The Frog Story

1. A little boy and his dog are looking at a frog in a jar.
- 2a. The boy and the dog are asleep on the bed and the frog is climbing out of the jar.
- 2b. The boy and the dog wake and see the frog has gone.
- 3a. The boy searches in his boot, while the dog puts his head in the jar the frog was in.
- 3b. They look out of the window, the dog with the jar stuck on his head.
- 4a. The dog falls out of the window with the jar on his head.
- 4b. The boy, now also on the ground and looking angry, picks up the dog, who licks him.
5. The boy and the dog go into the forest and call for the frog.
- 6a. The boy calls down a hole, while the dog is jumping up at a beehive.
- 6b. The boy has his nose bitten by a gopher; the dog is barking at the beehive.
- 7a. The boy climbs a tree and looks in a hole; the dog has now knocked the beehive to the ground.
8. The boy is knocked out of the tree by an owl; the dog is chased by the bees.
- 9a. The boy climbs a rock.
- 9b. The boy has climbed the rock and is holding on to some branches; the dog is searching below.
- 10a. The branches turn out to be a deer's antlers and the boy is lifted onto the deer's head; the dog is still searching.
- 10b. The deer trots off with the boy on his head, the dog snapping at its heels.
11. The boy and the dog are tossed over the edge of a cliff by the deer.
- 12a. They land in a pond.
- 12b. The dog climbs on the boy's head.
- 13a. They are beside a log and the boy says 'sh' to the dog.
- 13b. They climb over the log.
- 14a. On the other side of the log they find two frogs.
- 14b. They see there are also a number of baby frogs.
15. They leave carrying one of the baby frogs away with them, and waving to the remaining frogs who are now, all but one, sitting upon the log.

The book consisted of 24 pictures. Generally there were two pictures to a page - (a) indicates the left hand side of the page, (b) the right hand side. Pages 5, 8 and 11 had one picture over the double page.