Increasing cohesion in narratives: a developmental study of maintaining and reintroducing subjects in French*

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Abstract

The informational adequacy of children's referential expressions in narrative texts has received considerable attention in the literature (Warden 1976, 1981; Karmiloff-Smith 1981, 1986; Hickmann 1987, 1991; Bamberg 1987; Wigglesworth 1990, 1997; Kail and Hickmann 1992; Berman and Slobin 1994; Hickmann et al. 1995; Van der Lely 1997). Much of this research has concentrated on the referential appropriateness of form of the noun phrase (definite or indefinite). While various factors have been proposed to explain children's gradual mastery of referential adequacy, this particular study focuses on how development in productive syntax influences referential cohesion. Two particular narrative discourse contexts in which definite reference is required are examined: maintaining a subject referent across clauses and reactivating an already-introduced subject referent. It is shown that the inventory of potential grammatical structures increases with development. Particular emphasis is given to subject pronoun ellipsis and to nonfinite subordination, two grammatical means of establishing cohesion across clauses. The results show that both subject ellipsis and nonfinite subordination as cohesive referential expressions increase with age. Two different sources of development change in production are explored: formal complexity of the form and appropriateness of that form in a given context.

Introduction

When producing texts proficient narrators must introduce new referents, maintain referents, and switch or reintroduce referents. The development of children's ability to appropriately manipulate referring expressions has received considerable attention in the literature (Warden 1976, 1981; Karmiloff-Smith 1981, 1986; Hickmann 1987, 1991; Bamberg 1987; Wigglesworth 1990, 1997; Kail and Hickmann 1992; Berman and Slobin

1994; Hickmann et al. 1995; Van der Lely 1997). Much of this work has been concerned with referential adequacy and has argued that children's ability to appropriately introduce new referents and to maintain and reintroduce definite referents across successive clauses is a gradual development.

The introduction of a referent requires sophisticated pragmatic knowledge concerning what is shared between narrator and audience. Methodological procedures in story elicitation influence children's production. In picture-based narratives, for example, the appropriateness of referential expressions for the introduction of new referents is influenced by mutual knowledge shared between child and audience (Kail and Hickmann 1992; Hickmann 1995; Kail and Sanchez y Lopez 1997). When the child's audience does not have access to the pictures, children show an earlier increase in appropriate (indefinite) forms for referent introduction. In addition, retelling an orally presented narrative yields more appropriate referent-introducing expressions than does narrating a story from pictures (Schnieder and Dubé 1997). The type of story genre elicited also influences children's production. Orsolini and DiGiacinto (1996) show that referent introductions with indefinite expressions (characteristic of Italian fairytales) are used by four-year-old children in narrative retelling tasks. However, when the same children are asked to invent a story using toy animals, indefinite forms used to introduce referents are much less frequent. The authors argue that it is not only the signaling to the listener that the information is new that determines appropriate use of indefinite expressions in narrative discourse. It is also the children's ability to select expressions as an indication of the textual convention required by the context. What is characteristic of retellings of fictional fairytale-type narratives is not characteristic of invented stories.

In addition to the study of referential adequacy, research has addressed the interaction between referential expressions and children's developing abilities to construct a well-formed narrative text. Pronouns are early-on the preferred referential expression for maintaining subject arguments across successive clauses (Karmiloff-Smith 1981, 1986; Hickmann 1987, 1991, 1995; Bamberg 1987). However, early uses of pronouns in narrative discourse differ considerably from adult uses. Karmiloff-Smith (1981) proposes a three-phase model for the development of anaphoric reference. In the first phase, three- and four-year-old narrators use referential expressions deictically, relying heavily on the picture stimuli upon which the story is based. In a second phase the child uses a "thematic-subject" strategy. Pronouns are constrained to reference to the main character and are used not only to maintain reference to the main character across successive clauses but also to reintroduce the main character. More

flexibility is observed with development, with anaphoric pronouns being used to refer to secondary characters as well as to main characters. In addition, their use to reintroduce a primary character decreases. Anaphoric pronouns can be judged at this third level to serve discourse cohesion. Rather than being determined solely by character status, anaphoric reference is influenced by event and episodic structure of the narrative (Bamberg 1986, 1987; Kail and Hickmann 1992; Wigglesworth 1991).

Two distinct but interrelated levels of analysis have been addressed in research on children's text production: coherence and cohesion. Cohesion refers to the linguistic devices used for the expression of content, while coherence refers to the structure of content (Hickmann 1995: 201). The study presented here will focus on the development of different types of referential expression for maintaining and reintroducing subject arguments in picture-based narrative discourse. The focus is on how referential expressions for encoding subject arguments contribute to connectivity between clauses (Berman and Slobin 1994; Givón 1995a) and how they change with development. Givón (1995a: 61) has defined coherence as "the continuity or recurrence of some element(s) across a span (or spans) of text." How this continuity leaves its trace will be examined through the analysis of structural means for maintaining and reintroducing animate characters in subject position in narrative texts.

Many contemporary theories of linguistics (Matthiessen and Thompson 1988; Chafe 1994; Foley and Van Valin 1984) argue that syntax exists to facilitate chunking of information into units. Speakers have a variety of options for maintaining and reintroducing subject arguments across successive clauses. The specific goals set out for the present study are (1) to establish the inventory of referential structures used in French narrative texts in two discourse contexts (maintaining and reintroducing subject arguments) and (2) to show how the use of available structures changes with development.

Introducing and maintaining referents in French

In spoken French new referents are generally introduced in either clefted presentational structures, such as in (1), or in other postverbal positions, such as in (2) (Lambrecht 1994; Hickmann et al. 1996).

(1) y a un homme
     'there is a man'
(2) hier j'ai vu un homme
     'yesterday I saw a man'

The newly introduced referent can be promoted to subject of the following clause using one of four structural options: repetition of the noun, (3a), repetition of the noun with a clitic pronoun, (3b), use of a pronoun, (3c), or use of a subject relative pronoun, (3d).

(3) a. (et) l'homme m'a donné un bonbon
'(and) the man gave me a piece of candy'
b. (et) l'homme il m'a donné un bonbon
'(and) the man he gave me a piece of candy'
c. (et) il m'a donné un bonbon
'(and) he gave me a piece of candy'
d. qui m'a donné un bonbon.
'who gave me a piece of candy'

When maintaining a subject argument in subsequent clauses after its promotion or introduction, two additional structural options are available: subject ellipsis, (4a), and nonfinite subordination, (4b).

(4) a. (et) est parti au travail
'(and) left for work'
b. avant de partir au travail
'before leaving for work'

These structural options for introducing, promoting, and maintaining subjects across clauses create both referential coherence and syntactic cohesion.

Considerable attention has been given to subject pronouns in spoken French. In spoken conversational French very few lexical noun phrases occupy subject position. While the subject position can be occupied by a lexical noun, the unmarked preferred clause structure in spoken conversational French is a subject clitic pronoun (and potentially other clitics) before the verb. In one long corpus of conversation between members of a working-class family (François 1974) there is a total of 1550 subject noun phrases. Of those 1550 subject phrases, only 46 are lexical, roughly 3% (Lambrecht 1984). Lambrecht compares these 46 lexical subjects to 1440 clitic subjects. Jeanjean (1980a, 1980b) confirms this finding in a corpus of casual conversation where she finds an average of 11% for lexical nouns in subject position.[1] Thus, in spoken conversational French, after introduction of a new referent either in a presentational construction such as (1) or in other postverbal positions such as (2), the preferred structure for subject promotion and maintaining is a pronominal form such as shown in (3c) and (3d). All of these pronominal forms mark that the referent is assumed to be both accessible and activated (Levelt 1989; Lambrecht 1994).

While all of the structures evoked so far are grammatical in French, they are not all equally appropriate in all situations. Blanche-Benveniste (1990) compared a wide range of discourse gathered from a variety of speakers. Whereas anaphoric subject-clitic pronouns abound in spoken conversational French, in more formal registers of French, they are avoided through the use of, for example, lexical noun substitutions, pronoun ellipsis, (4a), or nonfinite subordination, (4b).

Another construction type that is subject to register variation is left dislocation, such as shown in (3b) and (5) (Barnes 1985; Lambrecht 1981, 1984, 1994). In spoken French, when there is a noun in sentence-initial position, a clitic pronoun can occur in subject position.

(5) le chat il chasse la souris
'the cat he chases the mouse'

Two different intonation and pause patterns exist for these noun-pronoun structures. Le chat can be uttered with a nonfinal or rising intonation followed by a pause and the pronunciation of il, or le chat il chasse la souris can be uttered in the same intonational unit (Wunderli 1987). When le chat carries rising intonation and is followed by a pause it is considered a dislocation ("hanging topic," Cinque 1977), while in the absence of such characteristic intonation and pause, the pronoun copy is considered a grammaticalized subject-verb agreement marker for the topic that is inside the clause ("ordinary topic," Cinque 1977). Lambrecht (1994) explains that left detachment signals that a nonactive referent is being promoted to an active state. Promoting a nonactive referent to active state requires greater mental effort on the part of the speaker and hearer in comparison to that needed to maintain an already-established referent in a state of activeness (Lambrecht 1994: 97). Thus, additional segmental and prosodic marking are motivated. Berrendonner and Reichler-Béguelin (1997) comment that since there is no reliable way of marking prosody, these structures are generally avoided in written French (cf. Gadet 1997), and consequently in more formal varieties of spoken French.

Maintaining referents in subject position potentially involves a host of structures, including full noun phrases with or without a detached pronoun, anaphoric pronouns, subject ellipsis, subject relative pronouns, and nonfinite subordination. All of these forms are grammatical, but they differ in register and in their contributions to continuity. Relative pronouns and subject ellipsis, as opposed to full nouns and anaphoric subject pronouns, exhibit tighter packaging of events by establishing a dependency relationship between the two clauses (Berman and Slobin 1994). Nonfinite connectivity represents perhaps the most tightly pack-

aged type of structure. The subject and the tense of the subordinate clause are completely dependent on the principal clause (Foley and Van Valin 1984). Forms for maintaining referents as subjects show variation both in compactness of information and in register appropriateness. The more compact forms, for example use of subject pronoun ellipsis or nonfinite ellipsis, indicate a more formal register (Blanche-Benveniste 1995).

Reintroducing referents

Appropriate reintroduction of a referent in subject position can be done by using a number of structures, including full definite noun phrases, with or without a detached pronoun (shown in [6a] and [6b] respectively) and more elaborated definite noun phrases, or "as-for" constructions (Kuno 1972; Gundel 1976), or "about" constructions (Reinhart 1982), (6c). These elaborated constructions can be used appropriately if the referent is a potential topic and if the referent is accessible, but not activated (Ochs-Keenan and Schieffelin 1976; Lambrecht 1994; Levelt 1989). Nonfinite ellipsis, (6d), is also a possibility.

(6) a. La femme est tombée. L'homme l'a soulevée.
'The woman fell. The man picked her up.'

b. La femme est tombée. L'homme i l'a soulevée.
'The woman fell. The man he picked her up.'

c. La femme est tombée. Quant à l'homme i l'a soulevée.
'The woman fell. As for the man he picked her up.'

d. La femme est tombée. En la soulevant l'homme s'est fait mal.
'The woman fell. Picking her up the man hurt himself.'

In informal spoken French definite noun phrases with a detached pronoun, (6b), are often used (Lambrecht 1981; Hickmann and Hendriks 1999). In order to accomodate the functional need for detachment, more formal varieties of French, such as written French, resort to "as-for"-type constructions, (6c) (Lambrecht 1994: 182). In reintroduction discourse contexts, nonfinite ellipsis, (6d), requires suspension of assignment of the subject referent and the tense of the verb until the utterance of the independent clause. This type of cataphoric "anticipatory grounding" opens up a pending connection in a yet-to-be completed structure (Gernsbacher 1990; Givón 1995a). And, as mentioned earlier, nonfinite subordination is more associated with formal registers (Blanche-Benveniste 1995).

Use of grammatical options

Narrators are faced with a variety of grammatical options to maintain and reintroduce referents in subject position. Speakers can show expressive preferences for one structure over another. Such preferences can be determined by the availability of the structure in the narrator's productive repertory. For example, nonfinite subordination can be considered a "late acquisition," in that it is beyond the capacities of young child narrators (Berman 1986; Berman and Slobin 1994; Hickmann 1991; Jisa and Kern 1998). Because the subject and the tense of the subordinate clause are dependent on the main clause, productive use in more elaborated monologue texts requires the mastery of adult speakers.

Preferences can also be determined by what a speaker considers appropriate in a given situation. For example, a very strong indication of conventional formal narrative texts in French is the use of the simple past (*passé simple*). Once a narrator has chosen the *passé simple* some of the options, such as the use of detached subject pronouns, are much less compatible. Thus, at least two types of development are involved: productive mastery of a variety of structures for similar functions and mastery of the textual conventions governing use in a particular context.

A number of predictions can be made concerning structures used for maintaining reference in narrative texts. Previous research has shown that subject pronouns are precocious structures for maintaining subjects (Karmiloff-Smith 1981, 1986; Hickmann 1987, 1991, 1995; Bamberg 1987). One can then expect that the results reported on here will confirm early use of pronouns to maintain subjects across successive clauses. In addition to frequency of pronoun use, their context of usage will change with development. Previous research, as pointed out earlier, has shown that there is a gradual change from pronoun usage governed by a thematic subject strategy to pronoun usage governed by considerations of discourse cohesion (Karmiloff-Smith 1981; Bamberg 1986, 1987; Kail and Hickmann 1992; Wigglesworth 1991).

However, the question that is of focal interest in the work presented here is how narrators of different ages vary in their choices of other available grammatical options. A possibility for maintaining a referent in subject position is the use of a definite noun phrase. It is as grammatical an option in maintaining contexts as is a pronoun. However, from a discursively economic point of view it is expected to decrease with age. Whereas the use of a pronoun in this discourse context does not lead to underdetermination or ambiguity, the use of a definite noun phrase can be interpreted as overspecification or redundancy (Grice 1975). Along a similar line, definite noun phrases with a detached pronoun that signal

that a nonactive referent is being promoted to an active state (Lambrecht 1994) should be avoided in maintaining discourse contexts because the subject status of the referent presupposes that it is already activated in the discourse.

Subject ellipsis, subject relative pronouns, and nonfinite subordination are signs of tighter cohesion in subject maintenance between successive clauses. These three structures, however, differ in both their structural complexity and their register distribution. Subject ellipsis is expected to increase with age, reflecting tighter packaging between clauses. Given that nonfinite ellipsis establishes an even stronger relation of syntactic and semantic dependency between clauses, it is also expected to increase with age. Nonfinite ellipsis is also a very clear indication, at least for adults, of higher register (Gayraud et al. forthcoming). Subject relatives, however, are not expected to increase. Previous research (Jisa and Kern 1998) has shown that both subject relative-clause constructions and pseudo-cleft presentational structures (il y a un garçon qui 'there is a boy who') are precocious in French and become specialized in narrative discourse to promote a referent to subject position after introduction in a nonsubject position (e.g. 'and he falls on the head of a deer, who carries him to a cliff'). It is expected, then, that subject ellipsis and nonfinite ellipsis will gradually replace earlier use of subject pronouns and subject relative pronouns.

In reintroducing contexts, it is expected that the results will conform to earlier findings. The exclusive use of subject pronouns to refer to principal characters, a referential option associated with a thematic subject strategy, should decrease. The use of definite noun phrases should increase in reintroducing contexts. The use of nonfinite ellipsis in reintroducing contexts should also increase with development. It not only establishes clear syntactic and semantic dependency between clauses but also requires that the speaker withhold subject and tense assignment until completion of the independent clause (Gernsbacher 1990; Givón 1995a).

If tighter syntactic packaging (nonfinite ellipsis) increases in reintroducing contexts, it is also expected that the use of left detachment (le garçon i 'the boy he') should decrease with age. Nonfinite ellipsis is associated with more formal registers of French (Blanche-Benveniste 1995). Left detachment, however, is not, and thus the cooccurrence of the two structures in the same text should be avoided by older subjects. The functional work of left detachment is accomplished by "as-for"-type constructions (quant au garçon i 'as for the boy he') in more formal varieties (Lambrecht 1994). Given that the type of narrative data elicited is closer to a conventional fairytale than to a conversationally produced

personal narrative, it is expected that "as-for" constructions used to reintroduce a referent will increase with age.

Method

Procedure

The data consist of narrative monologues collected using a picturebook task (Berman and Slobin 1994: 17–35). One researcher shows the child a book, Frog, Where Are You? (Mayer 1969), which consists of 24 pictures without text. The pictures relate the adventures of a boy and his dog in their search for their runaway frog. During the course of the story, the boy and the dog have a series of adventures with other participants (an owl, a mole, bees, a deer). The presence of so many secondary participants who must be woven into the story along with the principal characters makes the Frog story a particularly interesting task for the study of maintenance and reintroduction of referents.

The child narrator is told that the book tells a story and is instructed to look carefully at each picture. Once the researcher is assured that the child has looked through the entire book, a second adult, presented to the child as not knowing the story, enters the room and the child tells the story to him/her. The adult narrators are informed that their texts will be used to aid research on children's expressive development. The adult subjects tell the story directly to the researcher. The stories and the preparation period are recorded.

Subjects

The population consists of four groups of fifteen subjects each: five-year-olds, seven-year-olds, ten-year-olds, and young adults, all middle-class monolingual speakers of French. Table 1 provides the mean ages, the age range, and the mean clause length and range of the texts produced. The majority of the children's texts were recorded in the individual child's home, with a few children recorded in a researcher's home. The adult subjects were recorded either in their homes or in a university context.

Coding

The recorded narrative texts are transcribed in clauses following the guidelines given by Berman and Slobin (1994: 655–664). Four different

Table 1. *Ages of subjects and mean length of texts in clauses*

	5-year-olds n = 15	7-year-olds n = 15	10-year-olds n = 15	Adults n = 15
Mean age	5;6	7;5	10;6	22
Age range	5;1–5;10	7;0–7;11	10;1–10;10	20–26
Mean number of clauses	53	45	47	75
Range of number of clauses	31–107	25–64	25–78	48–121

discourse contexts were coded for all animate subject arguments in the text: introduction (INT), promotion (PROM), maintain (MA), and reintroduction (REIN). INT refers to the very first mention of an animate entity in the text as subject, object, or oblique argument. The first introduction of a new referent was coded INT irrespective of its position in the clause. Only subsequent references to that same referent in subject position are considered here. The remaining three discourse contexts are coded for the subject argument of each clause. PROM was coded for the subject of a clause when the immediately preceding clause contained a first mention to the same referent as a nonsubject: a direct object, an indirect object, or an oblique argument. MA refers to the maintenance of the same referent in subject position in a subsequent clause. REIN refers to a reintroduction in subject position of a previously mentioned referent subsequent to a clause containing a different subject. Examples of the four referential contexts are given below in (7)–(8); target structures are italicized.

(7) a. et donc il s' retrouve sur la tête *d'un grand cerf*
    INT
    'and so he finds himself on the head of a big stag'

b. *qui* est pas du tout content
    PROM
    'who is not at all happy'

c. et *il* commence à courir vers un précipice
    MA
    'and he starts to run toward a cliff'

d. et *il* s'arrête net
    MA
    'and he stops abruptly'

e. et *le petit Pierre* il tombe dans l'eau avec son chien (adult)
    REIN
    'and the little Peter, he falls into the water with his dog'

(8) a. en fait c'est *un cerf*
    INT
    'in fact it's a stag'

b. *il* le prend sur sa tête
    PROM
    'he takes him on his head'[2]

c. et _ s' enfuit
    MA
    'and speeds away'

d. *le petit chien* court après eux
    REIN
    'the little dog runs after them'

e. *le cerf* stoppe près d'une dénivellation
    REIN
    'the stag stops close to a fall-off'

f. et _ fait tomber le chien et le petit garçon (adult)
    MA
    'and makes the dog and the little boy fall'

Clauses coded with subjects in MA and REIN contexts were isolated and further coded for linguistic form in much the same way as Orsolini and DiGiacinto (1996). In MA referential contexts, eight linguistic forms were identified: noun/name (NOUN), pronoun (PRO), subject relative pronoun (REL), pronoun ellipsis (PRO ELL), nonfinite ellipsis (NF ELL), left dislocation (NOUN+PRO), right dislocation (PRO … NOUN), and CLEFT. Definitions and examples of the form codings for subject arguments in MA discourse contexts are given in examples (9)–(16).

(9) MA–noun/name (NOUN)
A lexical noun or a proper name is used to maintain a subject across successive clauses.

a. et *le garçon* n'était pas content
    REIN–NOUN
    'and the boy wasn't happy'

b. *le petit garçon* était dans le bois avec le chien
    MA–NOUN
    'the little boy was in the woods with his dog'

c. et *le petit garçon* appela la grenouille (7;06i)
    MA–NOUN
    'and the little boy called the frog'

d. *Bobby* lui aussi sauta de la fenêtre
    REIN–EL NP
    'Bobby him also jumped from the window'

e. et _ gronda son chien
    MA-PRO ELL
    'and scolded his dog'

f. *Bobby* alla dans la forêt (10;6f)
    MA-NOUN
    'Bobby went into the forest'

(10) **MA-pronoun (PRO)**
A pronoun is used to maintain a subject across successive clauses.

a. et *le chien il* avait la tête dans le bocal
    REIN-NOUN+PRO
    'and the dog he had his head in a jar'

b. et *il* était par la fenêtre
    MA-PRO
    'and he was by the window'

c. et *il* avait toujours le bocal là sur la tête (5;10k)
    MA-PRO
    'and he still had that jar there on his head'

(11) **MA-relative pronoun (REL)**
A relative subject pronoun is used to maintain a subject across successive clauses.

a. c'est *quelqu'un*
    INT
    'it's somebody'

b. *qui* est dans sa chambre
    PROM
    'who is in his room'

c. *qui* regarde dans le pot (7;11q)
    MA-REL
    'who is looking in a pot'

(12) **MA-pronoun ellipsis (PRO ELL)**
The subject is maintained from a preceding clause and the subject pronoun in the successive clause is ellipsed.

a. *le petit garçon* monta sur un arbre
    REIN-NOUN
    'the little boy climbed on a tree'

b. et _ vu un trou (7;01b)
    MA-PRO ELL
    'and saw a hole'

(13) **MA-nonfinite ellipsis (NF ELL)**
A nonfinite structure (participle, gerund, infinitive) is used to maintain the subject of the preceding clause.

a. *Vincent* récupéra sa petite grenouille Reinette
    REIN-NOUN
    'Vincent retrieved his little frog Reinette'

b. et *il* s'en alla regagner sa maison
    MA-PRO
    'and he left to return to his house'

c. _ *accompagné* de son chien Tommy (adult)
    MA-NF ELL
    'accompanied by his dog Tommy'

(14) **MA-noun+pronoun (NOUN+PRO)**
A noun plus a coreferential detached clitic pronoun is used to maintain a subject across two successive clauses.

a. alors après *le chien i* s'amuse à jouer avec l'arbre
    REIN-NOUN+PRO
    'so after the dog he amuses himself with the tree'

b. et puis après *le chien i* se retourne (5;08j)
    MA-NOUN+PRO
    'and then after the dog he turns around'

(15) **MA-pronoun ... noun (PRO ... NOUN)**
A pronoun is used to maintain a subject across two successive clauses. The referent of the pronoun is rendered explicit by a noun in clause-final position.

a. *le chien* le suit
    REIN-NOUN
    'the dog follows him'

b. et op *il* tombe *le chien* (7;9o)
    MA-PRO ... NOUN
    'and whoops he falls the dog'

(16) **MA-cleft**
A cleft structure (*il y a Noun*, 'there is a Noun') is used to maintain a referent across two successive clauses.

a. et après *le petit garçon* monte sur un arbre
    REIN-NOUN
    'and after the little boy climbs up a tree'

b. après *y a le petit garçon*
    MA-CLEFT
    'after there is the little boy'

c. *i* tombe (7;0n)
    PROM
    'he falls'

Eight form codings for subjects in REIN referential contexts were also

identified: noun/name (NOUN), pronoun (PRO), nonfinite ellipsis (NF ELL), left dislocation (NOUN+PRO), right dislocation (PRO ... NOUN), topic pronoun + clitic pronoun ('TOP PRO + PRO), CLEFT, and elaborated noun phrases (EL NP). Definitions and examples of the form codings for subject arguments in REIN discourse contexts are given in examples (18)–(25). Example (17) illustrates the coding of one entire episode.

(17) a. il y a *un animal*
  INT
  'there is an animal'
 b. *qui* le prend
  PROM
  'who takes him'
 c. et *il* court
  MA–PRO
  'and he runs'
 d. *il court cet animal*
  MA– PRO ... NOUN
  'he runs this animal'
 e. *le chien* le suit
  REIN–NOUN
  'the dog follows him'
 f. et op *il* tombe *le chien*
  MA– PRO ... NOUN
  'and whoops he falls the dog'
 g. et *le petit garçon* tombe avec son chien (5;90)
  REIN–NOUN
  'and the little boy falls with his dog'

(18) REIN–noun/name (NOUN)
A subject is reintroduced using a definite noun or a proper name.
 a. *le chien* tomba
  MA–NOUN
  'the dog fell'
 b. et *le garçon* n'était pas content (7;06i)
  REIN–NOUN
  'and the boy wasn't happy'
 c. *il* [the boy] appela par la fenêtre sa grenouille
  MA–PRO
  'he called the frog from the window'
 d. *Pantoufle* tomba de la fenêtre
  REIN–NAME
  'Pantoufle fell from the window'

 e. et _ cassa le bocal (10;6f)
  MA–PRO ELL
  'and broke the jar'

(19) REIN–pronoun (PRO)
A subject is reintroduced using a subject pronoun.
 a. y a *un aigle*
  INT
  'there's an eagle'
 b. *qui* veut essayer de le prendre
  PROM
  'who wants to try to take him'
 c. et ben *i* [the boy] s'est mis couché à quatre pattes (5;1a)
  REIN–PRO
  'and well he crouched down on all fours'

(20) REIN–nonfinite ellipsis (NF ELL)
A subject is reintroduced using a nonfinite structure (participle, gerund, infinitive).
 a. *arrivé* au-dessus d'une grande fossé
  REIN–NF ELL
  'having arrived at the top of a big gully'
 b. *le cerf* s'arrete net (20i)
  MA–NOUN
  'the deer stopped abruptly'

(21) REIN–noun+pronoun (NOUN+PRO)
A subject is reintroduced using a noun with a detached subject clitic pronoun.
 a. *il* [the boy] est fâché
  MA–PRO
  'he is mad'
 b. alors après *le chien i* s'amuse à jouer avec l'arbre (5;08j)
  REIN–NOUN+PRO
  'so after the dog he amuses himself with the tree'

(22) REIN–cleft
A subject is reintroduced in a cleft structure followed by promotion of that referent to the subject of the next clause.
 a. *le chien* veut essayer de grimper sur l'arbre
  MA–NOUN
  'the dog wants to try to climb up the tree'
 b. et puis *il* arrivait pas
  MA–PRO
  'and then he wasn't able to'

c. *y a que le garçon*
    REIN–CLEFT
    'it's only the boy'

d. *qui arrive à grimper sur l'arbre* (5;1a)
    PROM
    'who is able to climb up the tree'

(23) REIN–pronoun… noun (PRO …. NOUN)
A pronoun is used to reintroduce a subject. The referent of the pronoun is rendered explicit by a noun in clause-final position.

a. *et le chien il le regarde*
    SW–NOUN+PRO
    'and the dog he looks at it'

b. *et il est pas content le garçon* (5;1a)
    REIN–PRO… NOUN
    'and he is not happy the boy'

(24) REIN–topic pronoun+clitic pronoun (TOP PRO+PRO)
A referent is reintroduced using a topic pronoun (*lui*) followed by a subject clitic.

a. *y a un petit animal*
    INT
    'there is a little animal'

b. *lui i* [the dog] *regard les abeilles voler*
    REIN–TOP PRO+PRO
    'him he watches the bees flying'

c. *lui i* [the boy] *rentre dans l'arbre* (5;5g)
    REIN–TOP PRO+PRO
    'him he goes into the tree'

(25) REIN–elaborated noun phrase (EL NP)
A referent is reintroduced in subject position preceded by an "as-for" construction.

a. *Tommy essaya de secouer l'arbre*
    REIN–NOUN
    'Tommy tried to shake the tree'

b. *il secoua tant et si bien*
    MA–PRO
    'he shook it so well'

c. *que l'essaim d'abeilles se decrocha de la branche*
    REIN–NOUN
    'that the beehive came off the branch'

d. *et _ tomba sur le sol*
    MA–PRO ELL
    'and fell to the ground'

---

e. *quant à Vincent il essayait toujours de retrouver sa grenouille* (22v)
    REIN–EL NP
    'as for Vincent he was still trying to find his frog.'

Only subject arguments are discussed here, thus ignoring how speakers encode the same referent as nonsubject arguments. Future work should be undertaken to investigate the relationship between reference in subject position and other positions (cf. Givón 1995b; Van der Lely 1997).

Results

The adult texts are significantly longer than the children's texts ($F_{(3,56)} = 8.65$, $p < 0.0001$). In the attempt to compare texts of different clause lengths, and consequently different numbers of subject arguments, data will be reported in proportions rather than absolute numbers.

Maintain (MA) discourse contexts

The proportion of clauses devoted to maintaining subjects across successive clauses increases with age, as shown in Figure 1. There is a significant overall age effect ($F_{(3,56)} = 5.30$, $p < 0.002$). Post hoc Scheffé tests reveal that this age effect is due particularly to differences between the five-year-olds and the two oldest groups (ten-year-olds, $p < 0.003$; adults, $p < 0.005$). For all age groups, principal characters overwhelmingly dominate in MA contexts.

Figure 2 and Table 2 show the structural preferences for MA across successive clauses for the different groups of subjects. Only those expressions with a mean percentage of at least 10% for at least one group of
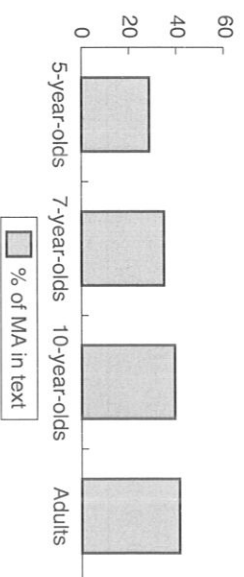

Figure 1. *Percentage of clauses devoted to maintaining referents as a proportion of total clauses*
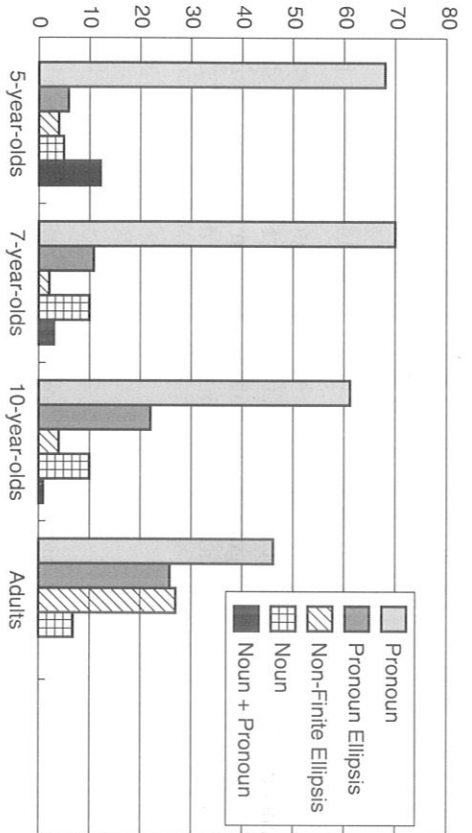
Figure 2. *Frequency distribution of referential expressions in maintain context (in percentages)*

Legend: Pronoun · Pronoun Ellipsis · Non-Finite Ellipsis · Noun · Noun + Pronoun

(Age groups: 5-year-olds, 7-year-olds, 10-year-olds, Adults; y-axis 0–80)

Table 2. *Mean and range of referential expressions observed in maintain (MA) discourse contexts in percentages (occurrences in parentheses)*

	5-year-olds $n = 15$	7-year-olds $n = 15$	10-year-olds $n = 15$	Adults $n = 15$
Pro				
mean	68 (11)	70 (10)	61 (12)	46 (15)
range	37–88 (3–28)	31–100 (3–15)	27–96 (6–30)	25–69 (5–36)
Pro ell				
mean	6 (1)	11 (2)	22 (4)	26 (8)
range	0–30 (0–4)	0–38 (0–8)	0–66 (0–12)	9–35 (4–14)
Noun				
mean	5 (0)	10 (1)	10 (1)	7 (2)
range	0–30 (0–4)	0–42 (0–8)	0–35 (0–5)	0–22 (0–8)
Nf ell				
mean	4 (1)	2 (0)	4 (0)	27 (4)
range	0–13 (0–5)	0–15 (0–3)	0–13 (0–3)	9–53 (1–14)
Noun + pro				
mean	12 (1)	3 (0)	1 (0)	1 (0)
range	0–50 (0–4)	0–33 (0–6)	0–11 (0–2)	0–2 (0–1)

subjects are shown in Figure 2.[3] These expressions include PRO, PRO ELL, NF ELL, NOUN, and NOUN+PRO.

The preferred referential expression for MA for all groups is the use of PRO. This pronoun preference for the child groups is more marked than it is for the adults. The overall effect of age is significant ($F(3,56) = 5.02$, $p < 0.003$). The adult group shows a significantly lower mean use of subject pronouns as a MA referential expression in comparison to all the child groups (five-year-olds, $p < 0.002$; seven-year-olds, $p < 0.0009$; ten-year-olds, $p < 0.02$). Our results confirm an early use of pronouns in MA contexts. But they also reveal that this preference becomes productive with development.

The use of NOUN+PRO as a MA referential expression is very infrequent. It is, however, the second preferred MA expression for five-year-olds (12%). The use of NOUN+PRO in this contexts drops sharply to 3% for the seven-year-olds and 1% for the ten-year-olds. The adult group almost never uses NOUN+PRO in a MA context. The overall effect of age is significant ($F(3,56) = 6.49$, $p < 0.008$) and is attributed to differences between the five-year-olds and all of the other age groups (seven-year-olds, $p < 0.003$; ten-year-olds, $p < 0.0007$; adults, $p < 0.0002$). It was predicted that this structure would be used rarely, given that its prototypical use is to reactivate and not maintain a referent (Lambrecht 1994).

PRO ELL is the second preferred structure for seven- and ten-year-olds. It is the third preferred structure for the adults, but almost identical in frequency to NF ELL. PRO ELL is relatively rare in the texts of the five-year-olds ($p < 0.004$). Again, there is a significant overall effect of age ($F(3,56) = 6.56$), $p < 0.0007$). The difference in frequency of PRO ELL is significant between the adults and both the five-year-olds ($p < 0.0002$) and the seven-year-olds ($p < 0.004$). There is also a significant difference between the five- and ten-year-olds ($p < 0.004$). PRO ELL, then, would appear to become a productive option after the use of PRO.

The third preferred structure for adults is NF ELL (almost identical to the frequency of PRO ELL). Of the MA expressions in the adult texts, 27% consist of NF ELL. The proportion of NF ELL for maintaining reference is much lower for all the child groups (five-year-olds, 4%; seven-year-olds, 2%; ten-year-olds, 4%). The overall effect of age is significant ($F(3,56) = 14.38$, $p < 0.0001$). The differences in frequency between the adults and all of the child groups is significant (five-year-olds, 4%; seven-year-olds, 2%; ten-year-olds, 4%). The overall effect of age is significant ($F(3,56) = 14.38$, $p < 0.0001$). The differences in frequency between the adults and all of the child groups is not significant. However, the difference between the adults and all of the child groups is significant (five-year-olds, $p < 0.0001$; ten-year-olds, $p < 0.001$). This type of referential cohesion appears to become productive later than PRO or PRO ELL.

There is no significant difference between the groups in the use of NOUN to maintain reference (five-year-olds, 5%; seven- and ten-year-olds 10%; adults 7%). The three remaining referential expressions, REL, CLEFT, and PRO…NOUN, are observed very infrequently in MA

discourse contexts across all age groups (see Appendix, Table A). This result concerning REL strengthens that found in Jisa and Kern (1998), where it is shown that subject relative pronouns are specialized for use in PROM contexts, after an initial introduction of a referent in a cleft or other presentational structure.

Reintroduction (REIN) discourse contexts

Referential expressions used by at least one group at more than 10% frequency in REIN contexts are given in Figure 3 and Table 3. The three expressions include NOUN, PRO, and NOUN+PRO.[4]

The most preferred structure for the seven- (45%) and ten-year-olds (56%) and for the adults (71%) is NOUN. The preference is most
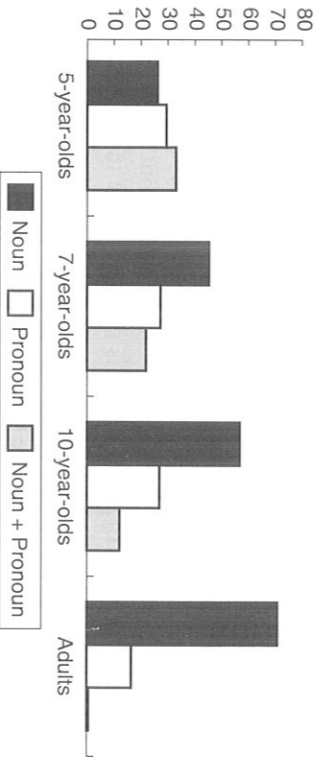

Figure 3.   Frequency distribution of referential expressions in reintroduction contexts (in percentages)

Table 3.   Mean and range of referential expressions observed in reintroduction (REIN) discourse contexts in percentages (occurrences in parentheses)

	5-year-olds $n=15$	7-year-olds $n=15$	10-year-olds $n=15$	Adults $n=15$
Noun				
mean	26 (6)	45 (10)	56 (11)	71 (22)
range	0–85 (0–27)	0–89 (0–31)	7–83 (1–32)	50–91 (5–46)
Pro				
mean	29 (7)	27 (5)	26 (5)	16 (4)
range	5–59 (1–16)	7–57	13–54 (2–13)	2–40 (1–7)
Noun+pro				
mean	33 (8)	21 (4)	11 (3)	0 (0)
range	0–65 (0–20)	0–63 (0–17)	0–56 (0–22)	0–4 (0–1)

pronounced in the adult group. NOUN is the third most preferred structure for five-year-olds (26%). The overall effect of age is significant ($F(3,56) = 7.87$, $p < 0.0002$). For all groups NOUN is more frequent in REIN contexts than in MA contexts.

Surprisingly, the use of PRO is well attested for all groups. Almost all of the pronouns in REIN contexts refer to the boy, the dog, or the boy and dog together (Jisa and Kern 1998). The few that do not refer to a principal character are observed in the five-year-olds' texts only. Reliance on this thematic-subject strategy decreases with age (29% in the five-year-olds, 27% in the seven-year-olds, 26% in the ten-year-olds), but it does not entirely disappear even in the adult group (16%). There is an overall effect of age ($F(3,56) = 3.55$, $p < 0.01$). The difference in frequency between the adults and all of the child groups is significant (five-year-olds, $p < 0.003$; seven-year-olds, $p < 0.01$; ten-year-olds, $p < 0.03$).

NOUN+PRO referential expressions are frequent in the child groups, particularly in the five- (33%) and seven-year-olds (21%). NOUN+PRO represents 11% in the ten-year-olds. This type of referring expression is almost nonexistent in the adult group. There is an overall age effect ($F(3,56) = 8.46$, $p < 0.0001$), and the five-year-olds differ significantly from the two oldest groups (ten-year-olds, $p < 0.002$; adults, $p < 0.0001$). For the two youngest age groups NOUN+PRO is a more frequent choice for REIN contexts (five-year-olds, 33%; seven-year-olds, 21%) than for MA contexts (five-year-olds, 12%; seven-year-olds, 3%). This confirms the suggestion of Hickmann and Hendriks (1999) that NOUN+PRO becomes specialized to REIN contexts for the five- and seven-year-olds.

Infrequently used expression in reintroduction (REIN) discourse contexts

Three other referential expressions, PRO ... NOUN, NF ELL, and EL NP, are infrequent in REIN contexts across all groups. The frequencies of these expressions are given in Table 4. Despite their infrequency, the results concerning these three types of expression deserve attention.

Only the five-year-olds use PRO ... NOUN "repair." It was noted earlier that the use of PRO as a REIN referential expression (indicative of a thematic subject strategy) is well represented in the five-year-olds. However, the finding concerning the PRO ... NOUN repair structures in the five-year-olds could indicate that some five-year-olds are becoming aware that pronouns in this discourse context are potentially ambiguous. Table 4 shows a few instances of PRO ... NOUN in the three oldest age groups. Table 3 indicates that the proportion of PRO alone in REIN

Table 4. *Mean and range of referential expressions observed in reintroduction (REIN) discourse contexts in percentages (occurrences in parentheses)*

	5-year-olds n = 15	7-year-olds n = 15	10-year-olds n = 15	Adults n = 15
Pro ... noun				
mean	3 (0)	0	1 (0)	0
range	0–10 (0–3)	0–3 (0–1)	0–12 (0–2)	0–4 (0–1)
Nf ell				
mean	0	0	1 (0)	3 (1)
range	0–5 (0–1)	0	0–6 (0–1)	0–13 (0–3)
El NP				
mean	0	0	2 (0)	3 (1)
range	0–5 (0–1)	0–3 (0–1)	0–20 (0–6)	0–17 (0–6)

discourse contexts remains relatively stable for the child groups. These two results greatly weaken the argument that the five-year-olds are using PRO ... NOUN to "repair" a construction. If this were the case, one would expect a decrease in the use of PRO in REIN contexts. A significant decrease in the use of PRO in REIN contexts is observed only in the adult group. One would also expect an increase across the child groups in PRO ... NOUN in REIN contexts, which is not the case. The motivation behind the five-year-old use of PRO ... NOUN remains unexplained.[5] Ashby (1994) demonstrates that repairing ambiguous reference is only one use of such right-dislocated structures. And, indeed, five-year-olds use right dislocations in MAIN contexts (see Appendix, Table A) where the possibility of ambiguous reference is seriously diminished.

NF ELL and EL NP are observed only in the two oldest groups. For both structures there is an overall effect of age (NF ELL, $F(3,56) = 5.65$, $p < 0.001$, EL NP, $F(3,56) = 2.77$, $p < 0.04$). Despite the rather unexpected infrequency of these two types of referential expression in REIN contexts (NF ELL: ten-year-olds, 1%, adults, 3%; EL NP: ten-year-olds, 2%, adults, 3%), this finding confirms the prediction. The two oldest groups increase the inventory of potential grammatical options in REIN contexts to include NF ELL and EL NP.

Discussion

This study was undertaken to show how referential expression and syntactic packaging interact. Our results confirm earlier findings concerning the early use of subject pronouns in MA contexts. PRO is the

preferred expression in MA contexts for all groups. However, with age a wider variety of referential expressions is employed. The choice of NOUN + PRO by the five-year-olds in both MA and REIN gives some support to Hickmann and Hendriks's (1999) conclusion that young narrators have not yet specialized this structure to referent reintroduction. In 12% of the MA contexts, the five-year-olds used NOUN + PRO, as opposed to 33% of their REIN expressions. Use of NOUN + PRO in MA contexts drops to 3% in the seven-year-olds, to 1% in the ten-year-olds, and to zero in the adults. Use of NOUN + PRO in REIN contexts drops to 21% in the seven-year-olds, to 11% in the ten-year-olds, and to zero in the adults. It may be possible, then, to argue that this structure becomes specialized to REIN contexts for the child groups. However, in this particular type of narrative task the adults do not specialize NOUN + PRO to REIN contexts but avoid it altogether.

It was predicted that referring expressions that indicate more cohesive links between successive clauses would increase with age. This prediction is confirmed. Both PRO ELL and NF ELL increase with age in MA contexts. Comparison of the two referential expressions reveals that PRO ELL is productive before NF ELL. In fact NF ELL in MA contexts would appear to be a productive option for the adults only. These two structures do not differ from the PRO in referential adequacy. They all require activated, definite referents. However, they do differ in the resulting connectivity. An increase in syntactic packaging is reflected in the developmental results reported here. Children use anaphoric pronouns early on, then subject ellipsis, and finally nonfinite ellipsis.

Somewhat disappointing was the infrequency of NF ELL in REIN contexts (ten-year-olds 1%, adults 3%). This kind of anticipatory grounding (Gernsbacher 1990; Givón 1995a) is not only a late acquisition, it would appear to be very rarely used even by sophisticated adult narrators. EL NP was also surprisingly infrequent in REIN contexts. It was expected that EL NP would take over some of the functional load of reactivating REIN referents. Again, this type of referring expression is a late acquisition, appearing only in the two oldest groups, and even then it is a rarely used structure in this discourse context (2% of REIN expressions for the ten-year-olds and 3% for the adults).

These results raise serious questions about the possible sources of late acquisitions. The first source, illustrated by a comparison of NF ELL and PRO ELL in MA contexts, highlights the role of development in productive control over integrative syntax (Chafe 1994). Both structures contribute to tighter syntactic cohesion and are frequent in adult production. PRO ELL in MA contexts shows a steady developmental progression (five-year-olds, 6%; seven-year-olds, 11%; ten-year-olds, 22%;

and adults, 26%). NF ELL in MA contexts, while infrequent in the children's texts (ranging between 2% and 4%), represents 27% of the referential expressions used by adults in MA contexts. Thus, it can be argued that one source of late acquisition may be found in the grammatical complexity of the cohesive structure.

However, the results also indicate that syntactic complexity cannot be the unique cause of late acquisition. While NF ELL is indeed grammatically more complex, PRO ELL is not. Both structures are indications of higher register. In the particular task examined here, it can be argued that developments both in syntax and in control over register appropriateness contribute to changes in production.

While NF ELL is frequent in MA contexts, it is extremely infrequent in REIN contexts. EL NP is also very infrequent in REIN contexts, being observed only in the texts of the ten-year-olds and the adults. This distribution highlights the fact that late acquisition must be studied not only as a reflection of syntactic complexity, but also as a reflection of frequency and function in discourse production. NF ELL does represent tighter, more integrative syntax. However, its frequency in MA discourse contexts is much higher than its frequency in REIN contexts. NF ELL in REIN contexts constitutes cataphoric reference, or "anticipatory grounding" (Gernsbacher 1990; Givón 1995a). The identity of the subject of the dependent clause is pending until completion of the following independent clause. In contrast, NF ELL in MA contexts constitutes anaphoric reference. Ongoing research on written and spoken French of children and adults (Gayraud et al. forthcoming) suggests that nonfinite ellipsis in cataphoric referential contexts is found almost exclusively in adult written discourse where temporal constraints on active memory are greatly reduced.

An equally important factor to consider in understanding the acquisition of infrequent constructions is individual variation in narrative style. For instance, the use of EL NP ("as-for" or "about"-type constructions) is found infrequently and only in the ten-year-old and adult texts. Both groups show a considerable range of occurrence, with some narrators never using EL NP and others showing as many as six occurrences.

Conclusion

The motivation for this study was to highlight the role of syntax in the developing ability of children to maintain and reintroduce already activated referents in narrative discourse. It was shown that in discourse contexts requiring subject maintenance, both subject ellipsis and nonfinite

subordination increase with age. Both of these structures contribute to tighter syntactic cohesion of information, with subject ellipsis preceding nonfinite subordination in development. Thus, the results argue for a developmental increase in the capacity to package information through syntax (Berman and Slobin 1994).

However, both of these structures are also more characteristic of formal varieties of French monologues than of informal dialogue discourse. It was shown that the use of left-detachment structures for the reintroduction of subjects decreases with age and is almost absent altogether from the adult texts. Although this structure is pragmatically motivated and grammatically acceptable, it is not part of an adult's repertoire for this particular narrative situation.

In producing narrative texts, speakers must make a number of decisions that have ramifications on the forms chosen to encode information. Decisions concerning the status of the referent (e.g. new, old, accessible, activated) must be made to insure appropriate introduction, maintenance, and reintroduction of referents (Levelt 1989). However, encoding of that information opens up another array of decisions. It is this last type of decision, which determines what narrators actually produce, that was examined here.

The results obtained necessitate two different kinds of developmental explanation. One explanation is that, with development, children acquire increasing productive control over the more compact syntactic means for encoding information. The second explanation is that, with development, children acquire more finesse in adapting the expression of information to the conventional register appropriate to the task.

Appendix

Table A. *Mean percentages (mean number) of referential expressions observed in maintain (MA) discourse contexts*

		5-year-olds n = 15	7-year-olds n = 15	10-year-olds n = 15	Adults n = 15
Pronoun	mean	0.68 (11)	0.70 (10)	0.61 (12)	0.46 (15)
	SD	0.14 (6)	0.21 (3)	0.20 (6)	0.15 (9)
	range	0.37–0.88 (3–28)	0.31–1.00 (3–15)	0.27–0.96 (6–30)	0.25–0.69 (5–36)
Pronoun ellipsis	mean	0.06 (1)	0.11 (2)	0.22 (4)	0.26 (8)
	SD	0.09 (1.5)	0.13 (2)	0.21 (3)	0.08 (3)
	range	0–0.30 (0–4)	0–0.38 (0–8)	0–0.66 (0–12)	0.09–0.35 (4–14)
Nonfinite ellipsis	mean	0.04 (1)	0.02 (0)	0.04 (0)	0.27 (4)
	SD	0.04 (1)	0.04 (0)	0.05 (1)	0.12 (3)
	range	0–0.13 (0–5)	0–0.15 (0–3)	0–0.13 (0–3)	0.09–0.53 (1–14)
Relative subject pronoun	mean	0.01 (1)	0.01 (0)	0	0.02 (0)
	SD	0.06 (1)	0.02 (0)	0	0.02 (1)
	range	0–0.26 (0–5)	0–0.07 (0–1)	0	0–0.08 (0–4)
Noun	mean	0.05 (0)	0.10 (1)	0.10 (1)	0.07 (2)
	SD	0.10 (1)	0.14 (2)	0.09 (1)	0.06 (2)
	range	0–0.30 (0–4)	0–0.42 (0–8)	0–0.35 (0–5)	0–0.22 (0–8)
Noun + pronoun	mean	0.12 (1)	0.03 (0)	0.01 (0)	0
	SD	0.13 (1)	0.08 (1)	0.03 (0)	0
	range	0–0.50 (0–4)	0–0.33 (0–6)	0–0.11 (0–2)	0
Cleft	mean	0.01 (0)	0.01 (0)	0.04 (0)	0
	SD	0.03 (0)	0.04 (0)	0	0
	range	0–0.10 (0–2)	0–0.16 (0–1)	0	0
Pronoun ... noun	mean	0.01 (0)	0	0	0
	SD	0.03 (0)	0	0.01 (0)	0
	range	0–0.12 (0–2)	0	0–0.05 (0–1)	0

Table B. *Mean percentages (mean number) of referential expressions in reintroduction (REIN) discourse contexts*

		5-year-olds n = 15	7-year-olds n = 15	10-year-olds n = 15	Adults n = 15
Noun	mean	0.26 (6)	0.45 (10)	0.56 (11)	0.71 (22)
	SD	0.31 (8)	0.28 (9)	0.28 (8)	0.12 (9)
	range	0–0.85 (0–27)	0–0.89 (0–31)	0.07–0.83 (1–32)	0.50–0.91 (5–46)
Pronoun	mean	0.29 (7)	0.27 (5)	0.26 (5)	0.16 (4)
	SD	0.15 (4)	0.14 (2)	0.10 (2)	0.08 (2)
	range	0.05–0.59 (1–16)	0.07–0.57 (2–8)	0.13–0.54 (2–13)	0.02–0.40 (1–7)
Noun + pronoun	mean	0.33 (8)	0.21 (4)	0.11 (3)	0 (0)
	SD	0.23 (6)	0.22 (5)	0.18 (6)	0.01 (0)
	range	0–0.65 (0–20)	0–0.63 (0–17)	0–0.56 (0–22)	0–0.05 (0–2)
Pronoun ... noun	mean	0.03 (0)	0 (0)	0.01 (0)	0 (0)
	SD	0.04 (0)	0.01 (0)	0.03 (0)	0.01 (0)
	range	0–0.12 (0–3)	0–0.03 (0–1)	0–0.12 (0–2)	0–0.05 (0–2)
Cleft	mean	0.02 (0)	0.02 (0)	0.01 (0)	0.01 (0)
	SD	0.03 (0)	0.04 (1)	0.02 (0)	0.03 (0)
	range	0–0.10 (0–2)	0–0.16 (0–6)	0–0.09 (0–1)	0–0.04 (0–1)
Topic pronoun + pronoun	mean	0.01 (0)	0	0	0
	SD	0.04 (1)	0	0.02 (0)	0
	range	0–0.18 (0–6)	0	0–0.09 (0–1)	0–0.09 (0–32)
Nonfinite ellipsis	mean	0	0	0.01 (0)	0.03 (1)
	SD	0	0	0.02 (0)	0.04 (1)
	range	0	0	0–0.09 (0–1)	0–0.13 (0–3)
Elaborated noun phrase	mean	0	0	0.02 (0)	0.03 (1)
	SD	0.01	0	0.05 (0)	0.05 (1)
	range	0–0.05 (0–1)	0	0–0.20 (0–6)	0–0.17 (0–6)
Relative subject pronoun	mean	0.02 (0)	0.01 (0)	0	0.02 (0)
	SD	0.02 (0)	0.02 (0)	0.01	0.03 (1)
	range	0–0.06 (0–1)	0–0.07 (0–2)	0–0.06 (0–2)	0–0.12 (0–4)

Notes

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1. The discrepancy between the figures cited in Jeanjean (1980a, 1980b) and Lambrecht (1984) is the result of slightly different criteria for counting the noun subject plus subject-clitic structures.
2. In this example, as in many others, an object clitic (le) is also present in the clause. The coding is sensitive to subject arguments only.
3. See Appendix, Table A, for full results concerning potential referential expressions in MA contexts.
4. Further details on all the referential expressions observed in REIN contexts are given in Appendix, Table B.
5. I wish to express my sincere gratitude to an anonymous reviewer for pointing out this unresolved problem.

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