J. Child Lang. **25** (1998), 623–652. Printed in the United Kingdom
© 1998 Cambridge University Press

Relative clauses in French children's narrative texts*

HARRIET JISA AND SOPHIE KERN
Dynamique du langage (*UMR 5596, CNRS*) & *Université Lumière – Lyon 2*

(*Received* 2 *January* 1996. *Revised* 19 *March* 1998)

ABSTRACT

This study investigates the use of relative clauses in French children's narrative monologues. Narrative texts were collected from French-speaking monolinguals in four age groups (five, seven, ten years and adults). Twenty subjects from each group were asked to tell a story based on a picture book consisting of twenty-four images without text (*Frog, Where are you?*). Relative constructions were coded following the categories defined by Dasinger & Toupin (1994) into two main functional classes: general discourse and narrative functions. The results show that the use of relative clauses in general discourse functions precedes their use in more specific narrative functions. An analysis of textual connectivity (Berman & Slobin, 1994) in one episode reveals that children and adults differ in their choice of preferred structures. The results also show that children use fewer transitive predicates in relative clauses than do adults. Transitive verbs are essential for advancing the narrative plot (Hopper & Thompson, 1980). While subject relative clauses are acquired early and used frequently, the development of their multifunctional use in diverse narrative functions extends well beyond childhood.

INTRODUCTION

It would be an error to confuse emergence or first uses of a given form with subsequent development of that form. Early use of a particular grammatical structure paves the way for mastery of other possible functions that structure

[*] Portions of this study were presented at the First Lisbon Meeting on Child Language with Special Reference to Romance Languages, Faculdade de Letras, Universidate de Lisboa, 14–17 June 1994. The authors would like to express their gratitude to Ruth Berman for her numerous remarks and suggestions on earlier versions and to two anonymous reviewers for their extensive comments on many aspects of this work. Address for correspondence: Harriet Jisa, Dynamique du langage (UMR 5596 – CNRS), Maison Rhône-Alpes des Sciences de l'Homme, 14, avenue Berthelot, 69363 Lyon Cedex 07, France, e-mail; jisa@uni-lyon2.fr

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

can serve. A given form emerges within a limited set of contexts and with a limited set of functions. Over time that same form will take on new functions in new contexts (*cf.* Karmiloff-Smith, 1979). The study presented here will examine how children use a relatively easy and early acquired structure – the subject relative clause in French. We consider the increase in range of functions as a reflection of development in both syntactic and narrative competence. Based on narrative texts, we consider two categories of functions: general discourse functions and narrative functions (Dasinger & Toupin, 1994). We will show that the use of relative clauses is constrained by at least three factors. First, in production children avoid relative structures other than right branching subject relatives. Second, relative clauses come into competition with a host of other structural options used to package episodic chunks of discourse (Berman, 1986; de Weck, 1991; Berman & Slobin, 1994). Third, children avoid transitivity in relative constructions and, thus, avoid their use in foregrounded, plot advancing clauses (Hopper & Thompson, 1980). Thus, we aim to show that while subject relatives are early acquired structures, the development of their functions in narrative texts tells quite a long developmental story.

Relative clauses (RCs) have been described as having two major purposes in discourse: a referential or head-noun modification 'restrictive' function and a predicating 'non-restrictive' function (Comrie, 1981; Lambrecht, 1988; Dasinger & Toupin, 1994). In their restrictive uses, RCs identify or further specify the antecedent head noun. In their non-restrictive uses, they predicate or comment on something about an already identified antecedent.

(1) L'homme qui a eu un accident est mort
'the man that had an accident is dead'
(2) L'homme/Pierre, qui a tué sa femme, est en prison
'the man/Pierre, who killed his wife, is in prison'

In (1) the RC serves to delimit the referent. The speaker assumes that *l'homme* ('the man') is insufficient to identify the man in question and indicates specifically which man is being talked about in the RC. In (2), the non-restrictive relative clause, the RC serves to give additional information about an antecedent assumed to be known to the hearer. In English, non-restrictive RCs are set off intonationally from the main clause and require the relative pronoun *who* (or *which*, *whom*, *whose*) (Comrie, 1981). As Comrie explains, despite the fact that the two constructions are syntactically very similar, they are radically different in semantic and pragmatic terms. Further, he comments that most languages have either no formal distinction between the two constructions, or, as is the case in French, only an intonational distinction. The same set of obligatory relative pronouns, inflected for their grammatical role in the RC, are used in restrictive and non-restrictive French RCs.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

A very common form for introducing new referents in spoken French is the use of an existential expression or another predicate in a main clause, followed by a relative clause which promotes the new referent to subject of the following clause. Examples taken from picturebook based stories told by a five-year-old and an adult are given in (3) and (4):

(3) y a des mouches qui viennent (5;08j[1])
'there are some flies that come'
(4) il tombe sur un cerf qui l'encorne (20d)
'he falls on a stag who horns him'

In (3) an existential structure (*y a* 'there are') introduces a new referent, *des mouches* ('some flies'), onto the scene. The verb in the subsequent RC is intransitive and establishes no argument relation between the flies and other participants in the story. In (4) a new referent, *un cerf* ('a stag'), introduced post-verbally in the main clause, serves as the antecedent for the subsequent RC. The verb in the RC shown in (4) is transitive and predicates a relationship between the *cerf* ('stag') as the agent of the action and *l'* (object clitic 'him') as the patient. The agent has a high level of intentional control over the action which completely affects a highly individual patient. These characteristics of the agent, the action and the patient are instrumental in the definition of a high degree of transitivity proposed by Hopper & Thompson (1980). In their study of adult narrative discourse, the authors show that a high degree of transitivity is characteristic of foregrounded, narrative advancing clauses. In both (3) and (4) the referent is unknown to the hearer and the RCs can be considered restrictive. There is, however, a very big difference in their roles in the narrative. Whereas (3) simply introduces a new character into the story, (4) introduces a new character into the story AND expresses an event which advances the narrative plot.

There are a number of very important pragmatic differences between the uses of RCs in French and English. Right-branching RCs are used very commonly as focusing structures in French conversational discourse. Spoken French shows a tight pragmatic constraint: new referents are introduced in post-verbal position (Lambrecht, 1988; Kern, 1997). If that new referent is promoted to subject or topic status in the subsequent clause, it can be pronominalized, through the use of either an anaphoric pronoun or a relative pronoun ((3) and (4)). In contrastive contexts, Lambrecht (1994) compares topic focus ('argument focus') structures in English, French and Italian. The contrast between English and French is illustrated in (5a) and (5b) (italicized items indicate stress).

[1] The age of the child narrator is indicated in years and months. The letter following the age identifies the individual child in each age group. Adults are indicated by 20, followed by a letter for individual identification. In extended extracts, a subject code is indicated on the last French line.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

(5) I heard your motorcycle broke down.
  a. My *car* broke down.
  b. C'est ma *voiture* qui est en panne.

In (5a) and (5b) a new referent, *car/voiture* is introduced in contrast to *motorcycle*. While English prefers prosodic stress on the new topic, French prefers prosodic stress AND the right-branching RC construction. Right-branching RCs are also important for focusing on an entire event. Compare Lambrecht's English (6a) and French (6b) examples of what he calls 'sentence focus'.

(6) What happened?
  a. My *car* broke down.
  b. J'ai ma voiture qui est en panne.

Again, where English prefers stress, French prefers stress AND the RC construction. Right-branching RCs in French, then, are heavily solicited, pragmatically motivated structures.

Comprehension studies of relative clauses: relative clause types

A number of hypotheses have been advanced to explain results from studies of the comprehension of RCs (*cf*. Bowerman, 1979). These studies have considered both the embeddedness of the RC (centre-embedded vs. right branching) and the grammatical role of the head noun in the RC (subject vs. object). Such considerations yield four RC types, illustrated in English and French in (I) to (IV):

CENTRE-EMBEDDED

Head noun subject

I S–S *The dog* that chases the cat bites the girl.
'*Le chien* qui chasse le chat mord la fille'

Head noun object

II S–O *The cat* that the dog chases scratches the girl.
'*Le chat* que le chien chasse griffe la fille'

RIGHT BRANCHING

Head noun subject

II O–S The dog bites *the girl* that kisses the cat.
'*Le chien* mord la fille qui embrasse le chat'

Head noun object

IV O–O The dog bites *the cat* that the girl kisses.
'*Le chien* mord le chat que la fille embrasse'

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

S–S and S–O are centre-embedded, while O–S and O–O are right branching. The head nouns in S–S and O–S function as the grammatical subject in the RC, while in S–O and O–O the head noun functions as the object in the RC.

To explain errors in three— to five-year olds' comprehension of RCs in an acting out task, Sheldon (1974) proposed the parallel function hypothesis. This hypothesis predicts that comprehension is easier when the head noun has the same grammatical role in the main clause and the embedded clause. Fewer errors were made on RC types (I) and (IV) than on (II) and (III). In RC types (I) and (IV) the function of the head noun in the RC and in the main clause are the same whereas in (II) and (III) the functions differ. The order of acquisition proposed is RC types (I) and (IV), followed by (II) and (III).

Tavakolian (1981), using an acting-out task with three- to five-year-olds, found essentially the same order of acquisition. However, Tavakolian claims that the conjoined clause analysis is a better explanation for a detailed analysis of the observed errors. Children consider the first noun as subject of both the first and second verb. This interpretation strategy yields systematically correct responses for RC type (I) and systematically incorrect responses for RC type (II). Children interpret relative clauses relying on the linguistic knowledge and processing strategies which they currently use for simple, conjoined sentences (Clancy, Lee & Zoh, 1986).

Other research did not find the same order of difficulty. In an acting-out task used to examine comprehension of three- to five-year olds, de Villiers, Tager-Flusberg, Hakuta & Cohen (1979) found no difference in difficulty between RC types (I) and (III). To account for their results the authors propose a semantic processing heuristic whereby children interpret incoming Noun–Verb–Object strings as agent–action–object. In RC types (II) and (IV), where two nouns come together with no intervening verb, this processing heuristic is blocked due to a word order change in the RC.

Notice that in French, the relative pronouns differ according to the grammatical function of the head in the RC, *qui* marks the subject head noun (I and III) while *que* marks the object head noun (II and IV). However, in a comprehension study of French children Cohen-Bacri (1978) did not find that this morphological distinction created any particular difficulty for children from six to twelve years of age. With both *qui* and *que*, more errors of interpretation were attributed to center-embedded RCs (I and II) than to right branching RCs (III and IV).

Transitivity in the embedded RC has also been underscored as contributing to difficulty in comprehension studies of RCs. Using toy manipulation experiments to test English-speaking four- and five-year-olds; comprehension of RCs, Goodluck & Tavakolian (1982) show that complexity of the internal structure of the RC results in more errors of interpretation.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

The two measures of complexity singled out are animacy and transitivity. When the RC has both an animate subject and object (i.e. *the dog bites the horse that licks the sheep*), the most frequent error type observed is the interpretation of the subject of the RC as correferential with the subject of the main clause. These errors drop significantly when the object in the RC is inanimate (i.e. *the dog bites the horse that eats the grass*) and when the verb in the RC is intransitive (i.e. *the dog bites the horse that neighs*). The authors attribute the greater number of errors to increased processing load of RCs containing transitive verbs and animate objects.

We will examine our production data in light of these findings from comprehension studies. One of the first questions we will address concerns the distribution of different RC types in production. The child narrators in our study are not INTERPRETING the meaning of RCs, they are CREATING meaning using a particular form. We expect the results from our production study to highlight the role of production factors due to the internal structure of the RC. If the processing load explanation proposed by Goodluck & Tavakolian (1982) for comprehension can be extended to production, we can expect children to produce intransitive RCs before transitive RCs. As shown in (3) and (4), the presence of a transitive verb in the relative clause has ramifications for the expression of events in the narrative.

In addition, we expect a production preference for right-branching RCs to mirror Cohen-Bacri's (1978) findings for comprehension. Right-branching RCs are heavily exploited constructions for introducing new referents in French conversational discourse. Based on a comparison of RCs in Italian and English, Bates & Devescovi (1989) suggest that certain types of constructions may be fixed in a given language as a kind of 'linguistic habit'. They argue that if a structure is used frequently in certain contexts, its accessibility for use in other contexts may be strengthened. Given the frequent use of RCs as topicalizing structures in conversational contexts, we predict that French children will use these structures precociously in monologue narrative contexts.

Relative clauses in narratives

There is an important difference between the comprehension studies of RCs reviewed above and the RCs used in narratives. The comprehension studies required children to select appropriate pictures or to act out the events reported in the RC. Telling a story based on a series of pictures is a very different kind of task. RCs in two- and three-year-olds have been shown to specify or describe objects or persons (Bloom, Lahey, Hood, Lifter & Fiess, 1980). They are not reported as combining temporally or causally related events required for narrative discourse. This does not mean that children are unable to combine such semantically related events in narrative texts. They

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

prefer combining clauses using coordination, conjunctions such as *and* ('et') or *then* ('puis') (Bloom *et al.*, 1980; Jisa, 1984/85, 1987; Berman, 1990).

In a study of frog stories produced in five languages (English, German, Hebrew, Spanish and Turkish), Dasinger & Toupin (1994) underscore the necessity of considering both formal and functional complexity. They argue that formal complexity, such as case marking on the relative pronoun, changes in word order and modifications on the verb in the embedded RC, explains why young child speakers of German and Turkish avoid RCs. The lack of this formal complexity explains why young Hebrew and Spanish speakers use RCs early on. The authors, however, also show that function of the RC in the narrative text results in another type of complexity. They propose two main functional categories, defined and illustrated with examples from our texts on Table 1.

There are two main functional categories: general discourse functions and more specific narrative functions. General discourse functions refer to RC constructions that are used essentially to introduce or reintroduce referents. Dasinger & Toupin suggest that since these structures are found in conversational dialogue, they will be among the earliest to appear in monologue texts. Speakers in all types of situations must identify new referents (SIT-NEW), and reidentify old referents (SIT-OLD), and they also must activate information relevant to the presence of a reestablished referent (REID). As we saw earlier, French RCs are particularly solicited constructions in these general discourse functions.

In the course of telling a story, proficient narrators, however, must do more than track referents. As a result, RCs – and other syntactic structures as well – take on additional functions in the context of narratives. The first narrative function, presenting main characters (PRES), is the case in which one of the three principal protagonists (the boy, the dog, or the frog) is introduced in a postverbal position and serves as the head of a subsequent RC. Relative constructions can also provide the 'enablement condition' for the event expressed in the main clause (Zoriqueta, 1988, cited in Dasinger & Toupin, 1994) by providing the motivation for an action reported in the main clause (MOT). They can also advance the narrative by expressing the consequence of the action expressed in the main clause (CONT). RC constructions can be used to set up expectations about upcoming narrative events and build suspense into the narrative (EXP). And finally, relative constructions can encode an abstract or coda (Labov, 1972), in which a narrator attempts to sum over a particular series of complicating actions in order to relate their significance to the point of the story or to anticipate complicating actions yet to come (SUM).

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

TABLE 1. *Definitions of the functions of relativizing structures* (based on Dasinger & Toupin 1994: 461–75)

GENERAL DISCOURSE FUNCTIONS

Naming referents (NAME)
The head of the relative clause makes reference to a general category expressed by an indefinite expression, i.e. *something* ('*quelque chose*') which is then specified in the relative clause.

20b y a quelque chose QUI PEND DE L'ARBRE
'there's something that hangs from the tree'

Situation new referents (SIT–NEW)
A new referent (other than one of the three main characters) is introduced in a main clause in a position other than subject or topic. The subordinate relative clause provides further information about its existence or appearance on the scene.

05;8j y a des mouches QUI VIENNENT
'there are some flies that come'

Situating old referents (SIT–OLD)
The relative clause serves to reintroduce a referent already introduced into the story.

7;0r puis après y avait plein d'abeilles QUI ÉTAIENT SORTIES
'then after there were lots of bees that had come out'

Reidentifying old referents (REID)
The relative clause reactivates old information concerning an already introduced referent.

7;10p pis y en a un qui – celui QUI EST À EUX il dans ses pieds
'then there was one who – the one who was their's he was in his feet'

NARRATIVE FUNCTIONS

Presenting main characters (PRES)
The main clause introduces one of the three principal characters (the boy, the dog, the frog) in post verbal position. The character noun serves as the head of a relative clause which introduces relevant information about the character.

7;0r y a un chien QUI REGARDE DANS UN POT
'there is a dog who looks in a pot'

Motivating or enabling narrative actions (MOT)
The relative clause expresses an event or a state that precedes the event in the main clause. The event in the relative motivates the event in the main clause. The relative can contain information concerning the physical possibility of the event in the main clause or can give an explanation for it. In French, participles are often found in this function.

20d le petit garçon NE TROUVANT PAS SA GRENOUILLE À LA MAISON il va la chercher un peu dehors

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

'the little boy not finding his frog at the house goes to look for her a little bit outside'

Continuing the narrative (CONT)
The relative clause gives the consequence of the action expressed in the main clause. It serves to advance the narrative plot.

20f i se retrouve sur la tête d'un grand cerf QUI L'EMMENA JUSQU'À UN PRÉCIPICE
'he finds himself on the head of a big stag who takes him up to a fall-off'

Setting up expectations about narrative entities and events (EXP)
The relative clause creates an expectation about what is to follow. In French the head of this type of relative is often a demonstrative pronoun, *ce qui* ('that/this which').

20e ce QUI DEVAIT ARRIVER arriva
'that which should have happened happened'

Summing over past or upcoming events (SUM)
The relative clause summarizes past events or events which are to come.

20f c'est l'histoire du petit garçon QUI A PERDU SA GRENOUILLE
'it's the story of the little boy who lost his frog'

Relative clauses and packaging

RCs express multiple semantic and discursive functions. These same functions, however, can be signalled by other constructions. Much research has been devoted to the development of young narrators' ability to introduce and maintain referents in narrative texts (Karmiloff-Smith, 1986; Hickmann, 1987; Kail & Hickman, 1992; Hickmann, Kail & Roland, 1995). Presentational RCs, as we have already seen are very common constructions for introducing new referents.

Maintaining reference in subject position involves a host of other structures, including full noun phrases, anaphoric pronouns, subject ellipsis and relative pronouns. All of these forms contribute to connectivity (Berman & Slobin, 1994). Relative pronouns and subject ellipsis differ from full nouns and anaphoric subject pronouns in that they establish tighter packaging between events by establishing a hierarchical relationship between the two clauses (Berman & Slobin, 1994). Dasinger & Toupin (1994) argue that the number of alternative structures available for various functions affects the proportion of RC usage. Speakers (and languages) can show expressive references for one structure over another.

Proficient narrators must introduce new referents, maintain referents and switch referents. As mentioned earlier, in spoken French new referents are generally introduced in either presentational structures or post-verbal position. When the new introduced referent is promoted to subject of the

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

next clause there are three structural options for marking co-referential subjects: repetition of the noun, pronominalization, or relativization.

(7) Hier j'ai vu un homme.
(et) l'homme m'a donné un bonbon.
(et) il m'a donné un bonbon.
qui m'a donné un bonbon.
Yesterday I saw a man.
(and) the man gave me a piece of candy.'
'(and) he gave me a piece of candy.'
'who gave me a piece of candy.'

When maintaining a referent in subsequent clauses, subject ellipsis is added to the inventory of structural options.

(8) Hier j'ai vu un homme qui m'a donné un bonbon.
(et) l'homme est parti en courant.
(et) il est parti en courant.
(et) qui est parti en courant.
(et) est parti en courant.
'Yesterday I saw a man who gave me a piece of candy.
(and) the man ran away.'
'(and) he ran away.'
'(and) who ran away.'
'(and) ran away'

These structural options for introducing and maintaining referents across clauses create referential cohesion (Halliday & Hasan, 1976) in clause combining. We will investigate how choice of structural option varies with referential context across ages, predicting that with development narrators will select tighter forms (relative pronouns and subject ellipsis) to syntactically package events.

Dasinger & Toupin point to an additional factor which influences the use of RCs: increasing competence in the expression of narrative organization. A particularly salient unit in children's cognitive representations of stories is the episodic level of narrative structure (*cf.* Mandler & Johnson, 1977; Mandler, 1978; Stein & Nezworski, 1978; Bamberg & Marchman, 1990; Hickmann, Kail & Roland, 1995). Young children construct cognitive representations of stories as sequentially organised episodic chunks (Fayol, 1985; Bamberg & Marchman, 1990; Hickmann, Kail & Roland, 1995; van der Lely, 1997). The episodic level has also been shown to have ramifications on the use of linguistic forms. For example, young children's use of pronouns to maintain reference within episodes is more frequent than is their use to maintain reference across episodes (Hickmann, Kail & Roland, 1995). One might expect that since anaphoric pronouns are used more frequently to

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

maintain reference within episodes, they open that slot for other structures, such as relative pronouns, with similar textual functions.

From a structural point of view, right-branching subject RCs in French are easy to form. The invariable subject relative pronoun (*qui*) is placed directly after the antecedent. Canonical subject–verb–(object) word order is maintained in the relativized clause. No modification of the verb form is required in the relativized clause. These structural phenomena are important in determining productive difficulty (Dasinger & Toupin, 1994). And indeed, we shall see that subject RCs are early acquired structures in French. The diversity of functions attributed to these structures, however, increases with development. We argue that development of syntax in a narrative task, such as the one discussed here, can only be understood through careful attention to children's increasing ability to package complex relations between elements in narrative discourse.

We begin by describing the narrative data used for the study. Second, using the coding procedures proposed by Dasinger & Toupin (1994), we analyse the distribution of RCs in our sample. Third, we analyse RCs in their role as one of many cohesive structures used in one episode. We then attempt to establish a relationship between narrative functions of RCs and one feature of their internal complexity, the use of transitive verbs. We conclude that while subject relatives are early acquired structures in French, mastery of their internal complexity, which in part determines their functions in narrative discourse, extends well beyond childhood.

METHOD

Procedure

The data consist of narrative monologues collected using a picture book task (Berman & Slobin, 1994: 17–35). One researcher shows the child a book, *Frog, Where are you?* (Mayer, 1969), which consists of twenty-four pictures without text. The pictures relate the adventures of a boy and his dog in their search for their runaway frog. The child 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 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. The narrative texts are transcribed in clauses using the format given by Berman & Slobin (1994).

The transcripts were coded for: (i) the number and type of relativizing structures; (ii) their discourse and narrative function; (iii) their role in syntactic packaging; and (iv) their internal complexity as determined by the absence or presence of a transitive verb. For (ii) Dasinger & Toupin's coding

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

scheme as outlined in the Introduction was used. Each RC was coded for function independently by the two authors. Cases in which the same RC was coded differently were discussed to reach agreement. For (iii) a system for analysing referential cohesion in one episode (the 'deer' episode) was developed to compare the use of four structural options: NOUN, PRONOUN, relative constructions (RC) and subject ELLIPSIS in the four referential contexts: INTRODUCTION, PROMOTE, MAINTAIN and SWITCH. PROMOTE refers to the mention of the referent as subject of a successive clause directly following a nominal INTRODUCTION in a postverbal position. MAINTAIN refers to all subsequent mentions of the boy, the deer or the boy as the subject of the successive clauses through the use of a noun, an anaphoric pronoun, a relative pronoun, or subject ellipsis. SWITCH refers to a change of referent in subject position. (9) and (10), taken from the data, illustrate these referential contexts.

(9) INTRODUCTION
et donc il s'retrouve sur la tête d'un grand cerf
'and so he finds himself on the head of a big stag'
PROMOTE – RC
qui est pas du tout content
'who is not at all happy'
MAINTAIN – PRONOUN
et il commence à courir vers un précipice
'and he starts to run towards a cliff'
MAINTAIN – PRONOUN
'and he stops abruptly'
SWITCH – NOUN
et le petit Pierre il tombe dans l'eau avec son chien (20a)
'and the little Peter, he falls into the water with his dog'

(10) INTRODUCTION
en fait c'est un cerf
'in fact it's a stag'
PROMOTE – PRONOUN
il le prend sur sa tête
'he takes him on his head'
MAINTAIN – ELLIPSIS
et s'enfuit
'and speeds away'
SWITCH – NOUN
le petit chien court après eux
'the little dog runs after them'
SWITCH – NOUN
le cerf stoppe près d'une dénivellation

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

'the stag stops close to a fall-off'
MAINTAIN – ELLIPSIS
et fait tomber le chien et le petit garçon (20c)
'and makes the dog and the little boy fall'

Cases in which the clause contained a pronoun in subject position and a coreferential full noun dislocated at the end of the clause were coded as PRONOUN. An example is given in (11), with the dislocated elements underlined.

(11) INTRODUCTION
il y a un animal
'there is an animal'
PROMOTE – RC
qui le prend
'who takes him'
MAINTAIN – PRONOUN
et il court
'and he runs'
MAINTAIN – PRONOUN
il court *cet animal*
'he runs this animal'
SWITCH – NOUN
le chien le suit
'the dog follows him'
MAINTAIN – PRONOUN
et hop il tombe *le chien*
'and whoops he falls the dog'
SWITCH – NOUN
et le petit garçon tombe avec son chien (7;90)
'and the little boy falls with his dog'

As noted by Karmiloff-Smith (1981), these 'repairing' structures often indicate that the child is aware of a problem with reference. Only five instances of these structures were observed in the deer episode: 2 in the five-year-olds, both in SWITCH contexts, and 3 in the seven-year-olds, 1 in a SWITCH context and 2 in a MAINTAIN context (illustrated in (11)).

Subjects

The population consists of four groups of twenty subjects each: five-year-olds (mean age 5;5, age range 5;0–5;11), seven-year-olds (mean age 7;5, age range 7;0–7;10), ten-year-olds (mean age 10;10, age range 10;2–11;8) and young adults (mean age 21, age range 19–26), all middle class monolingual speakers of French. The majority of the texts were recorded in the child's

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

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. Table 2 provides the mean ages, the age range, and the mean length of narrative texts produced.

TABLE 2. *Number, age of subjects and text length in clauses*

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
N	20	20	20	20
Mean age	5;5	7;5	10;10	21
Age range	5;0–5;11	7;0–7;10	10;2–1;8	19–26
Mean length (in clauses)	51	50	52	77
Length range	31–76	27–65	30–72	49–145

RESULTS AND ANALYSIS

Relativizing structures in the narrative texts

The term 'relativizing structures' as used here refers to a family of constructions with similar functions (Comrie, 1981, Dasinger & Toupin, 1994). In order to align our work with that of Dasinger & Toupin, we initially considered relative pronoun structures, participles and infinitives as members of a family of relativizing constructions. Examples of such constructions found in our sample are given in Table 3.

TABLE 3. *Constructions belonging to the family of relativizing structures*

RELATIVE PRONOUNS	
QUI	et après y a des mouches QUI viennent (05;08j) 'and after there are some flies that come'
QUE	le garçon avait apparemment capturé une petite grenouille QU'il avait mis dans un bocal (20c) 'the boy had apparently captured a little frog that he had put in a jar'
OÙ	il y a un chevreuil là OÙ il croyait que c'était des branches (11;08g) 'there is a deer there where he thought that it was branches'
PREPOSITIONAL	
	il y a un trou dans le sol SUR LEQUEL la garçon se penche (20th) 'there is a hole in the ground over which the boy leans'
PARTICIPLES	
past	le cerf PRIS DE PEUR se met à courir très vite (20g) 'the stag taken by fear sets off running very fast'
PRESENT	le cerf s'arrête en haut d'un ravin FAISANT TOMBER le petit garçon ainsi que son chien au fond du ravin (20m) 'the stag stops at the top of a ravine making the little boy as well as his dog fall into the bottom of the ravine'
'INFINITIVES'	
	il regarde les abeilles *voler* (05;05g) 'he watches the bees (to) fly'

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

TABLE 4. *Use of relativizing structures*

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
N	20	20	20	20
Subjects using RCs	85 %	95 %	85 %	100 %
Mean RCs per subject	3·35	2·42	3·3	6·8
Mean % of RCs per total clauses	6·5	4·6	5·91	6·83
Range of mean %	(2–25·5)	(1·5–10·8)	(2·2–18·4)	(2·8–17)

Table 4 provides quantitative information on the distribution of RCs in the French corpus, including the percentage of subjects who used RCs, and the mean number of RCs produced by those subjects who used RCs. Also given in Table 4 are the mean percentage of RCs per total clauses in the text, as well as the range of this percentage. Compared to the Dasinger & Toupin's (1994) study of RCs used in frog stories in five other languages (Spanish, Hebrew, German, English and Turkish), French patterns like Hebrew and Spanish, that is, children use RCs early on and across all ages RCs are used frequently. However, our French five-year-olds differ from Hebrew- and Spanish-speaking five-year-olds in two respects. A larger percentage of the French children use RCs and they show a higher mean percentage of usage. One of the arguments advanced by Dasinger & Toupin to explain the early and frequent use of RCs in Spanish and Hebrew is that they have invariable relative pronouns, respectively, *que* and *she*. In French, the relative pronoun differs as a function of the grammatical role of the head noun in the RC. However, essentially one relative pronoun, the subject relative *qui*, is used in our French narratives. The subject relative pronoun, *qui*, follows its antecedent and the RC preserves SV(O) order. The actual distribution of the relative structures by type is given in Table 5.

TABLE 5. *Distribution of relativizing structures by occurrence and by construction type*

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
Number of subjects using RCs	17	19	17	20
Relative pronouns				
qui	45	41	45	104
que	5	1	2	17
où		2	2	4
prepositional				6
Participles	1		4	9
'Infinitives'	4	2	3	

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

Relative pronouns

As can be seen in Table 5, subject relative constructions predominate across age groups. The object relative pronoun *que* also follows its antecedent. Word order in the object RC changes to OSV. The final vowels in *qui* (subject relative pronoun) and in *que* (object relative pronoun) are elided when followed by a word that starts with a vowel, *qui il* → *qu'il* (/kil/) or *qu'i* (/ki/) and *que il* → *qu'il* (/*kil*/) or *qu'i* (/*ki*/). The two relative pronouns are, then, pronounced alike when followed by a vowel. The relative object pronoun, *que*, is rare across all ages in our sample. In addition it is almost always followed by the third person personal pronoun, *il*, and thus pronounced in exactly that same way as the subject relative pronoun followed by the third person pronoun. It is essentially word order, then, that signals grammatical role of the head noun. Substitution of *qui* for *que* before a word followed by a consonant was an error observed in our French children's texts and was even observed in one of our adult frog stories. These errors are excluded from Table 5.

In normative varieties of French, object RCs with verbs in the past tense (AUX + past participle) require obligatory agreement of the past particle with the antecedent. The adult example given in Table 3 (*le garçon avait apparemment capturé une petite grenouille QU'il avait mis dans un bocal* (20c) 'the boy had apparently captured a little frog that he had put in a jar') would be considered ungrammatical in normative French and would be written *une petite grenouille qu'il avait mise dans un bocal*, with the past participle *mise* marked for feminine singular in agreement with feminine singular head noun *grenouille*. For some verbs this distinction is audible, masculine *mis* (/mi/) vs. feminine *mise* (/miz/). For the majority of verbs, however, the agreement on the past participle does not yield an audible distinction. For example, the past participle 'kissed' can be written in four different ways: *embrassé* (masculine singular), *embrassés* (masculine plural), *embrassée* (feminine singular), *embrassées* (feminine plural) as in *la* (*les*) *fille*(*s*) *qu'il a embrassée*(*s*) 'the girl(s) that he kissed' and *le*(*s*) *garçon*(*s*) *qu'elle a embrassé*(*s*) 'the boys that she kissed'. Although the past participles are written differently, they are all pronounced the same. The two remaining relative pronoun constructions, *où* (locative) and the combination of a preposition with a RC pronoun, *sur lequel* ('on which'), were relatively rare in our data.

Overall, then, though French does provide speakers with various relative pronouns, the only one used frequently in our frog stories is the subject relative pronoun, *qui*. As shown on Table 6, the vast majority of RCs used across all ages are right branching O–S. For the five-year-olds all RCs are of this type. The seven- and ten-year-olds show a few uses of centre-embedded S–S structures. It is only with the adults that a certain diversity of RC types is observed. This result conforms to that obtained by Kail (1975) in a

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

TABLE 6. *Distribution of relativizing structure types in percentages*

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
Right branching: O–S	100%	98%	96%	76%
Centre-embedded: S–S		2%	4%	11%
Right branching: O–O				12%
Centre: S–O				1%
Total RCs (excluding infinitives)	51	44	53	140

TABLE 7. *Frequency distribution of functions of relativizing structures*

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
N	20	20	20	20
General discourse function				
NAME	2 (1)*	1 (1)		1 (1)
SIT–NEW	27 (14)	15 (10)	17 (10)	32 (15)
SIT–OLD	6 (4)	11 (9)	6 (5)	19 (7)
REID	3 (3)	3 (3)	2 (2)	5 (4)
Sub total	38 (75%)	30 (68%)	25 (47%)	57 (41%)
Narrative functions				
PRES	7 (5)	8 (8)	11 (9)	12 (10)
MOT	1 (1)		10 (8)	25 (11)
CONT	3 (3)	5 (4)	3 (2)	15 (9)
EXP	1 (1)	1 (1)	3 (3)	11 (8)
SUM	1 (1)		1 (1)	20 (14)
Sub total	13 (25%)	14 (32%)	28 (53%)	83 (59%)
Total	51	44	53	140

* Indicated in parentheses is the number of subjects out of 20 using this function.

repetition task: correct repetitions on right-branching O–S RCs were the earliest of all RC types tested. They also complement the finding of Cohen-Bacri (1978) that right-branching RCs are easier for children to interpret. These data would seem to support a production version of the semantic processing heuristic (de Villiers *et al.*, 1979) in that across all ages there is a preference to create Noun–Verb–Object strings with no interrupting constituents (Slobin, 1973).

Past participles

As described above, the past participle in written French agrees in number and gender with its antecedent, but for most verbs the agreement marking is inaudible. One participle structure was used by a five-year-old, 4 by the ten-year-olds and 9 by the adults. Despite the fact that this structural option is available, speakers do not often use it.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

Infinitives

Coding infinitives in the French data is problematic. Although infinitive RCs are possible in French, no clearcut cases occur in the data and thus have been excluded from further analysis.[2]

Functions of relative clauses

Table 7 provides a quantitative breakdown of the results of the functional coding of the relative constructions observed in our French sample.

General discourse functions

In large part, our results conform to those reported by Dasinger & Toupin (1994). RCs which attempt to name a general category for a referent (NAME) were uncommon in all five languages they studied, as they are in French. As the authors explain, since the entities in the frog story are relatively commonplace, with easily accessible lexical items in the languages under study, NAME RCs are largely unnecessary.

In relation to Spanish and Hebrew, the two languages which display a very similar pattern of distribution of RCs to our data, French shows an overall

[2] The children's 'infinitive' RC structures shown in Table 5 are, in fact, not infinitive RCs at all. They consist of two-verb constructions with one finite verb followed by an infinitive. The verbs which can occupy the first position are restricted to verbs of perception. Compare (a) produced by a five-year-old and (b) an invented alternative structure.

(a) il regarde les abeilles voler (5;08g)
'he watches the bees (to) fly'

(b) il regarde voler les abeilles
'he watches (to) fly the bees'

In (a) the two-verb construction is composed of the verb *regarde* ('watch') and an infinitive, *voler* ('to fly'), separated by the object *les abeilles* ('the bees'). We would like to suggest that this difference in word order creates a distinction in meaning, with (a) as closer in meaning to *il regarde les abeilles qui volent* ('he watches the bees who fly') than it is to (b). That is, in (a), the speaker is drawing attention to the action of the bees' flying, while in (b), the narrator highlights the action of the boy's watching the bees fly. We have not been able to elicit consistent native speaker judgements to confirm this intuition.

Some adults produced structures similar to infinitive relative constructions, but they differ from RC structures in that they have no verb at all. The structure in question is given in (c) and can be compared to (d) which contains a RC.

(c) *et le voilà à cheval sur la tête d'un cerf*. (20e)
'and there he is straddled across the stag's head'

(d) *et les voilà qui tombent dans la mare* (20e)
'and there they are who fall(ing) into the swamp'

The object clitic pronouns, *le* (= the boy) in (c) and *les* (= the boy and the dog) in (d), serve as the antecedents for the relative structure. In (c) *à cheval* ('on horseback', 'straddled') specifies the position of the boy on the stag's head. This somewhat exceptional structure with *voilà* is used only by adults and is not included on Table 5.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

(across age groups), greater use of SIT–NEW and SIT–OLD functions. As far as general discourse functions are concerned, French children, like the Spanish- and Hebrew-speaking subjects, use RCs early and frequently. These results reflect Lambrecht's (1994) observation that relative clauses are heavily solicited constructions in French discourse to establish and reintroduce new referents. They also confirm the suggestion of Bates & Devescovi (1989) that a construction used frequently in conversational contexts will be accessible early on in this monologue textual context.

Narrative functions

The more specific narrative functions, however, appear to lag somewhat behind the general discourse functions, as was found in the Dasinger & Toupin study. The French adults fall between Spanish and Hebrew adults for the following narrative functions: presenting main characters (PRES), motivating or enabling narrative action (MOT), continuing the narrative (CONT), and expectation (EXP). As can be seen on Table 7, one narrative function, PRES, is used by more children than the other narrative functions PRES RCs are very much like SIT–NEWS RCs. The main clause introduces a new referent in post-verbal position and the RC provides further information about the referent's appearance on the scene. The only difference between PRES RCs and SIT-NEW RCs concerns the narrative status of the head noun, principle vs. secondary character. The PRES RCs are found in the beginning of the story, when narrators introduce the main protagonists (the boy, the dog and the frog) as essential parts of the orientation to their narratives. Five French five-year-olds used a relative construction to introduce one of the three main characters (PRES) as opposed to eight subjects in the seven-year-old group, nine subjects in the ten-year-old group and half of the adult subjects.

The MOT and CONT RCs express cause and consequence relations between the events presented in the main clause and the embedded clause. In an earlier study using a subset of the narrative texts studied here, Jisa & Kern (1994) show that child narrators are able to express narrative actions in terms of temporal relations, causes, or consequences. Though they are capable of establishing these semantic relations between clauses, they do not use RCs to do it, preferring instead coordination. Only 1 five-year-old, but 8 ten-year-olds and 11 adults used a MOT relative construction. These findings conform roughly to those for Spanish and Hebrew. Three of the five-year-olds, 4 of the seven-year-olds, 2 of the ten-year-olds and nine adults used a relative construction with a CONT function. The usage of CONT functions is roughly equivalent between French, Hebrew and Spanish children.

EXP RCs were used by a few children and by eight adults. EXP RCs stop the linear development of events in the story, step outside of the narrative

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

progression and create suspense for what is to follow. Summing over (SUM) RCs either forecast what is to come or summarize what has transpired so far. EXP and SUM require the narrator to operate outside of or across episodic chunks. As can be seen in Table 7, these functions are rarely found in the children's texts.

The SUM narrative function is noted by Dasinger & Toupin as uncommon across all the languages they investigated. It is not at all uncommon in our adult narrations and is, in fact, the narrative function used by the largest number of adult subjects. Dasinger & Troupin point to a number of other linguistic means used for this narrative function. Our adult subjects did use other structures for this function, for example *il leur est arrivé plein d'aventures au cours de cette recherche* (20g) ('lots of adventures happened to them in the course of this search'), but the majority of the French speaking adults used at least one RC with a SUM function.

The distribution of the RCs used with general discourse functions and narrative functions is shown in percentages in Figure 1. While all children use RCs, it is only at 10 years that the narrative functions of RCs dominate. A 1×4 (Group) ANOVA on the frequency of occurrence of RCs with narrative functions across age groups reveals a main effect of group ($F(2{\cdot}74) = 38{\cdot}62$, $p < 0{\cdot}01$). A *post hoc* Scheffé test on the frequency of RCs with narrative function shows no significant difference between the five- and seven-year olds or between the seven- and ten-year-olds. However, the difference in frequency between the ten-year-olds and the adults is significant ($F(2{\cdot}74) = 5{\cdot}41$, $p < 0{\cdot}01$). A 1×4 (Group) ANOVA on the percentage of RCs used with narrative function reveals a significant effect of age group ($F(4{\cdot}10) = 39{\cdot}31$, $p < 0{\cdot}01$). Thus, with development, a higher percentage of RCs take on narrative functions.

Relative clauses and connectivity

We will now turn to an investigation of the use of subject RCs as one linguistic form among others (nouns, pronouns and subject ellipsis) of syntactic packaging. We will proceed in this analysis by examining one episode: the deer episode. In this episode the boy climbs up onto a rock and hangs onto what appear to be branches. The branches turn out to be a deer's antlers. The boy gets tangles up in the deer's antlers. The deer runs towards a cliff, stops, tips his head and the boy falls into a pond. During this episode, the dog runs along yapping at the deer and falls into the pond with the boy.

We chose the deer episode in particular because all of the subjects mention it. In fact, it is the only episode that all our narrators mention. In addition, when adults were asked to rate the importance of different episodes in the frog story, the deer episode was rated as one of the three most important (Bamberg & Marchman, 1990).

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

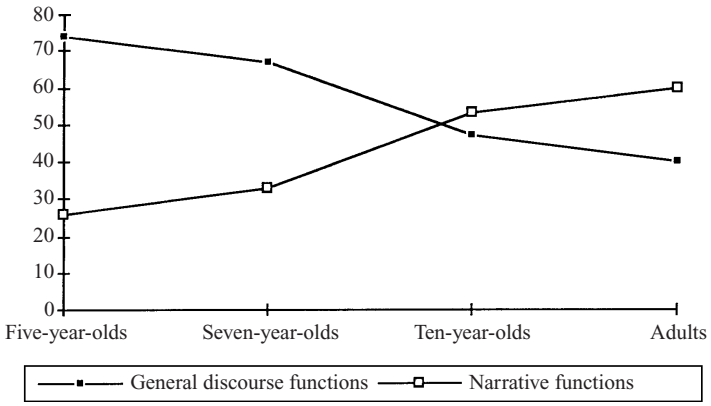


Fig. 1. Distribution of relativizing structures: general discourse functions and narrative functions per age group (percentages of total relativizing structures).

TABLE 8. *Mean number of clauses devoted to the deer episode, number and percentage of clauses with the boy, the deer or the dog as subject*

	Five-year-olds		Seven-year-olds		Ten-year-olds		Adults	
N	20		20		20		20	
Mean number of clauses	2·75		3·7		4·0		5·5	
Range of number of clauses	1–4		2–7		2–7		2–9	
	Total	%	Total	%	Total	%	Total	%
Boy as subject	21	38	14	18	21	25	29	27
Deer as subject	27	49	51	66	49	59	72*	66
Dog as subject	7	13	12	15	13	16	8	7

* Excluding 6 passive constructions with the deer as agent.

Table 8 presents the mean number of clauses used to encode the deer episode, the number and percentage of clauses with the boy as subject and the number and percentage of clauses with the secondary character, the deer, as subject. The number of clauses devoted to this episode increases with age. All age groups, even the five-year-olds, show a higher percentage of clauses with the deer as subject than clauses with the boy as subject. Thus, all age groups, since they mention both participants, are faced with the problem of maintaining and switching referents within this episode.

We continue the cohesive forms (nouns, pronouns, subject ellipsis, and RCs) used to refer to the boy, the deer and the dog successive clauses from the moment when the deer is introduced to when the boy falls into the pond. For this analysis we coded each reference to the boy, the deer and the dog for one of the three different referential contexts after an initial INTRODUCTION:

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

TABLE 9. *Distribution of cohesive links used to* MAINTAIN, PROMOTE *and* SWITCH *the boy, the deer or the dog to subject position in the deer episode*

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
	20	20	20	20
PROMOTE – TOTAL	11	22	28	27
Noun	6	12	18	9
Pronoun		6	3	2
Subject ellipsis	1	1	4	4
Subject relative clause	4	3	3	12
MAINTAIN – TOTAL	16	24	26	51
Noun	3	6	2	10
Pronoun	9	12*	18	14
Subject ellipsis	3	6	4	27
Subject relative clause	1		2	
SWITCH – TOTAL	28	31	29	31
Noun	13	15	22	29
Pronoun	13*	16†	5	2
Subject ellipsis	2		2	

* 2 repair dislocations.
† 1 repair dislocation.

PROMOTE, MAINTAIN and SWITCH and for one of the four structural options: NOUN, PRONOUN, RC and ELLIPSIS.

Table 9 provides a quantitative breakdown of the cohesive devices used to PROMOTE, MAINTAIN and SWITCH the boy, the deer and the dog in subject position. We include a breakdown by character in Appendix A. Since the use of an RC is excluded in SWITCH contexts, interest here centres on the cohesive devices which are in competition to PROMOTE and MAINTAIN referents.

As shown on Table 9, there is the clustering of RCs in PROMOTE contexts. This distribution highlights the specialization of the right-branching RC construction in French to promote a new referent to subject status. 95% (21 of 22) of the RCs used in PROMOTE contexts consist of the first mention of the deer in post-verbal position in the main clause, followed by the RC with the deer as the head noun (*cf.* (9) and (11) PROMOTE – RC). The remaining PROMOTE RC has the boy as head noun. All the children prefer full NOUNS in PROMOTE contexts, while adults prefer RCs. The proportion of RCs used in PROMOTE contexts is higher for the adults than for the children ($t = 1{\cdot}97$ (78), $p < 0{\cdot}05$). The proportional use of NOUNS in PROMOTE contexts decreases significantly for the adults compared to the children grouped together $t = 3{\cdot}35$ (78) $p < 0{\cdot}01$). The preferences for NOUN and RC structures used in PROMOTE contexts, then, changes with age.

Only 3 RCs were observed in MAINTAIN contexts. Children prefer PRONOUNS, while adults prefer the use of subject ELLIPSIS. The proportional

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

use of PRONOUNs as a cohesive device in MAINTAIN contexts decreases for the adults as compared to the children, but this decrease is not significant. Surprisingly, no adult in this sample used a right-branching relative clause in a MAINTAIN context. The proportion of subject ELLIPSIS as a cohesive device used in MAINTAIN contexts is significantly higher for the adults than for the children ($t = 11{\cdot}78$ (78), $p < 0{\cdot}001$). Thus, in MAINTAIN discourse contexts where NOUNs, PRONOUNs, subject ELLIPSIS and RCs come into competition, children show a preference for PRONOUNs and adults for ELLIPSIS. We interpret the absence of RCs in MAINTAIN contexts for adults and its presence in PROMOTE contexts as further evidence for the specialization of RCs in French to signal the promotion of a new referent to subject status.

However, there is one final remark to be made concerning subject ELLIPSIS in the deer episode. The subject ellipsis constructions listed on Table 9 include both finite clauses and participle constructions. The latter, following Dasinger & Toupin, are considered as members of the family of relative constructions. Of the 27 adult subject ELLIPSIS which the adults use for MAINTAIN function, 7 consist of such participle constructions. Illustrated in (12a) and (12b) are two adult versions of the same event.

(12a) le cerf pris de peur se met à courir très vite (20g)
'the stag taken by fear sets off running very fast'

(12b) le cerf qui a peur court vers la falaise (20e)
'the stag who is afraid runs towards the cliff'

Both (12a) and (12b) are centre-embedded RC constructions with MOT narrative functions. (12a) contains a participle, (12b) a RC. As shown on Table 5, participle constructions were used very infrequently by the five- and seven-year olds. Their usage increases in the ten-year-old and adult groups. As mentioned earlier, over 95% of all relative pronoun constructions for the three child groups were right branching RCs. It is only with adults that centre-embedded structures with coreferential subjects (S–S) are used with some frequency. As shown in Table 7, at ten years the number of MOT functions increases. There is only one example of a centre-embedded participle construction with MOT narrative function among the ten-year-old versions of the deer episode, illustrated in (13).

(13) le petit garçon monté sur le rocher tombe sur une tête de cerf (10:101)
'the little boy (having) climbed up onto the rock falls on the head of a stag'

Conforming to adult uses, the participle construction in (13) expresses the enabling condition (MOT) for the matrix clause. The remaining subject

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

ellipsis constructions shown in Table 9 for the children consist of coordinated finite clauses.

Complexity of the relative clause : transitive vs. intransitive verbs

Thus far it has been shown that French children prefer right-branching O–S RC constructions and that they use this structure with general discourse functions more readily that with narrative functions It is only at ten years that RCs with narrative function dominate over RCs with general discourse function. We have also seen in the analysis of the deer episode that French RCs are specialized constructions for promoting new referents to subject status. In this final analysis, we will attempt to show that the internal complexity of RCs blocks children's use of them in narrative functions. In particular, we argue that transitivity in the RC is crucial for narrative functions.

Hopper & Thompson (1980) show that foregrounded, narrative advancing clauses attract transitive constructions. The authors propose a hierarchy of transitivity which calls upon a number of features. A highly transitive construction consists of a bundle of these features: activity verb, telic action, animate agent and patient, high control of the agent over the action expressed by the verb, and in individuated, effected patient. Using these features we can compare the use of RCs in (14) to (16).

(14) il se retrouve sur la tête d'un cerf qui l'emmena jusqu'à un précipice (20f)
'he finds himself on the head of a stag who took him up to a drop-off'

(15) le chien poursuit le cerf qui emmène le petit garçon au loin (20t)
'the dog follows the stag who takes the little boy far away'

(16) y a un cerf qui vient (7;9n)
'there is a stag who comes'

All of the RCs in (14) to (16) have as their antecedent a newly introduced or reintroduced referent in post-verbal position, promoted to subject in the RC. The two adult versions (14 & 15), however, do more than simply introduce (SIT–NEW) or reintroduce (SIT–NEW) the stag on the scene, as is the case in the child version. As Hopper & Thompson (1980) would predict, the adult RCs advance the narrative plot (CONT) through the use of transitive constructions. The animate agent controls an action which effects an individuated patient. Based on the data presented in Table 7, we know that French children are able to use RCs with general discourse functions to (re)introduce new referents and to promote them to subject position. Is it the case that what blocks children's use of RCs with narrative function is their internal complexity as determined by transitivity?

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

To investigate this question we coded all the RCs with relative pronouns as either transitive or intransitive based upon the presence or absence of a direct object. Table 10 presents the use of transitive and intransitive verbs

TABLE 10. *Distribution of transitive and intransitive verbs used in relativizing structures*

	Five-year-olds ($N = 17$)		Seven-year-olds ($N = 19$)		Ten-year-olds ($N = 17$)		Adults ($N = 20$)	
	Total	%	Total	%	Total	%	Total	%
Transitive	18	35	14	32	17	32	70	50
Intransitive	33	65	30	68	36	68	70	50
Total	51		44		53		140	

observed in the RCs found in our texts. Across all ages, children use a larger percentage of intransitive than transitive verbs in the RCs. Adults use an equal amount of transitive and intransitive verbs. The difference between the percentage of transitive verbs used in RCs by the children (grouped together) and by the adults is significant ($t(71) = 1{\cdot}60$, $p < 0{\cdot}05$).

Table 11 shows the distribution of transitive and intransitive verbs used in general discourse and narrative RCs observed for all groups. 70% of the transitive verbs were found in RCs with narrative functions and 68% of the intransitive verbs were found in RCs with general discourse functions. A chi-square analysis of this distribution yields a significant result (χ^2 (1 d.f.) = $37{\cdot}9$, $p < 0{\cdot}001$). This result supports Hopper & Thompson's (1980) proposal that transitive constructions attract story advancing functions in narrative discourse. The fact that children have a smaller percentage of transitive verbs in RC constructions mirrors Goodluck & Tavakolian's (1982) conclusion based on comprehension that the internal complexity of the RC contributes to children's misinterpretations.

DISCUSSION

Our results show that French children use RCs precociously in narrative texts, showing a strong preference for intransitive right-branching O–S RCs. Slobin (1973) suggests that because speech is produced sequentially, children avoid the interruption or re-arrangement of linguistic units. Children's preference for right-branching O–S RCs can be interpreted as a reflection of this suggestion. The subject–verb relationship in the RC is easily recoverable and both the matrix and embedded clause preserve canonical word order.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

TABLE 11. *Distribution of transitive and intransitive verbs in relativizing structures according to function*

	Transitive		Intransitive	
	Total	%	Total	%
Discourse function	42	32	108	68
Narrative function	88	68	50	32
Total verbs	130		158	

The results obtained from our production task mirror those obtained by Cohen-Bacri (1978) for comprehension. Our subjects avoid centre-embedded RCs. Cohen-Bacri's subjects show more misinterpretations of centre-embedded RCs. The very frequent use of French right-branching RCs to (re)introduce new referents which are subsequently promoted to subject in the embedded clause may introduce a 'linguistic habit' (Bates & Devescovi, 1989) which is somewhat weakened with development. It should be noted, however, that our adult subjects also show a strong preference for right–branching O–S RCs (76% of all RCs produced by adults).

In our study of the deer episode, we found a clustering of adult RCs in PROMOTE contexts. The deer, introduced post-verbally in the matrix clause is promoted to subject in the embedded RC. Given the accessibility of RCs, we expected that children would show the same RC preference as adults in PROMOTE contexts. In fact, the children show a preference for nouns in this same context. This first unexpected result conforms to the general tendency for children to use coordination before subordination (Bloom *et al.*, 1980). Among the structural options available for promoting new referents to subjects, children prefer nouns while adults show a preference of RCs.

Another surprising finding is that RCs are almost never used to maintain reference to correferential subjects after an initial introduction and promotion. For maintaining reference across episodes, children prefer coordination with anaphoric pronouns, while adults prefer subject ellipsis. Both subordination and subject ellipsis are higher in textual connectivity than coordination (Berman & Slobin, 1994). It would appear that for adults right-branching RCs become specialized in narrative discourse to promote new referents into new episodes and subject ellipsis become specialized to maintaining referents within episodes. The specialized textual uses of RCs to promote new referents into new episodes are present in the children's versions of the deer episode, but do not represent their preferred structure. Subject ellipsis to maintain reference is also present in the children's versions of the deer episode, but again, it is not their preferred structure.

Our finding that children show a preference for intransitive RC con-

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

structions confirms Goodluck & Tavakolian's (1982) results for comprehension. In their study, transitivity was shown to yield more errors of interpretation. Compared to the adults in our study, the children use fewer transitive predicates in the RCs. We interpret this intransitive preference as also being responsible for the children's infrequent use of RCs with narrative advancing functions. French adults use RCs to do two things in one step: promote new referents and advance the narrative. Children use RCs only to promote a new character.

CONCLUSION

French children use relative clauses frequently and early on. However, both the form and the function of these early constructions are limited in comparison to adult usage. Precocious uses of RCs in general discourse functions reflect language specific facts about French. The introduction of new referents in French conversational discourse takes the form of a presentational construction with an existential predicate followed by a relative clause, *y a un homme qui vient* ('there's a man coming', 'a man is coming') or *c'est mon père qui vient* ('it's my father coming', 'my father is coming'). New referent introductions in our frog stories are overwhelmingly post-verbal (*cf*. Hickmann, Hendriks, Roland & Liang, 1996 for similar results), be they either presentational (16) or other constructions ((14) and (15)). The RC construction is specialized to promote the new referent to subject in the subsequent clause.

Proficient narrators must not only introduce new referents into their texts. They must also wave agent–patient relationships between different characters in order to advance the story. We argue that the internal complexity of the RC, in particular its transitivity, is essential to yield multifunctional relative clauses in narrative texts. Children promote new referents to subject status using a RC. Adults use RCs to promote a new referent, but they also use the same RC to establish an agent–patient relationship between the new referent and other story participants, and thus advance the story plot.

While subject RCs are early acquired constructions in French, their multifunctional use in narrative monologues is not. This study has attempted to emphasize the relationship between linguistic form and narrative function. An early acquired form, the subject relative clause, is initially used with intransitive predicates to introduce new referents into the story. Use of transitive predicates in the relative clause increases their internal complexity and allows the construction to fulfill more plot-advancing narrative functions. Our results based on the production of frog stories indicate that the development of the internal complexity of the relative clause is quite protracted. This highlights the fact that a full developmental picture of a given structure requires close examination of the form and function of early

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

uses of that construction as well as how forms and functions change with development.

REFERENCES

Bamberg, M. & Marchman, V. (1990). What holds a narrative together? The linguistic encoding of episode boundaries. *Papers in Pragmatics* **4**, 58–121.

Bates, E. & Devescovi, A. (1989). Crosslinguistic studies of sentence production. In E. Bates & B. MacWhinney (eds) *Crosslinguistic studies of sentence processing*. Cambridge: C.U.P.

Berman, R. (1986). A crosslinguistic perspective: morphology/syntax. In P. Fletcher & M. Garman (eds) *language acquisition*. Second edition. Cambridge: C.U.P.

Berman, R. (1990). The role of 'and' in developing narrative skills. Paper presented at the International Pragmatics Conference. Barcelona, Spain. July.

Berman, R. & Slobin, D. I. (1994). Filtering and packaging in narrative. In R. Berman & D. I. Slobin (eds) *Relating events in narrative: a crosslinguistic developmental study*. Erlbaum: Hillsdale, N.J.

Bloom, L., Lahey, M., Hood, L., Lifter, K. & Fiess, K. (1980). Complex sentences: acquisition of syntactic connectives and the semantic relations they encode. *Journal of Child Language* **7**, 235–61.

Bowerman, M. (1979). The acquisition of complex sentences. In P. Fletcher & M. Garman (eds) *Language acquisition*. Cambridge: C.U.P.

Clancy, P. M., Lee, H. & Zoh, M.-H. (1986). Processing strategies in the acquisition of relative clauses: universal principles and language specific realizations. *Cognition* **22**, 225–62.

Cohen-Bacri, J. (1978). Langage et processus cognitifs interprétations de phrases complexes avec proposition relative chez l'enfant. *La Linguistique* **14**, 89–110.

Comrie, B. (1981). *Language universals and linguistic typology*. chicago: University of Chicago Press.

Dasinger, L. & Toupin, C. (1994). The development of relative clause functions in narrative. In R. Berman & D. I. Slobin (eds) *Relating events in a narrative: a crosslinguistic developmental study*. Hillsdale, NJ: Erlbaum.

de Villiers, J. G., Tager-Flusberg, H., Hakuta, K. & Cohen, M. (1979). Children's comprehension of relative clauses. *Journal of Psycholinguistic Research* **8**, 499–518.

de Weck, G. (1991). *La cohésion dans les textes d'enfants : étude du développement des processus anaphoriques*. Neuchâtel: Delachaux & Niestlé.

Fayol, M. (1985). *Le récit et sa construction : une approche de psychologie cognitive*. Neuchâtel: Delachaux & Niestlé.

Goodluck, H. & Tavakolian, S. (1982). Competence and processing in children's grammar of relative clauses. *Cognition* **11**, 1–27.

Halliday, M. A. K. & Hasan, R. (1976). *Cohesion in English*. London: Longmans.

Hickmann, M. (1987). The pragmatics of reference in child language: some issues in developmental theory. In M Hickmann (ed.) *Social and functional approaches to language and thought*. Orlando, FL.: Academic Press.

Hickmann, M., Hendriks, H., Roland, F. & Liang, J. (1996). The marking of new information in children's narratives: a comparison of English, French, German and Mandarin Chinese. *Journal of Child Language* **23**, 591–619.

Hickmann, M., Kail, M. & Roland, F. (1995). Cohesive anaphoric relations in French children's narratives as a function of mutual knowledge. *First Language* **15**, 277–300.

Hopper, P. J. & Thompson, S. (1980). Transitivity in grammar and discourse. *Language* **57**, 251–76.

Jisa, H. (1984/85). French preschoolers' use of *et pis* ('and then'). *First Language* **5**, 169–84.

Jisa, H. (1987). Sentence connectors in French children's monologue performance. *Journal of Pragmatics* **11**, 607–21.

Jisa, H. & Kern, S. (1994). Discourse organisation in French children's narratives. *Child Language Research Forum* **26**, 177–88. CSLI Publications, Stanford Linguistics Association.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

Kail, M. (1975). Etude génétique de la reproduction de phrases relatives, I: Reproduction immédiate. *Année Psychologiqe* **1**, 109–26.
Kail, M. & Hickmann, M. (1992). French children's ability to introduce referents in narratives as a function of mutual knowledge. *First Language* **12**, 637–62.
Karmiloff-Smith, A. (1979). *A functional approach to child language : a study of determiners and reference*. New York: Cambridge University Press.
Karmiloff-Smith, A. (1981). The grammatical marking of thematic structure in the development of language production. In W. Deutsch (ed.) *The child's construction of language*. London: Academic Press.
Karmiloff-Smith, A. (1986). Stage/structure versus phase/process in modeling linguistic and cognitive development. In I. Levin (ed.) *Stage and structure : reopening the debate*. Norwood, NJ: Ablex.
Kern, S. (1997). *Comment les enfants jonglent avec les contraintes communicationnelles, discursives et linguistiques dans la production d'une narration*. Unpublished doctoral dissertation, Université Lumière-Lyon 2, France.
Labov, W. (1972). *Language in the inner city : studies in the Black English vernacular*. Philadelphia: University of Pennsylvania Press.
Lambrecht, K. (1988). Presentational cleft constructions in spoken French. In J. Haiman & S. Thompson (eds) *Clause combining in grammar and discourse*. Amsterdam: John Benjamins.
Lambrecht, K. (1994). *Information structure and sentence form : topic, focus and mental representations of discourse referents*. Cambridge: C.U.P.
Mandler, J. M. & Johnson, N. S. (1977). Remembrance of things passed: story structure and recall. *Cognitive Psychology* **9**, 111–51.
Mandler, J. M. (1978). A code in the node: the use of story schema in retrieval. *Discourse Processes* **1**, 14–35.
Mayer, M. (1969). *Frog, Where are you?* New York: Dial Press.
Sheldon, A. (1974). The role of parallel function in the acquisition of relative clauses in English. *Journal of Verbal Learning and Verbal Behavior* **13**, 272–81.
Slobin, D. I. (1973). Cognitive prerequisites for the development of grammar. In C. A. Ferguson & D. I. Slobin (eds) *Studies of child language development*. New York: Holt, Rinehart & Winston.
Stein, N. & Nezworski, M. T. (1978). The effects of organisation and instructional set on story memory. *Discourse Processes* **1**, 177–93.
Tavakolian, S. (1981). The conjoined clause analysis of relative clauses. In S. Tavakolian (ed.) *Language acquisition and linguistic theory*. Cambridge, Mass.: MIT Press.
van der Lely, H. K. J. (1997). Narrative discourse in grammatical specific language impaired children: a modular deficit: *Journal of Child Language* **24**, 221–56.
Zoriqueta, M. E. (1988). *The acquisition of relative clauses in Spanish*. Unpublished doctoral dissertation, State University of New York, Buffalo.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press

APPENDIX A. COHESIVE LINKS USED TO ESTABLISH REFERENCE TO THE BOY, THE DEER AND THE DOG IN THE DEER EPISODE

	Five-year-olds	Seven-year-olds	Ten-year-olds	Adults
n	20	20	20	20
BOY PROMOTE – TOTAL	1	2	3	3
Noun	1	1		1
Pronoun		1	2	
Subject ellipsis				2
Subject relative clause			1	
BOY MAINTAIN – TOTAL	7	1	5	11
Noun	2			2
Pronoun	5	1	4	4
Subject ellipsis			1	5
BOY SWITCH – TOTAL	13	11	13	15
Noun	3	5	8	13
Pronoun	8	6	3	2
Subject ellipsis	2		2	
DEER PROMOTE – TOTAL	10	20	25	24
Noun	5	11	18	8
Pronoun		5	1	2
Subject ellipsis	1	1	4	2
Subject relative clause	4	3	2	12
DEER MAINTAIN – TOTAL	9	22	20	39
Noun	1	5	2	8
Pronoun	4	11	13	10
Subject ellipsis	3	6	3	21
Subject relative clause	1		2	
Deer Switch – Total	8	9	4	9
Noun	3	5	2	9
Pronoun	5*	4	2	
DOG MAINTAIN – TOTAL		1	1	1
Noun		1		
Pronoun			1	
Subject ellipsis				1
DOG SWITCH – TOTAL	7	11	12	7
Noun	7	5	12	7
Pronoun		6†		

* 2 repair dislocations.
† 1 repair dislocation.

https://doi.org/10.1017/S0305000998003523 Published online by Cambridge University Press