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The Acquisition of Referring Expressions

A dialogical approach

Edited by Anne Salazar Orvig, Geneviève de Weck, Rouba Hassan and Annie Rialland

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A dialogical approach

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To Frédéric François

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CHAPTER 1

A dialogical approach to the acquisition and usage of referring expressions

Theoretical challenges and methodological issues

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This chapter gives a general overview of the dialogical, theoretical, and methodological framework of the studies presented in the book, and the implications of that framework for understanding the acquisition of referring expressions and children's early skills in this domain. Section 1 considers the formal aspects of children's acquisition of the relevant morphological paradigms (mainly pronouns, and including fillers) in relation to certain aspects of syntactic development. Section 2 is devoted to studies on reference and referential strategies in children. After dealing with some discrepant results, we focus on the dialogical foundation of reference. As a whole, the chapter builds up a rationale for a multidimensional approach, considering the interaction of formal and functional factors in the acquisition of referring expressions, and, more generally, the way meaning is constructed in socially situated interactions driven by activities and scaffolded by adults. Section 3 presents the methodological choices this approach entails. Section 4 introduces the issues tackled by the nine studies presented in the book.

Keywords: dialogical approach, reference, referring expressions, activities, dialogue, social settings, scaffolding, morphological and syntactic development

The acquisition of reference and referring expressions is a challenging issue for developmental studies because it simultaneously involves both the formal and

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functional aspects of language acquisition. On the one side, the acquisition of referring expressions corresponds to the construction of grammatical paradigms, such as pronouns, inflections, and determiners, and to the acquisition of syntax, such as the use of syntactic arguments. On the other side, the acquisition of referring expressions requires the child to gradually master both the semantic-referential values of linguistic devices and their conditions of use (for several reviews, see Serratrice & Allen, 2015). In the studies presented in this book, we deal with the acquisition and use of referring expressions in French[1] from an interactionist and dialogical perspective, at the crossroads of several converging approaches. The interactionist approach stems from the pioneering work by Vygotsky (1934/1962) developed by Bruner (1975, 1982, 1983), according to which verbal and non-verbal interactions – and, more specifically, the mediating role of caregivers and their scaffolding – are the context and the driving force of cognitive development and language acquisition. We propose a dialogical approach to this interaction process. Inspired by Vološinov (1929/1986) and Bakhtin (1975/1982, 1979/1986), a dialogical approach to language acquisition focuses not only on the interactional dimension but also on the joint discursive construction of a common space of meanings (see Bronckart, 1987, 1996; H. Clark, 1996; François, 1984, 1993). According to this perspective, "the child does not move from language structures to speech, but from the other's utterances to his/her own utterances: in short (…) his/her discourse is essentially dialogical" (François, 1988: 17, our translation).[2] Our contention is that children grasp language structures through discourse, and, more precisely, through the experience of speech genres and/or language games (Wittgenstein, 1953). We also contend that there is a mutual influence between language games, which support language acquisition, and the development of specific dialogical skills, which allow the child to participate in the joint process of language construction. This position is close to Tomasello's socio-pragmatic perspective (Tomasello, 1999) and to Nelson's functional approach (Nelson, 2007).

Our first aim is to thoroughly describe French-speaking children's repertoire and use of referring expressions, mostly in typically developing children (TD) at different ages, but also in children with developmental language disorders (DLD). Beyond this first description, our aim is to enhance the understanding of the conditions that promote the acquisition of the forms, uses and functions of referring

1. This book reports the main results of a research program called the "Acquisition of referring expressions in dialogue: a multidimensional approach (DIAREF, funded by the French National Research Agency, ANR 09-ENFT-055).

2. " … l'enfant ne va pas des structures de la langue à la parole, mais des énoncés de l'autre aux énoncés de soi : bref (…) son discours est essentiellement dialogique".

expressions. Among the possible conditions, our theoretical perspective leads us to focus on the role of socio-discursive context, and of dialogue in toddlerhood and early school age.

This introductory chapter first addresses some of the main topics in reference and referring expressions, with a particular attention to the role of dialogue in understanding the development of referential skills and strategies (Sections 1 and 2). We then present the methodological choices that stem from our theoretical options (Section 3). The last section presents the way the chapters deal with the main issues addressed in our research program (Section 4).

1. Formal aspects of the acquisition of the referring expressions: What is involved?

Referring expressions do not constitute a single grammatical category. They correspond to the set of linguistic expressions that can potentially be used to refer to what Lyons (1977) called first-order entities (things, animals, persons, etc.) and to abstractions, ideas, discourses, and processes that pertain to Lyon's second- and third-order entities. Referring expressions correspond to nominal expressions, such as proper nouns, pronouns (personal, demonstrative, indefinite, etc.), and definite, indefinite, demonstrative, and possessive noun phrases. Their acquisition covers a complex range of formal processes that we quickly summarize here before moving on to its functional aspects in Section 2.

The emergence of referring expressions is interwoven with grammatical and syntactic development. Even if the very first referential acts are non-verbal (Bruner, 1975) – as infants communicate with their interlocutors about entities of the external world through vocalizations, gazes and gestures – the beginning of linguistic development contributes a new dimension to this emerging skill. Their first words give children the opportunity to encode entities and/or to make predications about them. With first word combinations comes the development of grammatical morphemes (in French, determiners and pronouns), which provide new means of expressing entities and/or indicating their referential status. These new referential possibilities appear as children begin to build their first syntactic relations and grammatical paradigms emerge. In addition, the construction of the paradigms of referring expressions contributes to the construction of the grammatical categories of nouns and verbs (Bassano, 2000; Veneziano, 2017), but it is also because nouns are mainly used to refer, and verbs to predicate, that their values need to be specified by means of referring expressions (Tomasello, 2003).

The acquisition of determiners and pronouns are dependent on phonological and prosodic development. For instance, some of the consonants they contain (for

example /l/ for definite determiners and third-person pronouns or /ʒ/ for first-person pronouns) are not among the consonants that children acquire first (Rose & Wauquier Gravelines, 2007; Yamaguchi, 2012). Determiners and pronouns in prelexical position occur in a weak unstressed position, which make them less phonologically salient. Furthermore, prosodic constraints (such as the preferred iambic-foot structure, i.e., an unstressed syllable preceding a stressed syllable) can account both for the omission of prelexical morphemes in bisyllabic words and for the production of additional syllables (fillers) in monosyllabic or trisyllabic words (Demuth, 2001; Demuth & Tremblay, 2008; Veneziano & Sinclair, 2000). More specifically, fillers appear to be transitional phenomena that undergo two stages: a pre-morphological stage where they are determined by prosodic constraints, and a proto-morphological stage where they share distributional properties with grammatical morphemes and become specific to the nominal and verbal paradigms (Bassano 2015; Peters, 2000; Veneziano & Sinclair, 2000, Veneziano, 2017, *inter alia*). However, one question that has seldom been raised is whether the distributional properties of fillers also reflect children's sensitivity to the functional features of pronouns and determiners.

At the first stages of grammatical development, adult-like morphemes alternate with fillers and omissions or null forms. For determiners, definite forms emerge first, followed by indefinite ones. Possessive, and then demonstrative determiners are acquired later. Singular and masculine forms seem to be mastered before feminine and/or plural ones (Bassano, 2015; Le Mené, 2017; Nashawati, 2010; Rozendaal & Baker, 2008). The acquisition of their semantic values is usually considered to be a long process (Karmiloff-Smith, 1979, inter alia).[3] Concerning pronouns, the landscape is more complex because the modalities and rhythms of acquisition depend on factors as diverse as the type of pronoun (personal vs. demonstrative), their morphosyntactic status (in French, a non-null-subject language, subject and object pronouns are clitics) or the grammatical person (third vs. first or second). Most studies on French (Caët, 2013; Hamann, Rizzi & Frauenfelder, 1996; Morgenstern, 2006; Salazar Orvig et al., 2010) show that the demonstrative pronoun "ça" is acquired earlier than personal pronouns, which emerge around the age of two. Jakubowicz and Rigaut (1997, 2000) noted that in children aged 2;0 to 2;7 most utterances include a clitic pronoun in the subject position whereas object clitic pronouns are acquired later. On the other hand, there is no consensus regarding the order of acquisition for grammatical persons (third vs. first and second or vice-versa) because clitic pronouns frequently alternate with omissions and fillers for a lengthy period of time.

3. With the exception of Chapter 2, and, in a very limited way, of Chapter 8, the development of determiners is not addressed in this book.

Furthermore, pronouns are a zone of fragility for children who have developmental disorders. Salazar Orvig and de Weck (2013) showed that children with DLD aged 5–7 have a narrower range of pronouns than do typically developing children at the same age, as far as types (personal, relative, demonstrative, etc.) and forms are concerned (a smaller variety of forms in each type). The capabilities and difficulties of children with DLD in using these grammatical morphemes provide evidence of the interplay between these different linguistic dimensions. For instance, for Parisse and Maillart (2008), a phonological disorder can account for the omission, distortion, and/or replacement of short grammatical morphemes (pronouns, determiners), which have weak phonological saliency. However, object clitic pronouns in French occur in preverbal position, and are more frequently omitted than subjects, which constitutes evidence against this hypothesis. According to Jakubowicz (2003), these omissions can be accounted for in morphosyntactic terms, as part of the difficulties affecting the verb.

The construction of these paradigms, omissions, and errors in the use of determiners and pronouns are also tightly linked to the development of syntactic structures (for reviews, see Allen, 2006; Ambridge & Lieven, 2011; Guasti, 2002). Generativist-nativist approaches propose accounts in terms of pre-existing abstract categories and grammar, and do not necessarily consider any functional aspects. By contrast, among the functionalist approaches, the Preferred Argument Structure framework (Du Bois, Kumpf, & Ashby, 2003) allows null subjects to be accounted for at the interface between syntax and pragmatics (Allen, 2000; Clancy, 1993). More recently, usage-based approaches (Behrens, 2006; Lieven, 2010; Tomasello, 2003) have shown that children tend to take up forms and constructions in an item-based way before being able to process them through a grammar (Akthar, 1999; Ibbotson, Theakston, Lieven, & Tomasello, 2010; Lieven, 2014, inter alia). Therefore, usage-based approaches consider that grammatical morphemes such as pronouns or determiners are first experienced in the context of rote-learned holophrases (*I-want-it*) or lexically specific slot and frame patterns (*I'm Xing it, That's a Y*), which are very frequent in adult input (Ambridge & Lieven, 2015). Within this framework, omissions or errors are accounted for on the basis of the distributional features of the input. Therefore, the construction of grammatical categories, syntactic structures, and functions is the result of a long, irregular process of analogy, generalization, and abstraction, which takes place throughout childhood (Ambridge & Lieven, 2015; Tomasello, 2003).

Thus, any study of the acquisition of referring expressions must consider various aspects: the fact that grammatical categories and syntactic relations alike are still being formed, the fact that this process relies on how the child takes up what is present in the adult's input (and therefore the importance of frequency; see Ambridge, Kidd, Rowland, & Theakston, 2015), and the way the child grasps that

input. This is true for the formal aspects of referring expressions; it is also true for their functional aspects, i.e., their usage in a diversity of communication contexts, to which we will turn now.

2. Reference and dialogue

In this section, we address the referential/pragmatic aspects of the acquisition of referring expressions. Section 2.1 provides an overview of reference acquisition that shows the heterogeneity of the findings. More detailed accounts can be found in various chapters of this book. Section 2.2 examines the way in which dialogue underlies reference and its acquisition, an issue that has not been thoroughly investigated in previous research.

2.1 Main studies on the acquisition of reference

Reference and referring expressions have been a constant concern in the field of language acquisition. Several lines of research have emerged since the beginning of pragmatic approaches to language development in the mid-seventies, when leading authors like Elinor Ochs, Patricia Greenfield, Elizabeth Bates, and Annette Karmiloff-Smith worked simultaneously on various interconnected issues such as presupposition (Bates, 1976), informativeness (Greenfield, 1979), referential values (Karmiloff-Smith, 1979), and discourse and dialogue continuity (Ochs Keenan & Klein, 1975; Ochs Keenan & Schieffelin, 1976). Theoretically speaking, the field was nourished by various philosophical, linguistic, and psycholinguistic traditions dealing with reference in adult usage. Among the many concerns in the field, we can mention the functions of referring expressions (anaphoric vs. deictic: Lyons, 1977, 1979), the status of referents and the given/new opposition (Chafe, 1976; Haviland & Clark, 1974), discursive construction and cohesion (Halliday & Hasan, 1976), the utterance information structure and its relation to text coherence (Chafe, 1976; Givón, 1983, 1995), the interface between syntax and pragmatics (Du Bois et al., 2003), and sensitivity to the interlocutor's perspective and shared knowledge (Ariel, 1988, 1990; Chafe, 1976, 1987; H. Clark & Schaefer, 1989; H. Clark & Wilkes-Gibbs, 1986; Gundel, 2010; Gundel, Hedberg, & Zacharski, 1993).

Currently, the main issue for most authors concerns the discursive and pragmatic conditions under which children appropriately select a referring expression among the possible choices in their language (noun phrases, demonstrative pronouns, personal pronouns, null forms, etc…) to encode a referent, and how they identify these conditions. Some studies have explored comprehension and production of noun phrases in referential communication activities (Davies & Katsos,

2010; Whitehurst & Sonnenschein, 1981; inter alia, for a review, see Graf & Davies, 2014). Others, based on the functionalist Preferred Argument Structure framework (Du Bois, Kumpf, & Ashby, 2003), have shown that a discourse-pragmatic foundation of grammar accounts for an initial syntactic issue, i.e., omissions in early utterances in both null and non-null subject languages (Allen, 2000; Allen & Schröder, 2003; Clancy, 1993, 1997, 2003). Another set of studies have dealt more specifically with the development of discursive skills. Reference was considered through the lens of text structure, cohesion, or coherence issues. This led to studies focusing on the information structure and the management of topics (Bamberg, 1987; Benoit, 1982; de Weck, 1991; Hickmann, 2003; Hickmann & Hendricks, 1999; Jisa, 2000; Karmiloff-Smith, 1979, 1985; Kern, 1997; Kern & Raffara, 2012; Liles, 1985; Peterson & Dodsworth, 1991). These studies resulted in divergent or even contradictory outcomes.

The very first observations and qualitative studies on naturally occurring interactions (Greenfield, 1979; Greenfield & Smith, 1976; Ochs Keenan & Klein 1975; Ochs Keenan & Schieffelin, 1976) tended to put forward children's early skills, whereas studies on experimental settings and/or on elicited narratives highlighted a gap between early deictic strategies and more mature anaphoric ones (de Weck, 1991; Hickmann, 1991; Karmiloff-Smith, 1985, inter alia). However, within the past 25 years, since Clancy's studies on Japanese and Korean (Clancy, 1993, 1996, 1997), the increase in quantitative studies on mother-child interactions at the onset of language development, and their gradual theoretical convergence towards cognitive approaches to reference, with the notions of accessibility (Ariel, 1988, 1990) or givenness (Gundel et al., 1993),[4] brought about a substantial change in the conceptualization of children's discursive productions and their uses of referring expressions (see reviews in Allen, Hughes, & Skarabela, 2015; Graf & Davies, 2014; Hickmann, Schimke, & Colonna, 2015; Salazar Orvig, 2019). These studies, which have investigated a wide range of languages presenting diverse morphological and syntactic features, converged to confirm that young children are sensitive to a referent's accessibility or givenness. Through their nascent linguistic competence, children very soon build a linguistic contrast between weak forms (be they null forms or clitic pronouns, depending on the language) and strong forms (lexical forms, stressed pronouns, dislocated and topicalized constructions,

4. Let's note that Ariel's and Gundel's approaches cannot be assimilated with each other. Ariel points to the conditions of the retrieval of the antecedents of referring expressions in various contexts (Ariel, 1990) whereas Gundel (2010; Gundel et al., 1993) considers the values associated to the various referring expressions. These two approaches nevertheless seem to be considered similar in many papers.

etc.). Some studies (Le Mené, 2017; Rozendaal & Baker, 2008; Salazar Orvig et al., 2013) have also brought out an early contrast between definite (presupposing) and indefinite determiners in referential uses of noun phrases.

However, other studies conducted in experimental settings (Matthews, Lieven, Theakston, & Tomasello, 2006; Serratrice, 2008, inter alia) and studies on narrative tasks (Hickmann 2003; Jisa, 2000; Jisa, Chenu, Fekete, & Omar, 2012; Kail & Hickmann, 1992, inter alia) nevertheless showed that full mastery of reference is a gradual and long process. For instance, in experimental or narrative monological contexts, younger children might be insufficiently informative (using pronouns, presupposing NPs or unmodified NPs) when introducing a referent, and when referring to an entity not perceptually available or potentially ambiguous to their interlocutor. For French in particular (de Weck, 1991; de Weck & Jullien, 2013; Kail & Hickmann, 1992), children generally do not introduce referents with indefinite noun phrases before the age of 6–7 years. In English, though, it seems that the predominance of indefinite noun phrases in first mentions of referents begins earlier (Colozzo & Whitely, 2015). In contrast, for subsequent mentions, children mainly use personal pronouns, which tend then to have an anaphoric value (Akinci, 2012; de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985; Kern, 2002), and to be used mostly for the main characters of the story (Bamberg, 1987; de Weck, 1991; Salazar Orvig & de Weck, 2013; Vinel, 2014). Differences have been observed across genres in the "density"[5] of referring expressions (de Weck, 1991), their grammatical category (de Weck, 1991; de Weck & Schneuwly, 1994; Pellegrini, Galda, & Rubin, 1984), and their functions (Mazur-Palandre, Fayol, & Jisa, 2012). The differences vary according to the child's age until adolescence. However, between ages 10 and 11, children's uses of referring expressions come closer to those of adults when the narrative discourse contains few referential chains and/or clearly contrasted referents (e.g., Hickmann, 2003; Jisa, 2000).

When we look into DLD children's uses, we do not observe the same tendencies. Their use of referring expressions has mainly been examined in narratives. Research shows that, compared to typically developing same-age peers, DLD children produce more ambiguous referring expressions (especially null forms and undefined forms), and make certain, specific errors up until a later age. This is true both for first mentions (e.g., de Weck & Jullien, 2013; de Weck & Rosat, 2003; Schelleter & Leinonen, 2003; Schneider & Hayward, 2010) and subsequent mentions (de Weck, 2004; Liles, 1985; Paul, Hernandez, Taylor, & Johnson, 1996). However, like their typically developing peers they preferably

5. The density of a grammatical category is the proportion of the occurrences of that category relative to the number of words or verbs in the discourse analyzed.

use noun phrases for first mentions (de Weck & Jullien, 2013). The difficulties of DLD children have been observed up to adolescence (Wetherell, Botting, & Conti-Ramsden, 2007).

Although the partially discrepant results of studies on young children in natural dialogues and studies on older children in narratives can be accounted for in terms of theory-based reasons (for example, textual/localist approaches following Halliday and Hasan, 1975, vs. cognitive approaches to reference inspired by Ariel, 1990, or Gundel et al., 1993) or methodological reasons (e.g., the difference between ecological and experimental settings), they lead to a re-evaluation of the precocity of young children's pragmatic skills. The results have also revealed that the choice of referring expressions is affected by several interacting factors (such as animacy, subject function, topicality, and accessibility). At another level, we can mention speech genre – i.e. narratives or descriptions – and scripts, which determine the specific organization of characters and objects. Moreover, the relative weight of certain factors like syntactic functions, and referent animacy can override the referential status of the encoded entity (Allen, 2008; Hickmann et al., 2015, inter alia). According to Hickmann et al. (2015), the crucial issue is the children's mastery of multifunctionality, which cannot show up at the early stages of language development due to the coalescence of different factors favoring adult-like uses of referring expressions.

Thus, we still need to gain knowledge of how early and late skills grow into adult-like uses through the child's cognitive and social development. Concerning the cognitive aspect, several studies have looked more specifically at the development of theory of mind (De Cat, 2013; Gundel & Johnson, 2013; Gundel, Ntelitheos, & Kowalsky, 2007; Schafer & de Villiers, 2000; van Hout, Harrigan, & de Villiers, 2009) and executive functions, like working memory and cognitive control skills, in order to account for children's referential performance in experimental settings (De Cat, 2015; Nilsen & Graham, 2009; Serratrice & De Cat, 2020; Uzundag & Küntay, 2018). However, other studies have also shown that cognitive skills are expressed jointly with sensitivity to adult models and feedback (Matthews, Butcher, Lieven, & Tomasello, 2012; Matthews, Lieven, & Tomasello, 2007; Uzundag & Küntay, 2018).

Concerning the social dimension of the construction of reference, data from naturally occurring interactions has shed a different light on children's productions. The next section addresses the contribution of dialogue to reference construction.

2.2 Reference in dialogue

The relevance of dialogue in reference construction has gradually gained ground in our understanding of reference in adult discourse, which moved slowly from a

disembodied and monological approach (Frege, 1892/1948) to more interactional concerns. Since Strawson's (1950) view of reference as a speech act, this notion has evolved to include both the consciousness of the speaker, and his/her projection of the addressee's perspective and possibilities for retrieving the intended referent (Ariel, 1988, 1990; Chafe, 1987; Gundel et al., 1993). In this view, referring expressions are seen as instructions that guide the addressee's interpretation. However, the addressee is still not always considered as an interlocutor. For instance, many experimental studies that have explored the uses of referring expressions (conducted either with adults or children) stage one-way interactions: the interlocutor is a passive hearer, or has only either a responding or an initiating role (e.g., asking a question, giving an instruction). There are two exceptions. First, H. Clark and his colleagues (H. Clark & Brennan, 1991; H. Clark & Wilkes-Gibbs, 1986, inter alia) regard reference and common ground as being achieved collaboratively, which supposes that interlocutors mutually acknowledge their representation of the ongoing discourse. Second, in the framework of interactional linguistics (B. Fox, 1987; Laury, 2002, 2003; Pekarek Doehler, 2000, 2011), reference and the cognitive status of referents are regarded not only as an interactional achievement but also as a resource for speakers, who, through their use of referring expressions, display their interpretation of the ongoing talk.

The next section addresses the relevance of interaction and dialogue for the construction of reference in children.

2.2.1 *The dialogical roots of reference*

Children's referential abilities are grounded in their early pre-linguistic communicative experience (Bruner, 1975). A conception of reference as "a social act in which one person attempts to get another person to focus her attention on something in the world" (Tomasello, 1999: 97) implies two pre-conditions: (a) the achievement of a state of intersubjectivity between the child and his/her caregiver (Trevarthen, 1977) and (b) the establishment of a joint attention space within this first intersubjective state (Carpenter, Nagell, & Tomasello, 1998). The first, very early accomplishment of primary intersubjectivity is a condition for reference but it is not a sufficient one. Reference presupposes a triadic relation where the referent is under the mutual and joint attention of two participants. As mentioned before, this relation precedes the use of linguistic forms and is conveyed by non-verbal communication (Bruner, 1975, 1982). Before their first words, children experience exchanges with their interlocutor about a joint-focused referent through vocal non-word utterances (Halliday, 1975; Ninio & Snow, 1996) and gestures (Liszkowski, Carpenter, Striano, & Tomasello, 2006; Liszkowski, Carpenter, & Tomasello, 2008; Marcos, 1998; O'Neill, 2005). Reciprocally, in early joint-attention episodes, adults contribute to focusing, directing and

maintaining children's attention using both gestural and discursive resources (E. Clark & Estigarribia, 2011). This early communication has two facets. First, at around 9 months, infants begin to orient their interlocutors' attention to an object or an event, which becomes a joint focus of attention; this skill is the basis for deictic reference (Bruner, 1975). Then, when they are involved in a joint-attention episode, infants contribute, with new elements (actions, information), to communication about in-focus referents; this skill is the basis for anaphoric reference.

Therefore, when they start producing their first words and first utterances, children have already mastered two "proto-referential" non-verbal functions: (1) attracting their interlocutor's attention to an object or an event, and thus establishing joint attention, (2) and taking part in a joint-attention episode. Few studies have dealt with the impact of joint attention on reference (Skarabela, 2007). Typically, the transition between from non-verbal to proto-verbal and then verbal resources has more often been explored for deictic reference (Diessel, 2006; Ng, Demir, & So, 2015) than for proto-anaphoric reference.

Children's first one-word utterances display these proto-referential skills insofar as they "choose" words according to the referent's informational status (Greenfield, 1979; Greenfield & Smith, 1976; Greenfield & Zukow, 1978). The definition of informativeness (which has been revisited via the notion of accessibility; see Allen, Skarabela, & Hughes, 2008) was a matter of debate from the outset. Bates (1976) argued that the contrast between what is new (informative) and what is presupposed in first speech acts is built solely on the child's attention. In contrast, Greenfield considered informativeness to depend on several features of the context shared by the child and the adult, such as possession, distance, agency, and previous mention. In dialogue, "the uncertain element expressed verbally by the child is (…) always 'new' information, as defined by Haviland and Clark (1974) after Chafe (1970)" (Greenfield, 1979: 165). Moreover, arguing *avant la lettre* for a multimodal conception of language, Greenfield and her colleagues also showed that one-word utterances combine words and gestures. Similar principles account for two-word utterances (Baker & Greenfield, 1988). In these various cases, the interrelationship between young children's verbal productions and the dialogical context foreshadow the topic-comment structure.

2.2.2 *Discourse in dialogue*

Early dialogical experiences are also the first discursive ones. Even though they do not produce long stretches of monological discourse, children are involved in co-constructed or adult-mediated discursive sequences. This is the case in successive one-word utterances (Bloom, 1973; Ochs, Schieffelin, & Platt, 1979; Scollon, 1979; Veneziano, 2005) when children express the same communicative intention across several utterances, with (or without) the adult's contribution. This is also the

case for discourse topics and presupposition (Ochs Keenan & Schieffelin, 1976), which are collaboratively built both on the given/new contract (H. Clark & Haviland, 1977), and on specific moves within the verbal interaction. Ochs Keenan and Schieffelin's study showed that children "are often sensitive to the fact that listeners must be able to identify specific entities addressed in a discourse topic progression" (1976: 365). Moreover, even at first, when their references are not clear enough for their addressee, young children learn to display various relevant moves to establish referents and discourse topics. Veneziano (2014) showed that in early conversations, the involvement of one participant (either the mother or the child) in successive single-word sequences contributed to the involvement of the interlocutor, and thus, to topic development.

This dialogical contingency gives rise to the first formal links between utterances (Bloom, Rocissano, & Hood, 1976; Halliday, 1979; Salazar Orvig, 2000). The continuity of young children's utterances rests upon two major phenomena: repetition and question-answer sequences. Firstly, repetitions are an early form of co-referential link. Secondly, co-reference is also prepared by the question-answer relation: an interrogative pronoun foresees the expected referent conveyed by the answer. Moreover, children experience topic continuity through these relations, which thereby contribute to a common topic with a new predication. These experiences, acquired in dialogue, are one of the sources of the development of referential skills.

The experience of recurrent discursive and dialogical sequences also seems to contribute to children's construction of reference in dialogue, and continuity in discourse. Several studies have highlighted this phenomenon from various perspectives. Working on Emily's early monologues, Levy (1989, 1999) contended that the appropriation of the first "anaphoric" uses of pronouns is based on the adult's discourse sequences taken up by the child. Whereas the first pronouns used co-refer only "with the very same nouns that were previously contrasted with pronouns in monologue, and whose referential relation was observed by the child in social context" (Levy, 1999: 235), the anaphoric function of pronouns is considered to be acquired when children are able to elaborate their own speech. Clancy (2008) took a complementary perspective when she adopted Bock's syntactic notion of priming (Bock, 1986; Bock & Griffin, 2000, inter alia) and Du Bois's notion of dialogical syntax (see Du Bois, 2014). Her results converged with the idea that children begin taking up referring expressions in dialogical sequences before grasping their specific function. Reusing the interlocutor's forms provides the child with the experience of the appropriate contexts of use, and facilitates his/her further mapping of forms and functions. The role of priming was also indirectly considered by Matthews and colleagues (Matthews et al., 2006) to account for early, appropriate uses of referring expressions. Following

Pickering and Garrod (2004), they suggested that in the current interaction, the child shares, with the adult(s), aligned and mechanically generated situation models that do not need to be adjusted for accessibility. This alignment would allow the child to respond appropriately. Through these experiences, children would learn the manner in which referents are introduced and maintained without needing to rely on a previous assessment of availability for the interlocutor. This stance, however, is highly debatable, both for adults and children. Considering the latter, E. Clark (2015) showed that the construction of a common ground can be accounted for by the child's specific dialogical moves and the adult's scaffolding.

2.2.3 *Reference scaffolded by dialogue*

From the studies reviewed in the previous section, we can set forth the general hypothesis that the first steps in the development of reference and referential continuity are supported by dialogue. However, we also know that young children's dialogical involvement is rather irregular (Bloom et al., 1976; McTear, 1985; Ninio & Snow, 1996) and that children may not spontaneously ensure referential continuity. Referential development is strongly scaffolded by adults, who provide children with a "child-friendly" environment. Adults display various direct and indirect cues that guide children in identifying referents and grasping topical continuity (for a review, see Ateş-Şen & Küntay, 2015). In Western middle-class families,[6] adults' responses to children's non-contingent utterances or gestures support their integration into coherent sequences. They often make sense out of children's utterances and retrospectively give them the status of dialogue initiations (Snow, 1977). Adults can also structure their own discourse in accordance with the children's utterances (Filipi, 2014). In the same vein, adult reformulations of children's utterances contribute to common ground (E. Clark & Bernicot, 2008). Adults can also display their misunderstanding and, in doing so, get the child to clarify her/his utterances (Marcos & Bernicot, 1997) and/or improve his/her wording (Matthews et al., 2012; Matthews et al., 2007). The experience of clarification sequences gives children the opportunity to learn, in the immediate and long terms, how to adequately encode referents in contexts of potential indetermination or ambiguity. More precisely, Mathews et al.

> propose that it is by engaging in such processes of repair that children build up a repertoire of conversational models, learn about relevant features of their

6. The situation can be very different in other cultures where adults are not expected to act in this way and therefore do not interpret the children's imperfect utterances (see Ochs & Schieffelin, 1995).

> environment, gain insight into other minds, and ultimately come to fully understand why the information they provide in conversation is needed in the first place. (2012: 206)

2.2.4 *Dialogue, genre, activity, and discursive autonomy*

One of the main issues in the field is how young children come to master the pragmatic and referential functions/values of linguistic units. Children's first utterances are socially situated in shared experiences and are strongly grounded in dialogue with familiar adults. Gradually, their family-based communicative experience is extended to other "social spheres" like day-care center, kindergarten, and school. They engage in more diversified, socially-situated communication settings and roles (Cook-Gumperz, Corsaro, & Streeck, 1986; Duranti, Ochs, & Schieffelin, 2011), which also involve changes in the adult's behaviors (Hudelot, 2007). Through these new settings, children's first formats (Bruner 1983), which are simple, repetitive and tightly controlled by adults, develop into more complex and diversified forms that are less dependent on adult scaffolding. In other words, children's participation in dialogue becomes more and more autonomous. This process of increasing autonomy can be best observed in the acquisition of narrative skills, particularly in accounts of personal experience (de Weck, 2005). Indeed, for children, narratives are an important opportunity to gain cultural and linguistic experience, and to construct reality (Bruner, 1991).

Very early in childhood, children are exposed to stories heard, read, or jointly told. The language they hear is not only one of the here-and-now, but also one of the there-and-then, which can help them better understand, construct, and tell stories. Moreover, "this displacement of conversational topic in time and space is interesting in the first instance because of the progress it reveals in children's ability to cognitively, indeed, symbolically, represent the world" (Tomasello, 2003: 270). This is especially true for personal experience narratives. This speech genre, characterized by a there-and-then relation to the production context, and by experience-based content, is the first genre in the acquisition of discourse in which children are engaged to participate. Many studies (Eisenberg, 1985; Fivush, Gray, & Fromhoff, 1987; Hudson & Shapiro, 1991; Peterson, 1990; for a review, see de Weck, 2005) have pointed out a progression from total dependency on the adult – the child's participation consisting mainly of imitative repetitions of words produced by the adult – to relative autonomy at around the age of five or six. The child then becomes able to produce a discourse that is more comprehensible for an interlocutor who had no previous knowledge of the events.

Studies on narratives have provided evidence for the impact of adult involvement in joint storytelling and in the development of narrative skills in family (Haden, Reese, & Robyn, 1996; Low & Durkin, 2001; MacNamee, 1987) and classroom settings (Grossmann, 1996; Sulzby, 1985; Zucker, Justice, Piasta, &

Kaderavek, 2010). For example, by responding to the child's questions and adding information, the adult allows the child to connect the different components of the story (Nelson, 1991; Peterson & McCabe, 1994). This, in return, improves the way the child organizes his/her narratives and tells stories. Moreover, mothers exhibit a great diversity of styles during storytelling with their child (Haden et al., 1996). Variations have been observed in the amount of participation by the mother and by the child (Dickinson, De Temple, Hirschler, & Smith, 1992), the number of comments (Goodsitt, Raitan, & Perlmutter, 1988), or the number of questions asked to the child (Senechal, Cornell, & Broda, 1995). Later, during reading activities in school, teachers focus on narrative comprehension by emphasizing the organization of events and their importance, and by asking questions about them. The role of questions has been investigated to a greater extent (Florin, 1991; Lafontaine, 1984; MacNamee, 1987; Nelson, 1991; Peterson & McCabe, 1992, 1994, 2004; Pellegrini, Brody, & Sigel, 1985; Pratt, Kerig, Cowan, & Cowan, 1988; Sénéchal et al., 1995). Questions not only contribute to maintaining communication, but also to developing children's discourse skills – promoting a better structural organisation – thereby offering the child the opportunity to participate as a dialogue partner (Lafontaine, 1984; Danis, Bernard, & Leproux, 2000). Thus, children also acquire the skill both to differentiate important information from less relevant information from the interlocutor's point of view, and to distinguish what is new from what is given, i.e., to produce more appropriate discourse.

The trend in this acquisition can therefore be characterized as a transition from the co-construction to the autonomous construction of narratives, at which point the child is able to produce narratives with very little support from the adult. For children with DLD, the studies have shown that these children need more support from the adult than do their typically developing peers, and that this need is observed until adolescence (Wetherell et al., 2007). This makes it more difficult for these children to become autonomous in discourse construction.

Thus, children will face new linguistic problems, insofar as they will have to acquire the linguistic specificities of each speech genre, including expressions of reference. They must become skilled at taking into account the degree of shared knowledge with their interlocutor and his/her specific needs in order to choose appropriate referring expressions. Children also need to acquire diversified uses of referring expressions, which are dependent on the speech genre (narratives, personal-experience accounts, argumentation, informational texts; de Weck & Schneuwly, 1994) and the modality (oral vs. written; e.g., Jisa & Viguié, 2005; Rosat, 1991). Pronouns, for instance, are more often used in oral narratives to mention a given referent (de Weck, 1991).

Moreover, the kind of shared activity also influences the participants' language productions. This influence can be observed for various domains: syntactic

structure, lexical resources, and the pragmatic aspects of the current interaction, for adults and for children of all ages (Altinkamis, Kern, & Sofu, 2014; de Weck & Rosat, 2003; Gee & Savasir, 1985; Heurdier, 2015; Kern & Chenu, 2010; Leaper & Gleason, 1996). This suggests that during dialogue, dyads co-elaborate their utterances in relation to the activity being carried out. However, very few studies have been conducted on the relation between referring expressions and the current activity (Salazar Orvig, Marcos, Heurdier, & da Silva-Genest, 2018; Kern & Raffara, 2012). The impact of the activity can also be observed on DLD children's use of referring expressions. In a free-play activity, for example, they do not produce more null forms than their peer typical children (Thordardottir & Namazi, 2007), whereas differences can be observed on elicitation tasks (e.g., Grüter, 2005).

Thus, becoming autonomous in discourse production involves the development of different skills: to use referring expressions children have to take into account several aspects of the socio-discursive context (speech genre and modality, activity, relevant content, new vs. given information, etc.). But very few studies have looked into the relation between referring expressions and these aspects. Some chapters of this book deal with these issues.

2.3 The need for a multidimensional dialogical perspective

This overview of the main issues that arise when studying the acquisition of referring expressions shows that this developmental process cannot be understood from a single perspective alone, such as by considering purely morphological or purely syntactic aspects, as many studies do. For instance, studies on fillers typically consider only the phonetic/morphological interface, without raising the question of the possible functional aspects of these forms that children add to nouns and verbs. Also, studies on the expression of subjects in several languages have shown that the alternation of overt and covert forms cannot be accounted for solely in syntactic terms, even in non-null subject languages (Allen, 2006). The acquisition of the paradigms of pronouns and verb inflections goes together with the appropriation of the conditions of expression of subjects and the choice of strong versus weak forms. At the same time, usage-based studies have shown that children take up the most frequent patterns found in the adult input (Cameron-Faulkner, Lieven, & Tomasello, 2003).

Research has shown that both distributional and statistical learning strongly contribute to the first uses of pronouns, frequently associated with verbs. However, this is not in contradiction with the discourse-pragmatic explanation. Frequent patterns in the input are frequent because they correspond to means of achieving frequent social acts and conveying recurrent meanings. They have socio-pragmatic *raisons d'être* (Lieven, 2016; Tomasello, 1999), and they are embedded in

frequent formats/scripts and activities (Nelson, 2007). Nelson (Levy & Nelson, 1994; Nelson, 2007; Nelson & Shaw, 2002) argued that new forms are acquired along with their distributional features because children experience them in specific language games (following Wittgenstein 1953; see also Nelson, 2009). At first, children grasp the overall contexts in which grammatical forms are used. They reproduce those contexts without necessarily mastering the adult value of the form. In this way, the semantic aspect of a grammatical word is thus built gradually. Furthermore, frequency can be overridden by pragmatic factors. Ochs and Schieffelin (1995), for example, showed that in Samoan language acquisition, the use of imperatives by children depends less on their frequency in the input than on the children's awareness of the social indexicality of the verb. Similar observations can be made about the use of personal pronouns (Salazar Orvig, 2017).

Our stance is that beyond a statistical view of the input, the dialogue and dialogical continuity constitute a driving force that can affect the way children grasp the use of referring expressions. This is because dialogue provides the child with the actual experience of referential continuity – which he/she experiences in various socio-discursive contexts, such as in conversation, games, or shared reading – or because adults scaffold children's use of referring expressions.

Our contention is that the acquisition of referring expressions depends on the interaction of these various factors, both formal and functional, and that the construction of forms, the emergence of meanings, and the appropriation of uses cannot be understood without addressing their interaction. Because children learn the language through socially-situated interactions driven by activities and scaffolded by adults, it seems to us that referring expressions, as a pivotal phenomenon in language acquisition, cannot be properly approached without taking their multiple dimensions into consideration. This constitutes both a theoretical and a methodological challenge.

3. Dialogical approach: methodological implications

Considering the challenges mentioned above, our position in this volume is that adopting a dialogical approach may shed new light on the topic of the acquisition of referring expressions. In this approach, the focus is both on socio-discursive contexts and on dialogue – in other words, on the forms and functions of utterances in the co-construction of discourse. However, in the study of referring expressions, it is methodologically impossible to simultaneously and equally embrace all formal and functional aspects. It is possible to adopt a multidimensional methodological and interpretive framework aimed at grasping the complexity of reference acquisition, even when a specific issue is being addressed. This framework

requires examining referring expressions in ecological, dialogical situations that are as close as possible to the child's communicative experiences.

Acquisition of referring expressions (as a construction process) depends on the forms and uses that children experience. Children gradually seize these forms-in-use as models, in dialogue. The forms-in-use are conditioned by the interactional setting (interlocutors, places, goals), the activity, and the speech genre.

The following chapters report the main results of a multi-year research program entitled *Acquisition of referring expressions in dialogue: a multidimensional approach* (DIAREF, see footnote 1), a collaboration of numerous researchers. The DIAREF studies were all guided by the dialogical approach described above. In this section we present our main methodological choices for selecting and analyzing the data. Section 3.1. presents the various corpora on which the studies were based, and Section 3.2., the various formal and functional aspects of our multidimensional approach.

3.1 Varied corpora

Data were all collected during meaningful shared activities (de Weck, 2002) in which a child is often interacting with an adult (dyads) – usually the mother, sometimes the father, but also with a small group of children and a teacher. This type of corpus allows us to observe the mutual verbal and non-verbal influences of the participants along with the impact of dialogue itself. This makes it possible to understand how adults scaffold children's language (Wood, Bruner, & Ross, 1976) and how children react to adults' verbal and non-verbal actions (de Weck & Salazar Orvig, 2019). It also allows the elucidation of the implicit models children are confronted with when interacting with adults, in addition to allowing us to potentially assess the similarities and differences in the child and adult uses. Natural situations with which children are familiar seem the most favorable to these types of analyses.

We compiled sets of data that had already been collected by our research teams as part of other research projects.[7] These data were supplemented by two

7. These research projects include the Colaje project (grant ANR-08-COMM-0021), Morgenstern & Parisse (2012); Développement du Langage et de la Communication entre deux et trois ans: influence du mode d'accueil (funded by the French Caisse Nationale d'Allocations Familiales), Marcos, Salazar Orvig, Bernicot, Guidetti, Hudelot & Préneron (2004); Les interactions mère-enfant en situation logopédique (Swiss National Science Foundation grants Nos. 100012–111938 and 100012–124744), Rezzonico, de Weck, Salazar Orvig, da Silva-Genest & Rahmati (2013); Nashawati's PhD dissertation (2010); Développement des conduites dialogiques (Salazar Orvig, 2003); Comparison between mother-child communication and father-child communication (Kornhaber-Le Chanu & Marcos, 2000); Yamaguchi-Adrien

specific sets of data collected for the purpose of the DIAREF project. The corpora differ in several respects, which are briefly presented below.[8]

Our data cover a variety of contexts in family and in nursery-school settings. They involve children between the ages of 1;7 and 7;5. There are two subgroups in the family corpora. The first group contains children aged 1;7 to 2;6 (toddlers), who were videotaped while interacting with their mothers in everyday home activities and in quasi-natural situations where the researcher brought specific toys or books. The second group contains older children ages 3 to 7 years, who were videotaped while interacting with their mothers in quasi-natural situations (joint storytelling and symbolic play). In the second group, a subgroup (ages 5 to 7 years) have developmental language disorders. The nursery-school data (ages 2 to 6 years) were collected from four different classes in which a teacher is interacting with a small group of pupils during familiar joint storytelling. Some of the children participated in this same activity both at school and with their mothers. This gave us comparable data in two different social settings, which is one of the novelties of some of our studies. In order to compare the family and school settings to an experimental one, we collected data from young women telling an experimenter the same story used for the child-mother data.

The studies reported in this volume selected relevant data sets from the corpora, depending on the specific issues addressed. Similarly, not all of the data from the various activities involving a given dyad were used. Details regarding data selection are found in each chapter.

3.2 Formal and functional aspects in a multidimensional approach

Taking this multidimensional approach to the development of reference, we aim to link the formal and functional aspects of language acquisition. This involves two stages, a descriptive phase and a subsequent analytical phase. In the descriptive phase we identified all referents in the participants' speech, as well as all the corresponding nominal expressions. The linguistic expressions were described in terms of the following dimensions:

– Grammatical categories: all expressions were categorized from the grammatical standpoint (as nouns, pronouns of the different types, and dislocations, as well as null forms and fillers).

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project (part of Leonard project, grant ANR-JC05_47273 and Yamaguchi's PhD dissertation, 2012).

8. See Appendix 1 for a detailed presentation of all corpora.

– Phonetic and phonological features were considered for the study of fillers, proto-determiners, and proto-pronouns, and their development into adult forms.
– Also, in one case, the prosody (presence/absence of an intonation contour) of selected referring expressions was analyzed.

In the analytical phase, we studied the impact of formal factors and functional factors (referential, socio-discursive and dialogical) on the use of the various referring expressions.

The *formal factors* included:

– Syntactic factors: the syntactic function of the referring expression, mainly the subject, and verb frames in which the referring expression occurred.
– Distributional factors: the lexical form associated with the referring expression and, for dislocations, the pre- or post-verbal position of the dislocated term.

The underlying assumption was that the acquisition of verb and noun morphology should not be dissociated from the construction of reference.

The *referential factors* included:

– The type of referent: (a) the difference between referring to entities and referring to discourse participants (Benveniste, 1966), and (b) in narratives, the characteristics of entities: animacy (animate vs. inanimate referents), and primacy (main vs. secondary referents).
– The referent's attentional and discursive status, which reflect its accessibility and/or givenness: new, activated, discourse-given, or reintroduced after a thematic change.
– The position of the referring expressions in the referential chain: whether the referent is mentioned for the first time, maintained, or reactivated after several turns without being mentioned. This perspective is more relevant to narratives than is the attentional and discursive status because during joint storytelling joint attention is necessarily achieved.

The *socio-discursive and dialogical factors* included:

– The activity being carried out (storytelling, play, snack, etc.).
– The influence of speech genre (narrative, description of actions or states, labelling, justification, negotiation, explanation, etc.).
– The social status of the child's adult interlocutors (mother, teacher), the social setting (home, school).

- The interactional setting, when we consider adult discourse: the relevance of the addressee, that is the person for whom the discourse is formulated (TD or DLD child, adult experimenter).
- The modality of participation in the dialogue, and more precisely the relation between the utterances of the interlocutors (continuity, contrast, opposition, reiteration).
- The influence of the adult's discourse on the child's use of referring expression.

Depending on the issue addressed in each study, more specific analyses were conducted to take into account the interaction between some of the above factors.

The role of these different factors must be examined both separately and together, in order to account for the diversity and complexity of the referential system, which cannot be looked at only by itself. We assessed the impact of the factors examined by using statistical tests. Our data, as it is often the case with empirical data drawn from naturally occurring situations, did not satisfy the minimal assumptions for a parametric test (normal distribution, homoscedasticity, and variance equality), so we used non-parametric tests which allowed us to compare distributions or groups. In most of the chapters, we explored the impact of both formal and functional factors using mixed-effect binomial regressions, including random-effect variables such as participants and sessions. Interaction between factors was further assessed using binary partition trees drawn with the ctree function included in the "party" R package (Hothorn & Zeileis, 2015).

4. This book

The book is divided into two parts, which build on each other: The first part deals with reference and grammar, and the second part deals with the role of communicative experience in the acquisition of reference. Together, they investigate the grammatical and communicative factors at play in the uses of referring expressions in their various facets.

In Part I, "Reference and grammar", the chapters present children's uses of referring expressions, both in terms of their formal features and in terms of the pragmatic and discursive factors that affect their choice in discourse. This part opens with a discussion by Yamaguchi, Salazar Orvig, Le Mené, Caët, and Rialland (2021, Chapter 2) on the need to include the proto-morphological phenomenon of fillers in studies on referring expressions and their role as precursors of grammatical units. Yamaguchi and colleagues address several issues covering a wide range of formal and functional aspects. After identifying the various prenominal and preverbal forms and assessing the weight of transitional forms for each of these

two positions, the chapter explores the impact of different factors on the form and use of fillers, including the specificity of their phonological realization, their distributional properties, and sensitivity to their potential referent. The authors present arguments for considering filler syllables as early grammatical units in formation.

Da Silva-Genest, Marcos, Salazar Orvig, Caët, and Heurdier (2021, Chapter 3) address the use of referring expressions by young children in naturally occurring dialogues, whereas Rezzonico, Vinel, de Weck, Hassan, and Salagnac (2021, Chapter 4) examines the use of referring expressions by older children in a storytelling activity. Da Silva-Genest and colleagues focus on three strong forms (nouns, strong demonstrative pronouns, and strong personal pronouns) and three weak forms (clitic personal pronouns, null forms and fillers). They examine the impact of linguistic development, type of referent (participants vs. entities), syntactic function, and the referent's attentional and discursive status on the use of these six referring expressions, thus exploring the intertwining of morphological, syntactic, and pragmatic development. Rezzonico and his colleagues focus on the way older children produce referring expressions when engaged in a joint storytelling activity with their mothers. The children's use of referring expressions is analyzed in terms of five factors: the referent's characteristics (animate vs. inanimate, primary vs. secondary referents), its grammatical category, its syntactic function, its discursive status (position in the referential chain), and the child's chronological age. By assessing both the individual effects and the interaction of these four factors, these authors identify the network of factor interactions, which can differ for nouns and third-person pronouns.

In Chapter 5, Rezzonico, Bernasconi, de Weck, da Silva-Genest, and Jullien (2021) deal with the uses of referring expressions by children with developmental language disorders, as compared to typically developing children, in a shared storytelling activity with their mothers. In particular, subject omissions and the diversity of the types and forms of pronouns are investigated in relation to the position in the referential chain and the syntactic function. The results bring new insights to the discussion on the relation between morphosyntactic difficulties and discursive and pragmatic dynamics. Finally, Klein, Jullien, and Fox (2021, Chapter 6) explore the interaction of formal and pragmatic factors in syntactic constructions (dislocations and verb frames) and the intonation contour of the referring expressions used in these constructions. On one side, they examine the extent to which young children's sensitivity to the position in the referential chain, as compared to their adult interlocutor, is expressed in their syntactic choices (e.g., dislocations), and in variations in the intonation contour. On the other side, they assess the respective weight of syntactic constraints and the position in the referential chain on the use of referring expressions and their intonation contours when considering verb frames.

Part II of this book further explores children's early pragmatic skills by considering "The role of communicative experience" in its functional dimension. This part addresses some of the main aspects of this experience, from child-directed speech and dialogue to the role of speech genre and the current activity. More specifically, the authors examine the models of referring-expression use that children experience in different interactional and social settings, as well as the influence of speech genre and activity on the choice of referring expressions by both the children and the adults. The interaction between the adult and child productions are considered within the dynamics of the dialogue.

In Chapter 7, Marcos, Salazar Orvig, da Silva-Genest, and Heurdier (2021) explore the potential influence of adult input and dialogue in young children's uses of referring expressions. They address this issue from different angles. After comparing the children's and the adults' uses of referring expressions, the authors assess the potential adaptation of the adults' uses to their children's linguistic development. They then go on to explore the influence of the adult's forms on the child's uses (i.e., priming), considering the position of the referring expressions in dialogical moves as an alternative account. Finally, they examine the way dialogical sequences scaffold the emergence of children's referential skills. In Chapter 8, Hassan, de Weck, Rezzonico, Salazar Orvig, and Vinel (2021) focus more specifically on the impact of the interactional setting on the adult's uses of referring expressions during storytelling. With the aim of understanding the models children are exposed to, these authors explore not only the implications of co-constructing a narrative with a child as compared to telling the same story to an experimenter, but also the impact of co-constructing a narrative at home as compared to telling a story with a group of pupils at school, or co-constructing a narrative with a typically developing child as compared to co-constructing the narrative with a child with developmental language disorders.

The next two chapters further explore the impact of the interactional or discursive context on the use of referring expressions. De Weck, Hassan, Heurdier, Klein, and Salagnac (2021, Chapter 9) attempt to account for the relative effects of two factors – the activity undertaken by the participants in the interaction and the social setting (home or school) – on toddlers' and older children's use of referring expressions in dialogue. The authors focus on the following activities: daily routines, activities based on pictorial material, playing with toys, and joint storytelling. The comparison of the two social settings is conducted only for the joint storytelling activity. In all cases, the use of referring expressions is analyzed with respect to their position in the referential chain. This chapter provides a weighted analysis of the pragmatic and interactional factors involved. Finally, Vinel, Salazar Orvig, de Weck, Nashawati, and Rahmati (2021, Chapter 10) examine how speech genres influence the choice of the referring expressions in toddlers' and older

children's productions. Speech genres are considered at two levels: the discursive-sequence level (narrative discourse or here-and-now discourse) and the utterance level (such as description, explanation, labelling, etc.). This chapter assesses the relative weight of speech genre with respect to the position in the referential chain, in the productions of the two groups of children during a picture-based activity. The implication of the interactions between these factors is discussed in view of gaining a better understanding of the acquisition paths of young children.

Lastly, in Chapter 11, Salazar Orvig and de Weck (2021) undertake a general discussion of the results presented in Chapters 2 to 10. These results point out the strong interaction of the formal and functional facets of children's acquisition and use of referring expressions. As a whole, the chapters highlight the need to consider the dialogical and socio-discursive dimensions of this process, and not just the formal and cognitive ones. Through its journey, the book brings out a set of arguments in favor of a dialogical and interactionist account of children's referential development.

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PART I

Reference and grammar

CHAPTER 2

Filler syllables as precursors of referring expressions

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In this chapter, we examine the properties of filler syllables as transition forms in the development of referring expressions. In particular, we hypothesize that fillers are precursors of referring expressions. We focus on the distribution, the phonological form and the referential function of fillers in prenominal and/or preverbal positions, in comparison to others forms in these positions. Results show that first, the substantial presence of fillers does not lie in lexical factors, and that they are used in combination with other prelexical forms. Second, their variable realizations are not due to a phonological deficit, and they also exhibit paradigmatic patterning with the use of specific consonants. Fillers also share some of the functional characteristics of grammatical units, since their distribution and presence suggest that they play a role in the construction of the verbal and nominal categories. Moreover, in the preverbal position, children's use of fillers varies according to the topic of the utterance. In conclusion, filler syllables exhibit the formal and functional characteristics of a transitional category and an adult-like paradigm of referring expressions at the same time, and should be studied as such.

Keywords: filler syllables, referential expressions, prenominal position, preverbal position, first grammatical units, phonological form, distributional factors, referential function

1. Introduction

One of the main goals of this book is to capture the gradual emergence of the first referring expressions, from both a formal and functional perspective. The aim of

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the present chapter is to examine the status of filler syllables as transition forms in the development of referring expressions in early French. In particular, we hypothesize that fillers are precursors of referring expressions in spite of their non-adult realizations at the observed period. Before examining this hypothesis in several sets of data from French-speaking children, we first review the literature on fillers and different perspectives concerning their role in early acquisition.

1.1 Fillers in the context of the development of referring expressions

Referring can be done using different morphosyntactic forms, such as pronouns or noun phrases introduced by a determiner. Children's acquisition of the different referring expressions is not an all-or-none process, i.e., acquired vs. not acquired, but rather a gradual one. For instance, while some semantic-referential distinctions between definite and indefinite determiners are acquired early, such as specific vs. non-specific reference or labeling vs. deictic reference, other functions like the anaphoric function of definite determiners are acquired later on (Hickmann, 2003; Karmiloff-Smith, 1979; Maratsos, 1976).

Along with the various uses of referring expressions, children need to acquire their formal properties, i.e., their phonological shapes and their distribution. In child productions, positions where referring expressions are expected may be occupied differently. They may be empty, filled with adult-like forms, contains only nouns, or contain forms called "filler syllables" (Peters & Menn, 1993), which are variable, "unglossable syllables". Although adult-like morphemes become predominant as mean length of utterance (MLU) increases, all of these different forms may coexist at some point in development. To capture the gradual development of referring expressions, we need to address the question of these early forms, which share distributional characteristics with referring expressions.

Some authors do not take fillers into account when studying the acquisition of referring expressions because they do not deem them to have any grammatical value. For instance, Coene (2006) sees fillers as elements produced in place of morphological units that do not carry any of their morphosyntactic features such as number, gender and person.

In other cases, filler syllables were not taken into consideration, either because they were disregarded during the transcription process, or because they were excluded without dealing with their potential morphological status (Hughes & Allen, 2013; Pine & Lieven, 1997; Schaeffer & Matthewson, 2005; Valian, Solt, & Stewart, 2009, inter alia). The exclusion of filler syllables could be construed to mean that their occurrence in children's data is rare. However, several studies have shown that fillers represent between 10% and 60% of prenominal and/or preverbal forms, at least in French (Bassano, Maillochon, & Mottet, 2008), English (Peters & Menn, 1993), and Greek (Christofidou & Kappa, 1998).

In the cases where they have been studied, filler syllables have been observed through the study of the development of grammatical morphemes (Bassano, 2000; François, François, Sourdot, & Sabeau-Jouannet, 1977; Grégoire, 1937; Kilani-Schoch & Dressler, 2000; López Ornat, 2001; Peters, 2001; Peters & Menn, 1993; Veneziano & Sinclair, 2000, inter alia). Their exact nature is subject to discussion, as suggested by their various labels: "article-like elements" or "schwa-forms" (Karmiloff-Smith, 1979), "underspecified positional place holders" (Kilani-Schoch & Dressler, 2000), "Prefixed Additional Elements" (Veneziano & Sinclair, 2000), and "fillers or "filler syllables" (Bassano, 2000; Peters, 2001; Peters & Menn, 1993).

Several studies have focused on the variability of filler syllables. Peters (2001) showed that their shapes vary: fillers can be realized as a single vowel, a single consonant, or a syllable composed of different vowels and consonants. Fillers are also subject to individual variation: they are not observed in all children (López Ornat, 2003) and they may be used in different proportions by different children (Peters & Menn, 1993). The onset and frequency of filler use may also differ according to the language being acquired (Veneziano, 2014).

The uncertainty surrounding the phenomenon of fillers has raised several questions and has led to numerous studies focusing either on the development of referring expressions or on the acquisition of morphosyntax. These studies have approached fillers from different angles. For some, fillers are seen as a homogeneous category, regardless of the child's linguistic level. An example is Bottari, Cipriani, and Chilosi (1993/94) who view fillers as "monosyllabic place holders" that possess the same syntactic function as grammatical morphemes, but lack morphological and phonological status. For other authors (Gerken, Landau, & Remez, 1990), function morphemes are fully encoded by children, but their non-adult realizations, such as omissions or fillers, depend on performance or "speech production limitations". This latter perspective would imply that from the moment phonology is acquired, adult forms – or at least approximated versions of adult forms without morphological marking – should be expected in prenominal and preverbal positions. We can wonder whether the phonological forms of fillers are indeed phonological approximations of the target morphemes or whether their forms may reflect their transitory properties as well.

Other authors (Kilani-Schoch & Dressler, 2000; Lleó, 2001; Peters, 2001; Peters & Menn, 1993; Veneziano & Sinclair, 2000, inter alia) consider fillers as multidimensional elements that are evolving from a "pre-morphological" to a (quasi-) morphological phase (Dressler & Karpf, 1995). Initially, fillers are mostly vocalic elements and are thought to have purely phono-prosodic properties, depending on the language's sound and rhythmic regularities. During the second phase, known as "proto-morphological", filler syllables keep on being produced for prosodic purposes but also start to share some characteristics with adult grammatical morphemes, from the standpoint of both their formal and their functional

dimension. According to Veneziano (inter alia, 2003), the transition between the pre- and proto-morphological phases is reflected in the distribution and forms of fillers. In the productions of two French-speaking children, this author found that during the second phase, fillers differed as to whether they were present or absent, and in form, depending on whether they were in front of nouns or in front of verbs. This ongoing specialization was regarded as a sign of the construction of noun and verb proto-categories.[1] In this view, the construction of grammatical paradigms, such as pronouns and determiners, and the use of differentiated fillers reflect the construction of clearly contrasted categories such as verbs and nouns.

In the final period, called "morphological", the phonological form of filler syllables is close enough to the adult targets to be clearly identified. Their distribution matches the distribution of adult forms and they seem to fulfill the same functions.

In the following section, we focus on studies that have attempted to understand the construction of preverbal and prenominal morphemes, and in particular, on those providing either positional and distributional, or semantic and pragmatic, explanations to the development of pronouns, determiners, and their filler counterparts.

1.2 Construction of the pronoun and determiner categories

Contrary to other Romance languages, in adult French, both prenominal and preverbal positions are usually occupied by a morpheme. With the exception of a few attributive uses, determiners are mandatory for common nouns both in referential and in non-referential uses. Finite verbs are generally preceded by a pronoun, even in dislocations, i.e., a clitic subject and/or object pronoun,[2] a strong demonstrative or another pronoun such as an interrogative or indefinite pronoun. Cases where a noun phrase acting as the subject directly precedes a verb are much less frequent (Hickmann, 2003). In short, in their experience of adult language, children are generally frequently exposed to the presence of a short grammatical morpheme preceding the lexeme.

1.2.1 *Positional and distributional factors in the emergence of pronouns and determiners*

For some authors who take a prosodic approach (Demuth, 2001; Demuth & Tremblay, 2008), early pronouns and determiners are treated as prosodic elements that

1. See, among others, Tomasello (2003) or Veneziano (2003) for a discussion about the construction of adult syntactic categories.

2. We cannot include a linguistic discussion on the status of clitic subjects, considered either as full pronouns and/or as affixes. For a discussion on French language acquisition, see De Cat (2005) and Culbertson & Legendre (2008), among others.

fill a specific language-dependent rhythmic pattern. In this approach, early function morphemes and fillers are treated together as a "phonological class" of elements that share segmental (specific consonants, reduced vowels) and prosodic (unstressed syllables, part of a prosodic foot) properties, and as cues to segmentation and labeling (Gerken, 1996; Gerken et al., 1990). The presence of these early prelexical[3] forms is not part of morphological development but is related to the acquisition of prosodic units, and their production depends on the length of the lexeme's phonological phrase. Before children acquire full grammatical morphemes, prelexical forms are thought to appear as part of the phonological word, together with the lexeme. In this case, they are in a weak prosodic position, and are prosodified with the subsequent lexeme, which occupies a strong prosodic position. Demuth and Tremblay (2008) postulate that a prelexical form and the lexeme that follows are first prosodified as a binary foot, and so prelexical forms would be prosodified at a higher level (such as the prosodic word). This approach might explain why fillers and generally determiners usually occur before one- and three-syllable lexemes (Demuth & Tremblay, 2008), although it does not explain all occurrences (Le Mené, 2017; Le Mené & Yamaguchi, 2017). In this view, prelexical forms are analyzed in terms of their absence or presence for satisfying the prosodic constraints of the language in question, but it does not explain why fillers occur instead of determiners or pronouns, or account for the variety of phonetic realizations of prelexical forms. Moreover, is there a difference in the production of adult grammatical morphemes vs. that of fillers? And if their presence is dependent on the syllabic length of the lexeme that follows, then shouldn't we expect specific lexemes to be systematically associated with prelexical forms?

Such accounts have been proposed in the literature on grammatical morpheme development. For instance, in addition to the progression from a large significant effect to a more marginal effect of the rhythm factor – mentioned above in the discussion of filler phases – Taelman, Durieux, and Gillis (2009) also observed that distributional factors can influence filler frequency. According to their study, the presence of schwa-like fillers would have less to do with prenominal position than with the words preceding the noun phrase. These "anchor words", which are highly associated to determiners in adult discourse, would confirm the significance of a distributional pattern such as the lexical and syntactic frames described by Pine and Lieven (1997). In their study, carried out with a usage-based approach to the acquisition of syntactic categories, Pine and Lieven examined the degree of dependency between lexemes and prelexical forms. With a focus on definite and

3. For convenience sake, prenominal and preverbal positions together will be referred to as "prelexical positions" even though these positions do not concern lexemes other than verbs or nouns.

indefinite noun phrases, the authors looked at whether children's first productions were characterized by a high degree of determiner variation ("overlap") in the prenominal slot. Their results showed that when a noun was repeated, the proportion of overlap was very low: the children tended to use particular nouns with particular prenominal forms. These frozen phrases could demonstrate children's limited ability to reuse determiners across lexical contexts. In that study, however, the authors took into account adult morphemes only and did not include fillers and omissions in their analysis. But if a wider perspective is taken including both adult forms (determiners and pronouns) and protoforms (omissions[4] and fillers), as suggested by Salazar Orvig et al. (2013), then would we expect the same kind of frozen uses, or would we rather expect variation phenomena to be more frequent than repetition of the same noun phrases?

1.2.2 *Semantic and pragmatic factors in the emergence of pronouns and determiners*

Formal, distributional factors are not regarded in all studies as the only factors involved in pronoun and determiner emergence. Other studies have focused instead on the semantic and pragmatic dimensions.

Regarding prenominal position, authors like Bassano et al. (2008) and Nashawati (2010) found that determiners were used in specific semantic contexts: they were more frequent preceding nouns referring to concrete inanimate entities than preceding nouns referring to animate entities or abstract inanimate entities. In addition, Bassano et al. (2008) found that omissions were mainly produced with animates, and that proto-morphological fillers tended to be produced in contrast to determiners and omissions preceding abstract inanimate nouns.

In a more discourse-pragmatic perspective, authors like Rozendaal & Baker (2008) and Salazar Orvig et al. (2013), have shown that morphology and pragmatics do not develop separately but jointly, and that most of the referential values of determiners are acquired early on, around the age of three years. In contrast, other authors (e.g., Karmiloff-Smith, 1979) argue that the plurifunctionality of determiners is not fully acquired until a late period, between the ages of 8 and 12 years, with forms being acquired in an unifunctional way.

We should point out that only a few studies on determiners have also focused on the potential pragmatic dimension of filler syllables. For these studies, two different approaches can be mentioned: some authors (Feldman & Menn, 2003;

4. The word "omission" is frequently used when a form is absent in a location where it is expected. The use of this term may imply a process from the child's viewpoint, which is why we use the more neutral expression "no form" in this chapter.

Kilani-Schoch & Dressler, 2000) addressed the issue of utterance function (in a proto-illocutionary mode), while other authors like Salazar Orvig et al. (2008, 2013), Morgenstern (2009), and Le Mené (2017) focused on the referential dimension. By analyzing the referents' discursive statuses, these authors showed that fillers are not produced randomly but compete with omissions at first and then later, with determiners, in relevant referential oppositions. According to the authors, these contrasts could be the reflection of the child's early sensitivity to the relation between grammatical morphemes and functions.

Regarding the preverbal position, studies on the development of pronouns in French-speaking children suggest that first-, second-, and third-person pronouns develop differently. Some authors have shown that first-person pronouns take an adult-like form before second- and third-person pronouns do (Ricard, Girouard, & Gouin Décarie, 1999). Others have noted that third-person pronouns are produced in an adult-like way before first- and second-person pronouns (Belzil, 2007; Hamann, Rizzi, & Frauenfelder, 1996). Differences in the observed developmental patterns may derive from the methods used to collect and/or analyze the data, but they lead to different types of explanations. To account for the earlier use of first-person pronouns, as Ricard et al. (1999) observed, two kinds of hypotheses have been set forth. A linguistic hypothesis, the "semantic complexity" hypothesis (Clark, 1978), states that first-person pronouns are acquired earlier because they only refer to one discourse participant, the speaker, whereas other pronouns refer to different discourse participants or entities. Cognitive hypotheses, such as the "speaker bias" hypothesis (Deutsch & Pechmann, 1978; Huxley, 1970), the "theory of mind" hypothesis (Bates, 1990; Dale & Crain-Thoreson, 1993) and the "visual-perspective-taking" hypothesis (Girouard, Ricard, & Gouin Décarie, 1997; Loveland, 1984; Ricard et al., 1999), state that first-person pronouns are acquired earlier because the speaker (the child him/herself) is the reference point and is thus immediately accessible. To accurately use second- or third-person pronouns, children need to acquire the capacity to share others' mental or visual perspectives. To account for an earlier use of second- or third-person pronouns, as observed by Hamann, Rizzi, and Frauenfelder (1996), Hamann (2002), and Belzil (2007) suggested that first-person pronouns do not need to be produced (or at least not in an adult-like way) because the referent is a given participant in the situation of communication and can be easily retrieved. This hypothesis is related to the discourse-pragmatic approaches proposed to explain the presence or absence of subjects in children's utterances (see Allen, Hughes, & Skarabela, 2015). None of these studies on the differentiated development of first-, second-, and third-person pronouns mention the production of "filler syllables". Only Hamann (2002) specifies that "clearly identifiable pro-forms" such as [l] or [i] for *il* ('he') and [j] for *je* ('I'), seen as "phonetic approximations", were counted as clitics, that schwas or

[e] for *je* ('I') were not counted as clitics, and that some "unidentifiable" pro-forms were excluded. However, if fillers were taken into account as a specific category of analysis to refer to the speaker, to the interlocutor or to discourse entities, would the same kind of observations and conclusion be made? Should we expect the same distribution of fillers independently of the targeted referent or can we expect, as observed in prenominal position in terms of referential vs. non-referential contexts (see Le Mené, 2017), the proportion of filler syllables to vary according to the referent?

1.3 Corpora used and outline of this chapter

In this chapter, we address some of the issues discussed above and raised in research on filler syllables. We do so by studying forms in prelexical positions in a large corpus of cross-sectional data and longitudinal follow-ups from French-speaking children,[5] as described in Table 1. The longitudinal data is divided into two subcorpora and concerns six children: the "longitudinal A" corpus[6] contains 32 sessions and includes six children, while the "longitudinal B" corpus[7] contains many more sessions with two of the children in the "longitudinal A" corpus. The cross-sectional[8] and longitudinal corpora were recorded during naturally-occurring dialogues of the children at home with their mother, father, siblings, or the observer.

Table 1. Data used

Type	No. of children	Age range	MLU range	Total no. of sessions
Longitudinal A	6	1;7–2;6	1.36–3.35	32
Longitudinal B	2	1;0–4;3	1.00–7.26	37
Cross-sectional	17	2–2;4	1.30–2.96	30

5. This corpus was compiled from several existing sets of data; Anaé and Madeleine from the Paris Corpus, the Childcare Corpus, the Nashawati Corpus, the Salazar Orvig corpus and the Yamaguchi Corpus. All corpora are described in Appendix I.

6. See Appendix I: Anaé and Madeleine from the Paris corpus; Nashawati Corpus, Salazar Orvig Corpus and Yamaguchi Corpus.

7. See Appendix I: this corpus contained more sessions from two children, Adrien (from the Yamaguchi corpus) and Madeleine (from the Paris corpus).

8. See Appendix 1: the Childcare corpus

Table 2. Data groups for quantitative analyses

	MLU range	Age range
MLU Group 1	1.32–2.00	1;7–2;5
MLU Group 2	2.02–2.50	1;10–2;11
MLU Group 3	2.52–3.37	1;11–3;5

For the quantitative analyses, all children included in the cross-sectional and longitudinal A corpora were divided into three groups, as detailed in Table 2. The significance of formal and functional phenomena was assessed through various statistical analyses detailed in each section.

In Section 2, we compare the presence and absence of forms in prelexical position in the whole corpus of longitudinal and cross-sectional data, in order to assess the weight of fillers in children's productions throughout development, in both the prenominal and preverbal positions. In Sections 3 and 4, we focus on the formal and functional properties of filler syllables to better understand their properties. Section 3 examines the formal properties of fillers, from the phonological and distributional angles. If filler syllables were part of the next lexeme, then for phonoprosodic or distributional reasons we would expect them to share phonological properties with that lexeme (Section 3.1). If fillers emerge in a specific pattern along with the lexeme that follows, be it a construction frame or a prosodic unit, then a regular co-occurrence of fillers with specific lexemes can be expected, as tested in Section 3.2. To further explore this issue, we focused on preverbal positions in Section 4, adopting a functional approach. More specifically, fluctuation in the proportion of fillers is analyzed according to the type of referent. We conclude by discussing our results in terms of the development of referring expressions.

2. Prenominal and preverbal forms at the onset of language production

2.1 Identifying the forms

Our study focuses on the possibility that fillers are precursors of referring expressions. Considering that fillers emerge from positional constraints (Veneziano & Sinclair, 2000), we identified them using strict positional criteria and disregarded segmental and functional criteria. As for formal criteria, we took a conservative position: any form produced in a non-adult realization in a position where a pronoun or a determiner was expected was counted as a filler, excluding uninterpretable forms (see below). In the literature, "phonological / phonetic approximations" of target morphemes are often seen as adult forms. This raises several issues: first, what counts as a "phonological approximation"? If we consider the

determiner *le* ('the') produced in an adult fashion [lə], is [ə] an approximation, since the vowel corresponds to the target vowel? Or do we consider that the missing consonant is too big of a difference from the target form? And what about [tə], which has a consonant, but it is not the target one? Deciding *a priori* what a phonological approximation is would have led us into a circular reasoning process, due to our phonological analysis in Subsection 3.1. Consequently, we chose to retain, as adult forms, only those forms that do correspond phonetically to adult forms. Another issue brought up by the concept of "phonological approximation" concerns their nature. This term may imply that while the morphological, distributional, and functional features of the target forms are present, the phonological component is still in the process of acquisition. In order to be sure of this, we need to analyze the child's whole phonological system, to see whether phonology is indeed in the process of acquisition. To answer this question in Subsection 3.1, we need to identify these forms specifically, frequently labeled as "phonological approximations" in order to compare them with the child's phonological system.

This conservative position was adopted for all of our data, so as to stay as close as possible to the description of forms and avoid the risk of overinterpreting the data. Our first step was to identify the forms. All prelexical positions were coded. Similar codings were adopted for (proto)-nouns and (proto-)verbs. In order to get the clearest picture of the distribution of forms, cases where the grammatical morpheme was not mandatory were excluded, i.e., all potentially licensed cases of a null determiner in proper nouns and quasi-proper nouns (*maman, 'mommy', papa, 'daddy'*) as well as some non-referential uses for nouns, and all infinitive and imperative forms of verbs. Three common categories (no forms, fillers, and target grammatical forms) were defined; the preverbal position needed two additional categories (amalgams and other adult forms).

No-form: No-forms occurred when proto-nouns or proto-verbs were preceded neither by a filler nor by a lexical or grammatical morpheme, as in Examples 1 and 2, respectively.

(1) Clément, 2;3, MLU 2.96[9]

Cle	[e sa? vwaty ?]	
	'et ça? voiture ?'	'and that? car?'

9. Example captions indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. The first three letters of the child's first name are given in lowercase (e.g. Cle for Clément), Fat stands for father and Obs for observer. When the children's utterances are transcribed phonetically (between square brackets [ ]), the interpretation in French is given in inverted commas. An approximate English translation is also given between inverted commas. Braces indicate uncertaintranscriptions or alternative interpretations. {X} stands for uninterpretable or inaudible segments. In the interpretations and translations, 'F' stands for a filler syllable, '/' stands for a pause, '§' marks overlapping segments.

(2) Madeleine, 1;11, MLU 2.62
Mad [fɛjɔ̃ɛisi]
'fait rien ici' 'does nothing here'

Note that a no-form preceding a verb does not necessarily correspond to a null subject (or zero pronoun). For instance, in Example 3 the verb is followed by an overt referring expression, which is the subject of the utterance.[10]

(3) Elodie, 2;2, MLU 2.02
Elo [pati ***la dame***]
'pa(r)tie ***la dame***' 'gone ***the lady***

Filler: A filler was defined as an additional vowel or syllable preceding a proto-noun or a proto-verb, as in Examples 4 and 5, respectively.

(4) Margaux, 2;3, MLU 2.62
Mar [***ə***ʃœʃ]
'***F*** singe'[11] '***F*** monkey'

(5) Daniel, 2;0, MLU 2.02
Dan [***a***tu]
'***F*** tou(rne)' '***F*** turns'

Amalgam: In some cases, as shown by Kilani and Dressler (2000), a sequence formed by a vowel and a verb can be interpreted either as filler + verb or as no-form + verb. This phenomenon concerns verbs such as *être* ('be') or *avoir* ('have') used as full verbs, as in Example 6, or as auxiliaries.

(6) Madeleine, 1;9, MLU 2.0
Mad [***e***pœ]
'***A*** peu(r)'[12] ''***A*** afraid'

Such phenomena correspond to the evolution of the preverbal position, as shown by Veneziano and Clark (2016). However, because our focus was the presence vs. absence of a precursor of a referring expression, we needed to be cautious in our interpretation. Therefore, we preferred not to count them either as fillers or

10. This could be regarded as a proto-dislocation, with the clitic resumptive subject truncated (De Cat, 2007; see also Chapter 6, Klein, Jullien, & Fox, 2021).

11. In the French and English interpretations of the children's utterances 'F' stands for a filler syllable.

12. In the French and English interpretations of the children's utterances 'A' stands for a potential amalgam.

no-forms. A conservative position was adopted, which is why they were set apart from both fillers and no-forms. We called them amalgams.[13]

Target form: Target forms occurred when adult-like forms preceded nouns and verbs. All determiners (definite, indefinite, possessive, and demonstrative determiners) were included in this single category. In preverbal position, target forms included both clitic personal pronouns (all persons), as in Example 7, and clitic demonstrative pronoun in the *c'est* construction, as in Example 8. Full left and right dislocations were included in this category when the clitic resumptive pronoun clearly preceded the verb, as in Example 9.

(7) Julien, 2;3, MLU 1.92

Jul	[***ɛl***e kase]	
	'***elle*** est cassée'	'***it*** is broken'

(8) Clément, 2;3, MLU 2.28

Clé	[***se*** de flœʁ?] ((Clé essaye de mettre une pièce du puzzle))	((Clé tries to put a piece into the puzzle))
	'***c'est*** des fleurs?'	'***is it*** flowers?'

(9) Pauline, 2;3, MLU 2.52

Pau	[me mwa ʒvulɛde zjø]	
	'mais moi ***j(e)*** voulais des yeux'	but me ***I*** wanted eyes'

Other adult form: Other adult forms were identified when a proto-verb was preceded by a lexical form,[14] as in Example 10, or a strong pronoun (personal, demonstrative, possessive, indefinite, interrogative or relative), as in Example 11.

(10) Daniel, 2;3, MLU 2.5

Dan	[***ɔto*** egaje]	
	'***auto*** est garée'	***car*** is parked'

(11) Rémi, 2;3, MLU 1.32

Rém	[***sa***maʁʃ ***sa***maʃ?]	
	'***ça*** marche ça marche?'	'***it*** works ***it*** works?'

In some cases, the prelexical forms could not be transcribed or interpreted, as in [tate dadade defoɕe] where only the proto-verb [defoɕe] (*'défoncé/er'* – *'smashed/to*

13. However, for practical reasons, in the other chapters of this book amalgams were included in the filler category.

14. This lexical form was analyzed for the prenominal position also.

smash') could be interpreted. In other cases, it was difficult to assign an interpretation to the form preceding the filler or the amalgam, as in [si:m adone mo] ('*XX a donné moi*' – '*XX gave me*'). All these cases were coded as uncertain (UNCT).

Inter-coder agreement was computed for 10% of the corpus. The score was 95.81 and Cohen's kappa was 0.95. Distribution differences across the MLU groups were computed using a Kruskal-Wallis test.

2.2 Results

Tables 3 and 4 present the distribution of prenominal and preverbal forms, respectively. In each table, "total %" indicates the percentage of each type of form (Target forms, Fillers, No-forms, etc) for the total number of occurrences in all sessions for each MLU group. For each type of form the minimum and the maximum percentages indicate the range of values for calculating the distribution of forms in each session.

Table 3. Distribution (in percentage) of forms in the prenominal position (total for all sessions, and maximum and minimum values), by MLU group

	Target forms			Fillers			No-forms			Uncertain	N=
	Total %	Range of %		Total %	Range of %		Total %	Range of %		Total %	
		Min	Max		Min	Max		Min	Max		
All MLU groups	39.4			30.2			29.1			1.3	3411
MLU GR 1	17.3	0.0	50.0	38.8	5.6	75.0	42.5	11.1	66.0	1.4	856
MLU GR 2	34.5	8.5	100.0	33.0	0.0	70.7	30.9	0.0	53.6	1.6	1135
MLU GR 3	56.6	20.0	87.5	22.9	0.0	56.9	19.6	5.3	55.6	1.0	1420

Tables 3 and 4 show that target forms increased as MLU increased, both in the prenominal position (Kruskal-Wallis rank sum for the three MLU groups; χ^2 :22.42, df:2 $p < .001$) and in the preverbal position (Kruskal-Wallis rank sum for the three MLU groups; χ^2 :12.28, df:2 $p = .002$). Moreover, the comparison of target forms in the preverbal and prenominal positions did not yield a significant difference (Wilcoxon, U: 658, df:1, $p = .1272$). In contrast, the percentage of no-forms decreased, both in the prenominal position (Kruskal-Wallis rank sum for the three MLU groups; χ^2 :14.99, df:2 $p < .001$) and in the preverbal position (Kruskal-Wallis rank sum for the three MLU groups; χ^2 :8.78, df:2 $p = .012$). In the preverbal position, there was no significant difference for other adult forms. Individual differences

Table 4. Distribution (in percentage) of forms in the preverbal position (total for all sessions, and maximum and minimum values), by MLU group

	Other adult forms			Target forms			Fillers			Amalgams			No-forms			Uncertain	N=
	Total %	Range of %		Total %	Range of %		Total %	Range of %		Total %	Range of %		Total %	Range of %		Total %	
		Min	Max		Min	Max		Min	Max		Min	Max		Min	Max		
All MLU groups	6.7			42.7			22.1			12.8			15.0			0.7	4053
MLU GR 1	4.1	0.0	23.5	27.2	0.0	75.0	26.9	4.4	64.9	17.0	0.0	61.5	24.2	0.0	66.7	0.7	607
MLU GR 2	6.9	0.0	50.0	35.6	2.3	86.7	26.3	0.0	69.4	14.3	0.0	28.0	16.2	0.0	46.2	0.7	1214
MLU GR 3	7.2	0.0	20.8	50.8	15.2	96.0	18.6	0.0	43.5	10.9	0.0	22.0	11.2	0.0	23.4	0.8	2232

(see min and max in Table 4) and category heterogeneity probably account for this lack of significance.

Notably, according to Tables 3 and 4, fillers occurred in 30% of the prenominal positions and 22% of the preverbal positions. Moreover, individual data showed that all children used fillers during the period observed – generally in both positions, but only in the prenominal position for three children.

Fillers paint a complex picture, however, since there was no significant difference between the MLU groups, whether for the prenominal position (Kruskal-Wallis rank sum test for the three MLU groups, $p = .106$ and $p = .258$ for MLU2 vs. MLU3) or for the preverbal position (Kruskal-Wallis rank sum test for the three MLU groups, $p = .114$ and $p = .706$ for MLU2 vs. MLU3). However, considering previous studies on filler use in French (Bassano, 2015) for the prenominal position, a linear development is not expected: fillers can be expected to first describe a rising curve and to then decline when adult forms begin to increase. One explanation for the variability observed in our cross-sectional data, notwithstanding the consistency in terms of age, could be that not all children are necessarily at the same point in their morphological development. If this were the case, we should observe rising then falling curves in the longitudinal corpus, although not necessarily at the same ages. Let us look at two different cases (from the six longitudinal follow-ups). Figure 1 presents the distributions of adult targets and fillers, by age for the two children.

Figure 1. Distribution (in percentage) of target forms and fillers in the prenominal and preverbal positions by age in months for two longitudinal follow-ups

Figure 1 shows that the two children exhibited different patterns even though their curves for target forms are rising and their curves for fillers (and amalgams) exhibit complementary shapes. Moreover, prenominal and preverbal fillers do not follow similar developmental curves for the same child: they do not reach the same values, do not have the same shapes, and their peaks and dips do not occur at the same time. For Adrien, preverbal fillers were already numerous at the beginning of the observations, continued to increase until he was 31 months old, and then began to decrease when adult target forms appeared. He also has a neat inverted V curve for prenominal fillers (with a peak at 35 months). Madeleine showed the opposite pattern with a clearly declining curve for prenominal fillers, suggesting that these fillers had reached their maximum frequency at the study onset (when she was 19 months old) and could do nothing but decrease in the months that followed. For her, however, preverbal fillers declined more slowly than prenominal ones.

2.3 Discussion and tentative conclusion

A first glimpse at the distribution of forms in the prelexical position suggests that the children in our study were in the midst of a transitional period, with a rather large number of target forms and also no-forms and fillers in both the prenominal and the preverbal position. This first result confirms the finding that such a transition is prevalent in the acquisition of French and needs to be taken into account

when considering the emergence of referring expressions. Moreover, the fact that we studied 59 sessions suggests that fillers are a pervasive phenomenon in French for the prenominal and preverbal positions alike. At the same time, this phenomenon was not homogenous here, whether on categorical grounds or on individual ones.

Two parallel issues now need to be investigated. We need not only to further examine the conditions under which fillers are used or not used, by focusing on their formal and distributional features but also we need to understand their fluctuations. Certainly, individual variability can be seen as a relevant factor but the individual sessions differed not only in chronological terms but also with respect to the activities carried out and the discourse topics discussed.[15] It is therefore necessary to look at other factors accounting for this heterogeneity. Is this heterogeneity due to lexical factors (are fillers lexically specific) or do they vary according to functional factors, in which case they would be proto-grammatical in nature?

3. Formal and distributional properties of filler syllables

This section examines the formal properties of fillers, by focusing first on their phonological properties and then on their distributional features.

3.1 Specific phonological properties of fillers

Fillers may vary in form from a single vowel or a single consonant to a syllable composed of various vowels and consonants. So far, however, variations in the form of fillers have only been studied in terms of their vocalic content (e.g. Veneziano, 2003; Veneziano & Sinclair, 2000).

The present study focuses on a less-studied phonological aspect of filler syllables: consonant content. While several studies of fillers have dealt with consonants (Feldman & Menn, 2003; Peters & Menn, 1993; Taelman et al., 2008, inter alia), few have compared them to the acquisition path of consonants in lexical words by the same children, which is the case in the present study. In lexemes, vowels are often acquired earlier and are more stable earlier than are consonants (Rose & Wauquier-Gravelines, 2007). By contrast, the various stages of consonantal

15. In Chapter 9, de Weck, Hassan, Heurdier, Klein, & Salagnac (2021) and in Chapter 10, Vinel, Salazar Orvig, de Weck, Nashawati, & Rahmati (2021) address the impact of activity and speech genre on the use of referring expressions. In Chapter 3, Da Silva-Genest, Marcos, Salazar Orvig, Caët, & Heurdier (2021) consider the influence of the subject position on the use of weak forms (including fillers) versus strong forms.

development need to be studied longitudinally over many months and even years. The study of consonants realized in filler syllables can be compared to that of consonants realized in lexemes, in terms of age of acquisition but also in terms of developmental path. This could provide phonological insight into the nature of fillers. In line with the various hypotheses about the nature of fillers detailed in the introduction of this chapter, we will try to answer three main questions about consonant realizations.

The first question follows from the "performance view" (Gerken et al., 1990) stating that non-adult realizations of grammatical morphemes may be due to production limitations. If this is the case, then these limitations could show up in two different ways. First, if a given consonant is not produced by the child due to articulatory reasons, then it should be absent from all words, including lexical words. Second – in the light of the literature on phonological acquisition – realizations of unacquired phonemes should be phonologically close to the target phonemes (for French acquisition, see dos Santos, 2007; Rose & Wauquier-Gravelines, 2007; Yamaguchi, 2012, inter alia). Thus, we ask whether consonants appear in fillers at the same time as they occur in lexemes, and whether non-target-like consonants are a phonological approximation of the target morpheme.

The second question is in line with the "prosodic view" (Demuth, 2001; Gerken, 1994) whereby filler syllables are produced for prosodic reasons. In this view, the question of form of fillers is often ignored; emphasis is instead placed on whether fillers are absent or present, irrespective of their segmental content.

However, language acquisition studies focusing on interactions between prosody and segments, such as Rose (2000) or Goad (1997, 2001), suggest that the segmental content of a weak prosodic position is often a copy of the segmental content of the strong prosodic position within the same prosodic domain. For instance, in CVCV words, where the last syllable occupies the head of a foot according to these authors, we generally observe regressive consonant harmony (hereafter abbreviated CH), as illustrated in Example 12.

(12) Clara, 1;03, from Rose (2000)
[bɑbuː] 'debout' /dəbu/ 'standing'
[bapæː] 'Gaspard' /gaspɑʁ/ (name)

If fillers are prosodified with the subsequent lexeme as belonging to a weaker position, then shouldn't they be subject to CH with the subsequent consonant? That is the focus of our second question.

The third question takes the "developmental" view (Bassano et al., 2008; Kilani-Schoch & Dressler, 2000; Lleó, 2001; Peters & Menn, 1993; Salazar Orvig et al., 2013; Veneziano & Sinclair, 2000, inter alia) according to which fillers evolve from prosodic entities into precursors of grammatical units. In this view, fillers are

not full grammatical units, and their form should reflect this incompleteness. Phonologically, this would translate into underspecified phonological features, which would be realized as unmarked segmental content (Avery & Rice, 1989). If so, are consonants in fillers realized as unmarked segments?

Below, we begin by presenting the method we used to answer these three questions. Then we analyze the different types of consonants that appear in prenominal and preverbal forms. At the end of this subsection, the predictions are discussed in the light of the results obtained.

3.1.1 *Method*

We analyzed consonant realizations in filler syllables located in strict prenominal and preverbal slots for the extended sessions of Madeleine and Adrien ("longitudinal B" corpus, see Section 1.3). Overall, 1405 filler consonants were analyzed, using the PHON[16] software (Rose & MacWhinney, 2014). We compared these realizations with the consonant realizations in lexical words, for the same children and the same sessions, presented in Yamaguchi (2012).

In the present study, we looked in particular at the syllable onset position and we only selected filler syllables composed of a consonant-vowel form (hereafter abbreviated CV). We confined our analyses to productions where the expected grammatical words begin with /l/ and /ʒ/, for two reasons. First, these are frequent consonants in French grammatical words: in the definite masculine singular and feminine singular determiners *le, la* (both translated as *'the'*) and in the first-person subject pronoun *je* (*'I'*). Second, these consonants are very different phonologically: they belong to different natural classes, and they do not share many distinctive features. Moreover, they are not acquired at the same time in lexical words (Yamaguchi, 2012). The expected grammatical words were identified on the basis of situational and referential cues, and based on morphological agreement with the following lexeme.[17]

3.1.2 *Results*

3.1.2.1 Accurate realizations of consonants and consonant harmonies

First, we classified the realization of consonants in the prelexical position as expected consonants, CHs and other consonants. Figure 2 and Figure 3 present the results for /l/ grammatical words and Figure 4 and Figure 5 present the results for the expected *je* (*'I'*), where capital Z stands for [ʒ].

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16. The PHON software allows alignment and phonetic transcription of media-based data, and facilitates the phonological analysis of transcriptions. For more information, see https://www.phon.ca/phontrac

17. Examples of identification are provided in Section 4 for *je* (*'I'*).

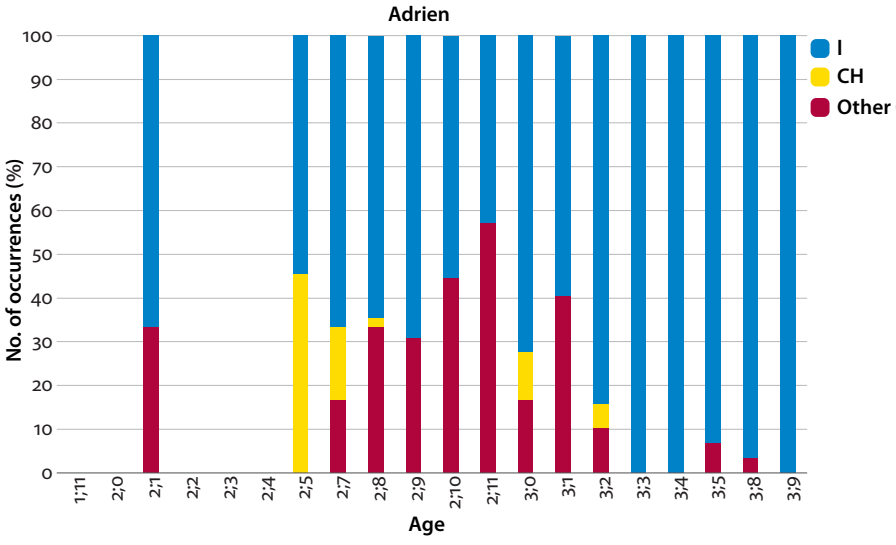

Figure 2. Types of consonants in prenominal forms where *le* or *la* (‘*the*’) was expected (Adrien)

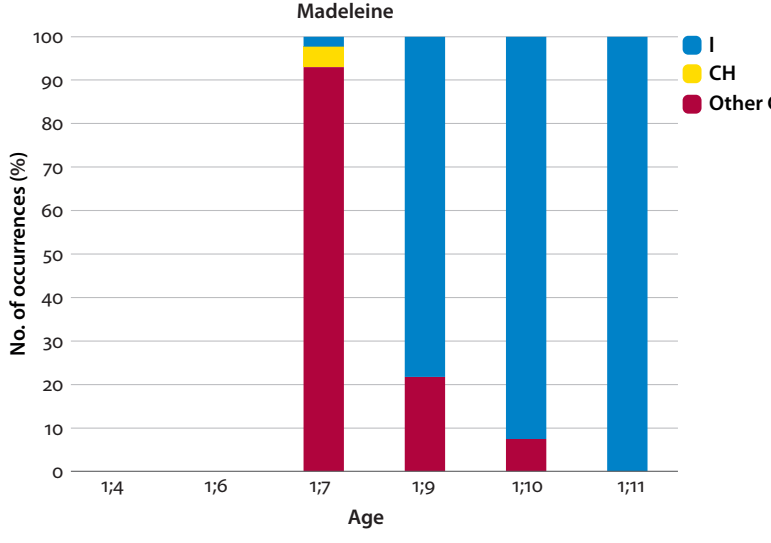

Figure 3. Types of consonants in prenominal forms where *le* or *la* (‘*the*’) was expected (Madeleine)

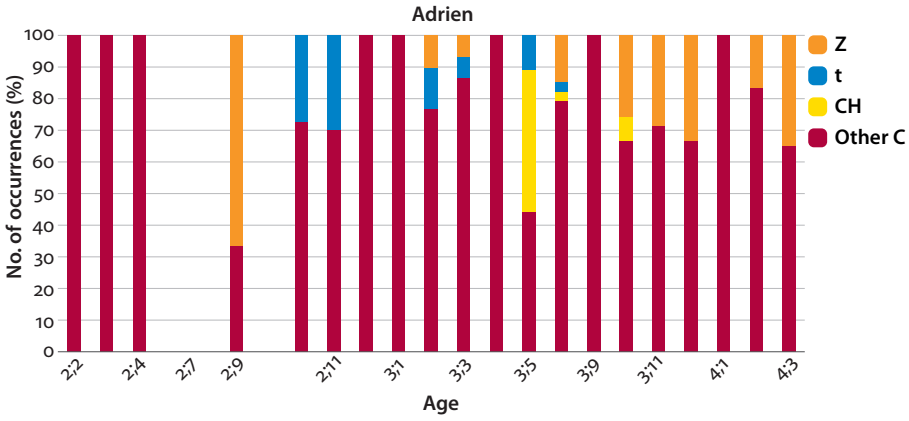

Figure 4. Types of consonants in preverbal forms where *je* ('*I*') was expected (Adrien)

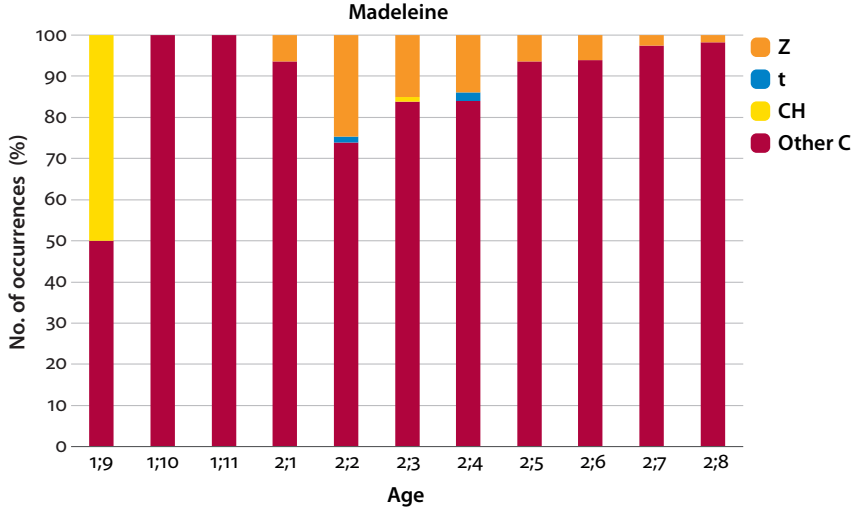

Figure 5. Types of consonants in preverbal forms where *je* ('*I*') was expected (Madeleine)

As seen in the above figures, CH represents a small proportion of the consonant realizations by both children, and is used in both the preverbal and the prenominal positions. Both of these patterns contradict the prosodic hypothesis.

As for the expected realizations, in the prenominal positions, [l]-forms represented a large proportion of the realizations, in both fillers and adult forms. However, between 1;11 and 3;9, 20% of Adrien's forms began with other consonants, and between 1;4 and 1;11, 31% of Madeleine's forms began with other consonants. In the preverbal position, the numbers differed from those in the prenominal

position. Most preverbal forms began with a consonant other than the expected /ʒ/, as Figure 4 and Figure 5 show. These results nevertheless support the syntactic hypothesis: most of the consonants in CV fillers were not realized as expected, which might be explained by a phonological deficit. To verify this hypothesis, we looked at the unexpected realizations of consonants in fillers.

3.1.2.2 Inaccurate realizations of consonants in lexemes and in prelexical forms
Even if a child has a phonological deficit, consonant realization is not random. In lexemes, before a consonant is produced accurately, it is realized in a phonologically approximate version (for instance, see dos Santos, 2007; Rose & Wauquier-Gravelines, 2007; Yamaguchi, 2012 for French).

As shown in Table 5, Adrien's realizations of /l/ at the syllabic onset of lexemes consisted mostly of the consonant [j] and CHs, out of the 29 inaccurate realizations of /l/. Only two occurrences of [t] and one of [d] were realized when /l/ was targeted in lexemes. Madeleine had only four inaccurate realizations of /l/, with 2 occurences of [d], one of [j] and one CH. We compared these realizations with unexpected consonant realizations in fillers. In the following tables, each kind of unexpected realization is shown as a percentage of the total number of unexpected realizations (indicated in the last column).

Table 5. Percentages of unexpected realizations of /l/ in lexical words and in prenominal fillers, across all sessions

	Realizations	**[j] %**	**[n] %**	**[t] %**	**[d] %**	**CH %**	**N**
A	Lexemes	44	–	7	3	44	29
	Fillers	6.25	2.5	17.5	61.25	12.5	79
M	Lexemes	25	–	–	50	25	4
	Fillers	6	6	80	4	4	50

In prenominal fillers where /l/ was expected, consonant realizations consisted mostly of the oral stops [t] and [d] for both children, adding up to about 80% of the unexpected consonant occurrences (Example 13). These consonants cannot be considered as phonological approximations of /l/, since they share few phonological feature values in French. Even though they share place of articulation, /t/ and /d/ are obstruents while /l/ is a sonorant, and they are stops while /l/ is continuous and produced with a lateral airflow. From a phonological point of view, realizing [t] or [d] for /l/ in French is surprising. Consonants that are phonologically closer to /l/ – like [j], which differs from /l/ only by the [±lateral] feature, or [n], which shares 60% of its feature values with /l/ – accounted for only a small proportion of the unexpected realizations in prenominal filler syllables.

(13) Madeleine, 1;7, MLU 1.85
Mad [ta kle]
'F clé' 'F key'

Let us now turn to the unexpected realizations of the consonant /ʒ/. Since /ʒ/ is acquired late, we found a substantial proportion of non-[ʒ] realizations. Instead of collapsing all the sessions together, we divided them into two phases in which particular patterns of consonant realizations emerged, as shown in Table 6.

Table 6. Percentage of unexpected realizations of /ʒ/ in lexical words and in preverbal fillers

		Coronal fricatives%	**[d] %**	**[v] %**	**[t] %**	**[k] %**	**[n] %**	**[j] %**	**[l] %**	**[w] %**	**[m] %**	**[ʁ] %**	**CH %**	**N**
A, 2;2-3;11	Lexemes	**46.5**	20.5	1.1	1.1			29.5					1.1	88
	Fillers	**12**	42.7	0.4	6.4	0.8	0.4	23.9		0.4			3.2	197
A, 4;0-4;3	Lexemes	**42.4**	18.2									6		44
	Fillers	**49**	37.3	2				9.8	2					51
M, 1;7-1;11	Lexemes	**88.9**									11.1			9
	Fillers	**3.6**	3.6				35.7	7.1	42.8		3.6		3.6%	28
M, 2;1-2;8	Lexemes													0
	Fillers	**91.1**	2.8		1.2	0.6	0.6	2.2	0.3					322

In lexical words, the most frequent unexpected realization of /ʒ/ for both children was a coronal fricative, which shares many phonological features with /ʒ/ (manner and place). These are shown in boldface in Table 6. Coronal fricatives (in our data: [z], [ʃ], [ç], [ɕ], [dʒ], [tʃ], [tɕ], [s], [dz]) are a phonological approximation of /ʒ/, which is a complex consonant bearing marked feature values. The realization of a lexical /ʒ/ via a coronal fricative was stable during the different time periods.

In contrast, for preverbal positions where /ʒ/ was expected, different patterns emerged over time. In Adrien's case, the first unexpected realization of /ʒ/ was [d], followed by the [j] realization. These realizations are different from the lexical words at the same age, where /ʒ/ is realized by a close consonant nearly 50% of the time. During a second phase, starting at age 4;0 for Adrien, consonant realizations followed the same pattern in preverbal fillers and in lexemes, with a coronal fricative being produced in both cases. Madeleine exhibited a different developing pattern of unexpected realizations, beginning with a substantial proportion of the sonorants [l] and [n], which share few phonological features with /ʒ/, before

evolving to a majority of coronal fricatives from the age of 2;1. Both children began by non-approximations of target consonants and then used coronal fricatives.

These results suggest that, at least at an early phase, the consonants found in CV fillers are not approximations of the target consonants /l/ and /ʒ/. In prenominal positions where *le* or *la* (*'the'*) was expected, the consonants consisted mostly of [t, d], which are phonologically far from /l/, and in preverbal positions where *je*, and maybe *tu* (*'you'*) was expected, [j, d, l, n] were produced the most.

3.1.3 *Discussion and tentative conclusion*

We discuss these results in the light of the questions asked in Section 3.1. For the first question, we can say that the non-adult realizations were not phonologically close to the expected consonant in prelexical slots, invalidating the performance view. Moreover, although /l/ was realized accurately in all lexemes at 2;4 for Adrien and at 1;6 for Madeleine, it was not realized in expected prenominal forms. The same holds true for /ʒ/: Madeleine's [ʒ] realizations, for example, are a minor part of her preverbal forms, even though she had acquired /ʒ/ several months earlier in lexemes. These results rule out the performance hypothesis: if grammatical morphemes are not realized in an adult fashion, it is not due to a production limitation. Moreover, these results question the concept of phonological approximation of filler syllables: if children are able to produce accurate target consonants in lexemes, then why are target consonants still approximated in prelexical forms? This phonological approximation suggests that prelexical forms are not fully stable, or not fully specified phonologically, and thus are still transitory forms. The possible influence of prosodically weak positions on the phonological form of prelexical forms remains to be investigated in further studies.

Our second question asked whether the realization of fillers would depend on the subsequent lexeme, as prosodic approaches suggest. In this view, fillers are an extension of the next lexeme, because they are part of the same prosodic unit. This tight relation should be visible via consonant harmony. However, CH represented a small proportion of the prelexical forms, and most of the consonants in filler syllables had variable realizations. This variability cannot be explained in terms of the form of the specific targeted morpheme, nor in terms of the segmental content of the next lexeme.

Finally, a particular set of consonants occurred frequently in the early prelexical fillers. These consonants, namely [t, d, j, n], share a coronal place of articulation, which is considered to be the phonologically unmarked place of articulation (Avery & Rice, 1989; Paradis & Prunet, 1991), especially in French (Yamaguchi, 2012). As for manner of articulation, we found two stops, which are

the unmarked counterparts of obstruents, and [j] and [n], which are unmarked compared to the other sonorant /l/. We suggest that these unmarked consonants are phonologically underspecified, in accordance with the developmental view. While our study focused on consonants, it should be noted that earlier studies on vowels confirmed the developmental perspective for fillers. For instance, in Veneziano's (2003) study, at an early phase fillers consisted of the vowels /a, e, ə/, which are unmarked as well (Jakobson, 1941). In the developmental view, the transitional status of filler syllables may be reflected as an underspecified consonant and vowel realization: they are not realized in the same way as are phonological segments in lexical sounds, but they are not fully specified phonologically either.

3.2 Are fillers lexically specific?

Fillers were realized with a specific set of consonants, which cannot be explained by a phonological deficit or by the subsequent lexeme's initial consonant. However, fillers could still be interpreted as lexically specific. One might consider, following usage-based studies (Pine, Freudenthal, Krajewski, & Gobet, 2013; Pine & Lieven 1997, for determiners), that in the first phases of development, children do not possess adult-like syntactic categories, and prenominal and preverbal forms are not productively combined with lexical items but belong to various construction frames. Therefore, forms in the prelexical position can be expected to be systematically associated to specific lexical types. This would still be consistent with the lexical and prosodic hypotheses.

Since each session included in our corpus did not necessarily involve the same lexical types (lemmas), we wondered whether the irregular results observed in Section 2.3 could be explained by a formulaic association between fillers (or target forms) and lexical items.

3.2.1 *Coding*

In order to investigate this issue, we used the cross-sectional corpus and the longitudinal A corpus described in Table 1 and we considered three possible types of occurrence[18] for each lexical item used in the same session. In the **single occurrence** case, the lexical item occurred only once in the session. In the **same grouping** case, the lexical item was associated with one or more forms belonging to the same group, i.e. adult forms (determiners for nouns or clitic pronouns for verbs),

18. This is not a classical overlap analysis like the ones conducted by Pine and Lieven (1997). Cases classified under *same grouping* can still be overlapping.

no-forms, or fillers. Example 14 shows a verb associated only with fillers throughout the session.

(14) Adrien, 2;11, MLU 2.45

Fat	non non non casse pas	'no no no don't break Adrien
	Adrien on va les	we're going to put them inside,
	remettre dedans, non !	don't !'
Adr	[***t****i*kaɕ] [***e***kaɕ] [***e***kas ***e***kas]	
	'F casse F casse F casse	'F break F break F break
	F casse'	F break'

In the **fluctuation** case, the lemma was associated with at least two different categories of prenominal or preverbal forms, such as a no-form and a filler, or an adult form and a filler, etc. Example 15 illustrates a case of fluctuation between three categories.

(15) Alice2, 2;3, MLU 2.44

Alice and her mother are building a castle

Ace28	[mwa / fɛʁ ʃato // is / isi]	
	'moi / faire château // {X} / ici'	'me / make castle / {X} / here'
(…)		
Ace30	[mwa ɔsi mwa sisi fɛ ɛ̃ʃato]	
	'moi aussi moi aussi/celui-ci	'me too me too/this one
	fais un château'	make a castle'
(…)		
Ace32	[vwala / mɔʃenonono {xx} /	
	wej // mwa ʒvœ kujyʁ ɛʃato	
	la /// vala / jek tu se fini / sə	
	ʃato]	
	'voilà / {XX XXXX XX} /	'there / {{XX XXXX
	{XX} // moi je veux	XX} / {XX} // I want
	co(nstr)uire F château là	to build F castle there
	/// voilà / {XX}	/// there / {XX} all it's done /
	tout c'est fini / ***ce*** château'	this castle'

3.2.2 *Results*

Table 7 presents the distribution in percentages of the noun and verb lemmas according to the degree of variation of forms in the prelexical position. In the table, "total %" indicates the percentage of each type of occurrence for the total number of occurrences of all sessions. For each type of occurrence the minimum and maximum percentages indicate the range of values when calculating the distribution of lemmas in each session.

Table 7. Distribution (in percentage) of the noun and verb lemmas according to the types of occurrences in the prelexical position (total for all sessions, and maximum and minimum values)

	Single occurrence			Same grouping			Fluctuation			N
	Total %	Range of %		Total %	Range of %		Total %	Range of %		
		Min	Max		Min	Max		Min	Max	
Noun lemmas	50.5	20.0	83.3	22.8	0.0	66.7	26.6	0.0	60.0	1292
Verb lemmas	46.1	0.0	80.0	21.3	0.0	100.0	32.6	0.0	75.0	848

The results are quite similar for nouns and verbs. If we exclude the fact that between 46% and 50% of the lemmas occurred only once per session,[19] Table 7 shows that when proto-verbs or proto-nouns occurred more than once in a session, the children did not necessarily use them with the same category of prelexical forms. There was no significant difference between the same grouping and fluctuation cases.

For both nouns and verbs, fluctuation was mildly negatively correlated to the frequency of adult forms (ρs: −0.3579, $p = .00538$ for nouns, and ρs:−0.3639, $p = .0046$ for verbs). Even though the correlation was not very strong, this confirms a developmental trend: the more children use target forms, the more stabilized their use of prenominal and preverbal forms.

Another question must be answered here: Were fillers involved more often when a lemma was used with different prenominal forms (fluctuation) than when it was used with the same kind of form (same grouping)? In Table 8 we present, for the prenominal and preverbal positions, the lemmas presenting fluctuation and the lemmas occurring with the same kind of prelexical form, either a target form, a no-form, or a filler (same grouping). This last group of lemmas was divided into two groups: cases involving fillers and cases involving forms other than fillers, either adult forms or no-forms (no fillers).

Table 8 shows that fluctuation involved a high percentage of fillers. In contrast, the absence of fluctuation mostly involved target forms and a few no-forms. The absence of fluctuation was generally associated with systematic uses of adult forms (which could be different target forms, insofar as the absence of fluctuation does not correspond to the absence of overlap) whereas the presence of fillers clearly pointed to a transitional process during which the children tried combining different forms with the lexical items. At the same time, the fact that

19. Salazar Orvig et al. (2013) showed that most nouns are used only once in a session. In accordance with discursive continuity, children use other devices to refer to the same entities in subsequent utterances.

Table 8. Distribution (in percentage) of noun and verb lemmas associated (or not) to fillers, according to whether or not fluctuation was present in the prenominal and preverbal positions

	Fluctuation			Same grouping				N
	Including fillers %	Not including fillers %	Total F luctuation %	Fillers %	Adult forms %	No-forms %	Total Same grouping %	
Noun lemmas	70.93	29.07	53.83	22.71	51.8	25.42	46.17	639
Verb lemmas	62.68	37.32	60.39	22.10	45.30	32.60	39.61	457

the same grouping case was not the dominant case and that fillers were mainly involved in fluctuation further suggests that they are not lexically specific. Other factors seem to be just as likely to affect the way prelexical positions are filled by children.

3.3 Tentative conclusion

The results presented in this section paint a rather complex picture of the emergence of grammatical referring expressions in the prenominal and preverbal positions. The results reported in Section 2 exhibited considerable heterogeneity in the proportions of fillers (both with respect to no-forms and with respect to adult forms) that were not correlated with the children's linguistic development. One possible explanation could lie in individual styles (Peters & Menn, 1993). However, this factor alone cannot account for the fact that the evolution from null forms to adult forms followed an irregular curve. Note that the results of this section showed that fillers were more often than not associated with fluctuation. Not only were they not lexically specific but their presence cannot be fully explained by formal factors (lexical items or syllabic structures). Moreover, the children's non-adult realization of filler syllables was neither due to a phonological deficit nor to consonant harmony with the following lexeme. In fact, the analysis of the consonants in fillers showed that their realization was different from that of consonants in lexemes, and that their underspecification suggests a transitional status.[20]

20. In order to have a more complete picture of these uses, it would be necessary to compare the distributional properties of fillers with those of determiners and pronouns in the input. Even though, in Chapter 7, Marcos, Salazar Orvig, da Silva-Genest, & Heurdier (2021) partially address this issue, a specific study should be devoted to it.

4. Functional dimensions of filler syllables

A final question needs to be addressed: If fillers are a transitional phenomenon, do they have functional properties? Can referential features explain fluctuation? In this section, we explore a first aspect of possible functional/pragmatic values.[21] Are fillers preferentially used in certain referential contexts? This question has already been discussed for the prenominal position. For instance, the study by Salazar Orvig et al. (2013) on the acquisition of definite and indefinite determiners showed that when indefinite determiners are not yet fully acquired, children tend to produce more fillers or omissions than definite determiners in contexts where indefinites would be expected (particularly in non-referential contexts). By analyzing distributional and functional factors together, Le Mené (2017) and Le Mené and Yamaguchi (2017) also found that fillers and omissions were more frequent in non-referential contexts than in referential ones and, simultaneously, that the first adult forms were more frequent in referential contexts. More specifically, the authors showed that definite determiners and fillers containing consonants appeared more often than indefinite determiners and fillers containing vowels for referential and particular discourse objects. These initial contrasted uses suggest that referential features may influence not only the choice of adult morphemes but also the way children make use of transitional forms such as filler syllables. In the current study, we tried to answer the same question by focusing this time on the preverbal position. If fillers are precursors of grammatical units, as we suggest, fillers in the preverbal position could be precursors of personal subject pronouns and as such, may vary according to the topic of the utterance.

This new analysis was conducted on the cross-sectional corpus and the longitudinal A corpus of 60 sessions presented in Tables 1 and 2. Considering that in adult language, the topic of the utterance has a high probability of being the subject and thus to be in preverbal position, we identified the topic (discourse participants such as speaker or addressee, or discourse entities) of the utterances. However, we were faced with a methodological problem, since, as emerging devices, fillers are indeterminate with respect to the type of target pronoun. In order to identify the topic of the utterance, we relied on cues other than the form of the preverbal unit. Three main criteria were thus taken into account, as illustrated below with reference to the self: children's actions or gestures in context, as in Example 16, previous mention of the referent, as in Example 17 and parents' reactions to the child's utterances, as in Example 18.

21. In Chapter 3, da Silva-Genest et al. (2021) look more thoroughly at the attentional and discursive status of the entities referred to when fillers are used.

(16) Madeleine, 1;10, MLU 2.1
Madeleine is standing up with a coffee cup from her tea set in her hands.

Mad	[ipɔt]	
	'F porte'	'F carry'

(17) Madeleine, 1;10, MLU 2.1
Madeleine is showing her tiger headband to the observer.

Obs	tu mets ***tes oreilles*** ?	'will you put your ears on?'
Mad	[jə me ***lezozɛj***]	
	'F mets les oreilles'	'F put the ears on'

(18) Madeleine, 1;10, MLU 2.1
Madeleine starts climbing the stairs.

Mad	[əʒɛʒe le løo]	
	'F chercher l'est là/haut'	'F go get, it's upstairs'
Mad	[ɚʒɛʒe]	
	'F che(r)cher'	'F go get'
Obs	tu vas ***le*** chercher ?	'are you going to go get it?'

Following Benveniste (1966), we distinguished four categories of referents: SELF, ADDRESSEE, WE (self and addressee), and DISCOURSE ENTITIES. In some cases, the preverbal form of the utterance was categorized as non-referential. In other cases, we could not identify a specific referent or determine whether or not the use was referential. The latter cases were excluded from this new analysis, which explains the differences between the counts in Section 2 and the present section.

Figure 6 illustrates the percentages of the different types of forms observed in preverbal position (no-form, amalgam, filler, clitic pronoun which corresponds to target form in other sections, and other adult forms), for each of the four categories identified.

Figure 6 shows that the percentages of the different forms varied across the types of referent. In reference to the self, the children mainly used fillers (40%) or no-forms (32%). In reference to both the self and the addressee, although fillers and no-forms were also frequent (26% each), clitic pronouns represented 47% of the occurrences. In all other cases (reference to the addressee, discourse entities, or non-referential cases), clitic pronouns represented 54%–55% of the occurrences, and the percentages of the other forms varied between 7% and 16%.

Most utterances focused on the self or on entities. References to the self and references to entities exhibit a contrasted distribution of forms. For instance, clitic pronouns were significantly less frequent in self-references (14%) than in entities-references (54%) (Kruskal Wallis test: $X^2 = 31.18$, $p < .001$). Fillers and no-forms were significantly more frequent when they referred to the self (40% and 32% respectively), than when they referred to a discourse entity (16% and 8% respectively; Kruskal-Wallis for fillers, $X^2 = 8.31$, $p = .004$; Kruskal-Wallis for no-forms, $X^2 = 22.69$, $p < .001$).

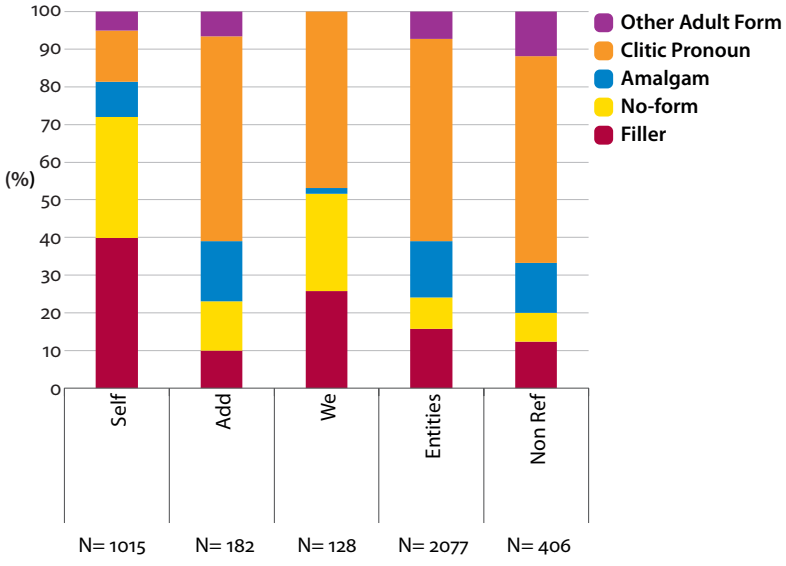

Figure 6. Distribution (in percentage) of the different types of forms in preverbal position, by type of referent

In order to confirm these results, generalized mixed models for these three categories were run, considering MLU and reference to entities and self as fixed factors, and children and sessions as random factors. The model with the best fit for each preverbal form was obtained by comparing models using likelihood ratio tests, fixed factors were excluded by backwards elimination of non-significant effects.

The three best-fitting models presented in Table 9 confirmed that the type of referent was a relevant factor that accounted for the contrasted use of fillers, clitic pronouns, and no-forms.

The distribution of fillers was thus referent-dependent and may precede the use of different personal pronouns. One can wonder, however, if fillers were used with verbs that were used specifically for the referent SELF. In fact, although we showed in Section 3.2 that fillers occurred with verbs that could also be used with other categories of prelexical forms, the lemmas themselves could be "referent-dependent" (see Budwig & Wiley, 1995).

The next qualitative analysis thus dealt with verbs that were produced, during the same session, both in utterances where the topic was the child herself and in utterances where the topic was an entity. This enabled us to single out the functional referential factor as potentially explaining the differences observed in Figure 6. This selection narrowed the analysis down to 14 children, 25 observations, and 658 verbal utterances, which, combined with variation among the children, did not allow us to perform statistical analyses.

Table 9. Regression tables for clitic pronouns, fillers and no-form in pre-verbal position

Fixed effects	Est*.	S.E.	Z	*p*	Random effects	Var.	S.D.	*C*-value**
Clitic pronouns								0.821
Intercept	−3.1232	0.6635	−4.707	< .001	Session	0.3497	0.5913	
Self	−2.0287	0.1127	−17.998	< .001	Child	0.8679	0.9316	
MLU	1.6012	0.2666	6.006	< .001				
Fillers								0.788
Intercept	−1.3748	0.6234	−2.205	.0274	Session	0.3230	0.5683	
Self	1.2546	0.0929	13.505	< .001	Child	0.6769	0.8228	
MLU	−0.5486	0.2527	−2.171	.0300				
No-form								0.766
Intercept	−0.3812	0.5349	−0.713	.476	Session	0.2741	0.5235	
Entities	−0.4936	0.1430	−3.452	< .001	Child	0.1392	0.3731	
Self	1.1355	0.1389	8.173	< .001				
MLU	−0.6836	0.2159	−3.167	< .001				

* Est.: Estimate; S.E.: Standard Error; Var.: Variance; S.D.: Standard Deviation.
Number of observations: 3803, Grouping factors: Sessions: 59, Children: 23

** The models were assessed using C statistics, which indicates whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong.

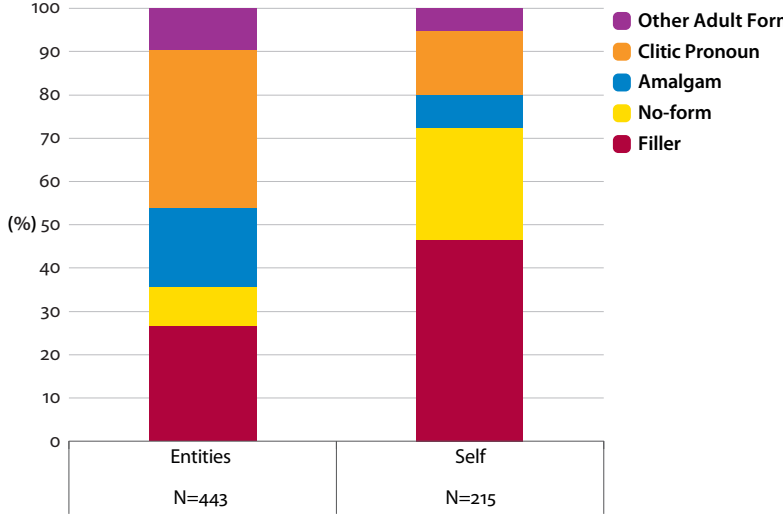

Figure 7. Distribution (in percentage) of the different types of forms in the preverbal position, by type of referent, for verbs produced both in utterances referring to the self and in ones referring to entities in the same session

Figure 7 illustrates the percentages of the different forms observed in the preverbal position when the child referred to her/himself or to entities with the same verb within a given session. In reference to the self, for verbal lexemes that were also used in reference to entities in the same session, fillers represented 47% of the forms produced in the preverbal position. In reference to entities, fillers represented 27% of the forms produced in the preverbal position. The same discrepancy showed up when we compared the cases where a no-form was observed: the percentage of cases where the referent was not verbalized was greater in reference to the self (26%) than in reference to entities (9%). However, the opposite pattern was observed for the production of clitic pronouns and other adult forms: when the children referred to entities, they produced more of these forms than when they referred to themselves. Examples 19 to 22 illustrate the case of two children who, within the same session, used the same verb in reference to an entity with a clitic pronoun, and in reference to the self with a filler.

(19) Madeleine, 2;1, MLU 2.8
Madeleine is trying to put the observer's coat on an armchair.

Mad	[***i*** tɔ̃b]	
	'i(l) tombe'	'it's falling

(20) Madeleine, 2;1, MLU 2.8
Madeleine is telling the observer about her recent fall down the stairs.

Mad	[***le*** tɔ̃be dɔ̃ lekalje]	
	'F ai/est tombée dans l'escalier'	'F fell down the stairs'

(21) Anaé, 2;3, MLU 3.05
Anaé is reading a story about Little Brown Bear with her mother.

Ana	[usəbœ̃ ***i*** vø pa sa pupe]	
	'Ours / Brun i(l) veut pas sa poupée	'Brown / Bear doesn't want his doll'

(22) Anaé, 2;3, MLU 3.05
Anaé is asking her mother for a cookie.

Ana	[pu ***ɛ*** vø øk sukɛt mamɑ]	
	'yy F veux F chouquette maman'	'F want F cookie Mummy'

Overall, this data shows that the children's use of fillers varied according to the topic of the utterance, which suggests that fillers, at this stage in child development, may already be precursor forms of various different personal pronouns. The large number of filler syllables observed in utterances referring to the self is in fact specific to self-reference. In the children's productions, reference to the self seems

to be underspecified, possibly because the self is a given participant that is highly accessible in the situation (see Hughes & Allen, 2006, and Chapter 3, da Silva-Genest et al., 2021, for analyses of the interaction between reference and givenness when children use fillers).

5. Discussion and conclusion

The aim of this chapter was to examine the status of filler syllables in the development of referring expressions. We hypothesized that, contrary to acquisition studies that have disregarded these forms, fillers are precursors of referring expressions in spite of their non-adult realizations at the observed period. Our examination of filler syllables and their use in children's data provided insight into the properties they share with adult referring expressions.

As our first study showed (Section 2), fillers represented nearly a quarter of all occurrences of obligatory forms in both the prenominal and the preverbal positions. Moreover, every child we studied produced filler syllables, at least in the prenominal position. Filler syllables were produced across all MLU groups studied (1.32–3.37), and in all groups of ages (1;7–3;5) present in our corpora. Their use represented a substantial and pervasive phenomenon in the children's prelexical productions, and their inclusion in the study of children's referring expressions in prelexical positions may reveal unseen developmental phases.

However, filler use was far from homogeneous and regular. The proportion varied considerably among the children. This variability showed up here even within the filler category itself: as Section 2 showed, fillers did not evolve in the same way in the preverbal and prenominal positions for all children, confirming the results of Veneziano's (2003) study.

Section 3 examined the formal (3.1) and distributional (3.2) properties of filler syllables. These studies showed that the variable forms and presence of fillers did not lie in lexical factors, and their absence and variable realizations were not due to a phonological deficit in adult grammatical words. Instead, their variability can be explained in terms of the emergence of a paradigm of diverse forms exhibiting transitional characteristics. In a phonological perspective, we found that fillers lacked the formal properties of adult targets, but they also exhibited paradigmatic patterning: the use of specific consonants in the prelexical position. In a distributional perspective, we noted that fillers were used in combination with other lexical forms.

At the same time, as precursors of grammatical units, the fillers shared some of their functional characteristics. As shown by Veneziano (2003) and confirmed in Section 3, the distribution and presence of fillers over time was different in the

preverbal and prenominal positions. These results suggest that fillers play a role in the construction of the verbal and nominal categories, and thus behave like proto-grammatical words.

Moreover, the variable presence of fillers can be accounted for in terms of functional uses, as highlighted in Section 4. The distribution of various realizations in the preverbal position depended on the topic of the utterance. When in a given session, the same verb was used in utterances where the child and discourse entities were identified as topics of the utterance, there was a larger proportion of filler syllables in reference to the self than in reference to entities.

Children's production of fillers vs. adult forms, or their absence, could provide insight into their diverse functional uses. Our results based on French children's productions are consistent with the experimental work done by Gerken and McIntosh (1993). In comprehension tasks, 2-year-old English-speaking children treated adequate, real grammatical morphemes differently from inadequate, real grammatical morphemes or pseudo-grammatical morphemes in the same position. These results suggest that the children were aware of the different forms used in prelexical positions and treated them differently.

In this chapter, we proposed that fillers are precursors of referential expressions and should be studied as such. The results showed that the paradigm of referring expressions is still unstable and under construction, even at the age of 3;6, which showed up in the functional study but also in the phonological and distributional studies. Note in addition that in the different corpora used here, the youngest child was 1;6 years old, and the lowest MLU was 1.32. It is probable that the children studied had gone through earlier developmental phases where fillers were not produced at all, or were produced differently. Many authors such as Peters and Menn (1993), Kilani-Schoch & Dressler (2000), Veneziano and Sinclair (2000), Peters (2001), and Feldman and Menn (2003), suggest that fillers appear first for prosodic reasons (Demuth, 2001; Demuth & Tremblay, 2008). In a future study extending our analyses to younger children, we could verify whether the use of fillers, during that earlier phase, is also variable and whether this potential variation depends solely on the prosodic constraints of the language and not on different functional uses, as is the case later on.

In this perspective, one issue needs to be further investigated: Why do fillers have different phonological forms? As we have demonstrated, at least the consonants that the fillers contain do not depend on the subsequent lexeme or on phonological deficits. If the use of fillers varies according to their different pragmatic functions, maybe their phonological form varies also according to pragmatic functions.

Finally, the co-existence of filler syllables and adult-like forms or their absence raises several questions about the factors underlying their realization. All these

questions have been partially answered for the prenominal position for French (see Le Mené, 2017) but need to be tackled further.

In conclusion, filler syllables exhibit the formal and functional characteristics of their dual nature as a transitional phase and a paradigm of referring expressions, and should be considered as precursors of grammatical words. For this reason, the study of fillers is important if we hope to understand the process via which referring expressions develop. More generally, the use of filler syllables shows us that during language development, there are transitional phases specific to protomorphemes and to emerging paradigms in which functional factors also intervene. They also show that we should not neglect fillers in our quest for a better understanding of language acquisition.

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CHAPTER 3

Young children's uses of referring expressions

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This chapter investigates the repertoire and the uses of referring expressions in natural dialogues of 28 French-speaking children, aged between 1;7 and 2;6 years old. We focus on three strong forms (nouns, strong demonstrative pronouns and strong personal pronouns) and three weak forms (clitic personal pronouns, null forms and fillers). Their uses are analyzed for the following factors: the linguistic development, the type of referent (participants vs. entities), the syntactic function, and the attentional and discursive status of the referent. The results reveal contrasted uses of referring expressions. Nouns are mainly used for new or reintroduced referents, generally in syntactic functions other than subject, whereas clitic personal pronouns (as well as the other weak forms) are mainly used for given referents and always as subjects. The type of referent (entities vs. participants) also influences the use of referring expressions. The discussion addresses the issue of the intertwining of morphological, syntactic and pragmatic development.

Keywords: referential choice, accessibility, strong forms, weak forms, syntactic function, attentional status, discursive status, entities, self, addressee

1. Introduction

At about the age of two, and jointly with grammatical development, young children acquire the different uses of language. Among other things, their ability to communicate about world objects, actions, and events develops. Their means of expressing reference multiply and diversify, reflecting their sensitivity to discourse-pragmatic factors such as referent accessibility for the addressee (for several reviews, see Serratrice & Allen, 2015). Although some studies have focused on

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the various ways in which children refer to themselves (Budwig, 1995; Caët, 2013; Morgenstern, 2006), only a few have looked simultaneously at the development of how children refer to world entities and to discourse participants. Do the same factors affect the acquisition of these two referential paradigms and do they do so in the same way? The aim of this chapter is to study young French-speaking children's repertoire of referring expressions and their uses, in particular the choice between strong forms and weak forms. We consider the impact and interactions of several factors, including linguistic development, the type of referent (i.e., entities and discourse participants), the syntactic function of the referring expressions used, and the attentional and discursive status of the referent.

1.1 Children's first referring expressions

The repertoire of referring expressions emerges gradually. In French, as in many other languages, the first words produced by children are usually "noun candidates" employed to refer to an entity. Also appearing early are demonstrative pronouns (*this* and *that* in English: Diessel, 2006; Rozendaal & Baker, 2010; *ça* in French: Hamann, Rizzi, & Frauenfelder, 1996). As early as the one-word utterance stage, when children produce predications about a referent, we find null forms and fillers (Veneziano & Clark, 2016).

Most studies on French (Girouard, Ricard, & Gouin Decarie, 1997; Hamann et al., 1996; Jakubowicz & Rigaut, 1997) date the emergence of personal pronouns at about the age of two. Children produce most of the forms by around 30 months. The pace of acquisition varies considerably, probably because of the morphological diversity of French. During a rather extended period, adult-like forms alternate with null forms and fillers (see Chapter 2, Yamaguchi, Salazar Orvig, Le Mené, Caët, & Rialland, 2021).

The status of null forms and fillers are a matter of theoretical debate. In non-null subject languages the former have been seen either as a phenomenon specific to child grammar (Hyams, 1986; Rizzi, 1993/1994), as an indication of children's performance limitations (Bloom, 1990; for French, Jakubowicz & Rigaut, 1997) or as the result of the distributional features of the language heard by the child (Theakston, Lieven, Pine, & Rowland, 2001). Fillers are accounted for in phono-prosodic terms (e.g., Demuth, 2001) and are seen as precursors of grammatical morphemes (Dressler & Kilani-Schoch, 2001; Veneziano & Sinclair, 2000), especially pronouns in preverbal position (see Chapter 2, Yamaguchi et al., 2021). The status of clitic personal pronouns is also under debate. In French, a clitic personal pronoun acting as the grammatical subject cannot be separated from the verb by expressions other than negation (*ne*) or other clitic pronouns (e.g. *le, en*) as in *il mange* (*'he eats'*), *il le mange* (*'he eats it'*), **il aussi mange* (*'*he also eats'*). Some

authors see clitic pronouns as inflectional morphemes (Culbertson & Legendre, 2008), whereas for others they are arguments (De Cat, 2005). Whatever the perspective, clitic personal pronouns can be likened to other weak forms that tend to occur in certain discourse-pragmatic contexts. Since we focus in this research on the pragmatic dimension, the question of whether clitic pronouns are free or inflectional morphemes is less relevant.

In the process of acquiring the pronoun paradigm, children master the different forms and their variations in usage which are dependent on both the type of referent (entities, the speaker, the addressee) and the cognitive status of that referent.

1.1.1 *Factors affecting the use of expressions referring to entities*

The choice of a type of linguistic expression partly depends on discursive and cognitive factors. According to research in this field, regularities in the use of strong versus weak forms rest on a predominant factor, namely, the speaker's representation of the cognitive accessibility of the referent to the addressee (Ariel, 1990; Gundel, Hedberg, & Zacharski, 1993): weak forms (such as null forms or clitic personal pronouns for French; Cornish, 1999) encode referents that are in focus whereas the use of strong forms (lexical forms, emphatic and strong pronouns) generally orients the listener towards referents with other cognitive statuses, whether activated, familiar, or only type identifiable (Gundel et al., 1993), or less accessible (Ariel, 1990). In other frameworks (Chafe, 1976; Givón, 1983), these strong forms also mark discursive discontinuity, or contrast between entities.

Many studies on children's early productions have taken this approach. In a study with English-speaking children based on Gundel et al.'s hierarchical scale of givenness (1993) and the implications it entails, Gundel and Johnson (2013) found evidence of contrasted uses of personal and demonstrative pronouns: the former were used for already-mentioned referents, the latter for activated but not yet mentioned referents.

Moreover, in adult discourse, these uses appear to be tightly linked to syntactic choices, since syntactic structure is not independent of information management, as suggested by Du Bois (2003). This author showed that languages tend to avoid having several new (lexical) elements in the same utterance. Also, subjects of transitive verbs – which generally correspond to given referents – tend to be realized by null or weak forms, whereas new referents are encoded in the object function using lexical forms or strong morphemes. Other studies (Chafe, 1976; Givón, 1983) have shown that the subject function is often the preferred one for the topic (and thus, for given referents).

Based on Du Bois's (2003) work, Clancy (1993) and Allen (2000) proposed an analysis situated at the interface between syntax and pragmatics (see also

Allen, 2006). In these studies, informativeness (a notion later replaced by "accessibility") is seen as the product of a complex set of features such as the referent's newness vs. givenness, the presence of competing referents, animacy, and references to oneself or the addressee, or reference to entities. Studies on various languages have brought out the main characteristics of referents with little or no accessibility, which include newness, contrast, and absence from the immediate context (for Korean: Clancy, 1993; for Inuktitut: Allen, 2000; Skarabela, Allen, & Scott-Phillips, 2013; for Japanese: Guerriero, Oshima-Takane, & Kuriyama, 2006; for Hindi: Narasimhan, Budwig, & Murty, 2005; for English: Guerriero et al., 2006; Hughes & Allen, 2006; for Mandarin: Huang, 2011). Each of these factors affects the choice of referring expressions, and their effects are cumulative. Accordingly, strong forms have a higher probability of occurring in contexts that have two or three of these characteristics and weak forms are more probable otherwise (Allen, 2008; Hughes & Allen, 2015).

Similar results have been obtained in research on young French-speaking children (Salazar Orvig et al., 2004; Salazar Orvig et al., 2010a). Here also, we find a tendency to choose weak forms (clitic personal pronouns, fillers, and null forms) for given referents and strong forms (nouns, demonstrative pronouns) for first mentions. Nouns acting as grammatical subjects that refer to given referents are frequently associated with contrast or opposition, whereas clitic personal pronouns more often occur in a context of adding predications for an already established topic (Salazar Orvig et al., 2010b; Salazar Orvig & Morgenstern, 2015). Demonstrative pronouns (Salazar Orvig & da Silva, 2014) are preferred for activated referents – not mentioned in the discourse but nevertheless included in the activity – and also, like nouns, in contexts of contrast. However, the question of how these factors interact has not been addressed directly for French, which is what we propose here.

1.1.2 *Factors affecting the uses of expressions referring to the discourse participants*

To talk about the participants of the interaction taking place (themselves or/and the addressee), children may alternatively employ different types of referring expressions. In most studies on self-reference, the use of different self-referring expressions has generally been explained in terms of pragmatic factors (Budwig, 1995; Budwig & Wiley, 1995; Caët, 2013; Morgenstern, 2006; Nelson, 1989). Null forms, fillers, and *I* are often found when children refer to their internal states or desires. Children may also use different first-person pronouns for the subject function (*I, me*, or *my*), in accordance with the type of agency they are expressing (depending, controlling, or contrastive), and they may use their name when expressing opposition with other referents or when telling stories. Studies on references to the addressee in English are scarce, probably because the morphology

of second-person pronouns varies less than first-person pronouns, null forms in assertions can be difficult to distinguish from imperatives, and fillers are rare (see Caët, 2013; for French, Chapter 2, Yamaguchi et al., 2021). Budwig and Wiley (1995) and Imbens-Bailey and Pan (1998) found that children use null forms and *you* to make requests or proposals. Caët (2013) observed that *Mommy/Daddy* could be employed by children to express opposition with other referents, as they do when referring to themselves but could also be produced in contexts where the interlocutor's parental status was at play. Not all studies have found the same pragmatic functions associated to the same forms, perhaps due to differences in the method used to collect data, or to interindividual variability.

1.2 The aim of this study

In order to gain further insight into the factors that affect children's use of referring expressions in French, we took a broad range of factors into account and analyzed the way in which they interact. We contrasted three weak forms[1] (clitic personal pronouns, which are in the process of being acquired, null forms, and fillers) and three strong forms (nouns, strong demonstrative pronouns, and strong personal pronouns). Naturally, an important factor is the existence of the various lexical and grammatical forms in the child's repertoire, which depends on his/her developmental level. In addition to this aspect, the following factors enter into play in the here-and-now of the dialogue: the type of referent (entities or participants), the syntactic function, and the referent's attentional and discursive status (givenness) in the dialogue.

In considering these different factors, we focused on three main aspects: the types of referring expressions produced and their referential and discursive context of production, the way in which the factors described above interact in promoting the use of one of the possible forms, and the links between the grammatical and pragmatic levels in the development of referring expressions in young children.

2. Method

After briefly presenting the study participants and the data collected (see 2.1), we describe our method of analysis (see 2.2).

1. Other forms, such as dislocations and the clitic demonstrative pronouns in the construction *c'est+X* (*'it's+X'*), are treated respectively in Chapter 6 (Klein, Jullien & Fox, 2021), in Chapter 9 (de Weck, Hassan, Heurdier, Klein, & Salagnac, 2021), and in Chapter 10 (Vinel, Salazar Orvig, de Weck, Nashawati, & Rahmati, 2021).

2.1 Participants and data collection

The participants were 28 children between the ages of 1;7 and 2;6.[2] Some children were videotaped twice at the same age (2;3); five children were videotaped several times at different ages. This made for a total of 60 filmed sessions. The children were observed during family interactions. The utterances of all participants were transcribed. The contextual information needed to interpret the verbal productions was also noted.

Given that the age period (around the age of 2 years) is strongly marked by interindividual variability, we used mean length of utterance (MLU) rather than age as a measure of development. Three MLU groups were set up. The data for each group are presented in Table 1.

Table 1. Participants, by MLU group, age and number of sessions

MLU group	MLU range	No. of children	No. of sessions	Age range
MLU 1	1.3–1.92	12	20	1;7–2;3
MLU 2	2.04–2.5	9	18	1;10–2;4
MLU 3	2.52–2.96	12	22	1;10–2;6

2.2 Coding system

We sorted the referring expressions by grammatical category and then analyzed the occurrences in terms of the following factors: MLU, syntactic function, type of referent, and attentional and discursive status. Due to lack of space, this chapter does not include reference to second order entities or expressions employed in a non-referential fashion (naming, expletive and vocative uses, etc.). Section 2.2.1 presents the types of referring expressions. Section 2.2.2 describes the statistical analyses and the method used to assess intercoder agreement. The categories retained for analyzing the five factors are presented separately in Section 3.

2.2.1 *Types of referring expressions*

The referring expressions used were classified according to their grammatical category in adult language.

2. The data were drawn from several corpora compiled in previous studies: Anaé and Madeleine, from the Paris Corpus; the Childcare Corpus; the Standardized play corpus; the Nashawati corpus; the Salazar Orvig corpus; the Yamaguchi corpus. See Appendix I for further details.

Strong linguistic expressions

- **Nouns** (common, proper, and adjectival) such as *la peau* in *[mwa ʒvø la **po**]* (‘*moi j(e) veux la **peau**’, ‘me, I want the **peel**’*).
- **Strong demonstrative pronouns** such as *ça* (‘*this*’ or ‘*that*’), *celui-ci* (‘*this one*’), etc., as in *[**sa** pik] (‘**ça** pique’, ‘**that's** scratchy’*).
- **Strong personal pronouns** as in *[**mwa** fe ʃato]* (‘***moi** fais château’, ‘**me** make castle’*).

Weak linguistic expressions

- **Clitic personal pronouns**, as in *[ɛ**l** ɛ dədã] (‘**elle** est dedans’, ‘**she**'s inside’)*.
- **Preverbal fillers**, as in *[ema?]* (‘*F*[3] *mange?’, ‘F eats*’).
- **Null forms**, as in *[va pa oli]* (‘*va pas au lit’, ‘doesn't go to bed*’).

We also counted all other forms and grouped them under the heading **All Other Forms**. These included dislocations, clitic demonstrative pronouns, and relative, indefinite, numeral, adverbial, possessive, and interrogative pronouns.

2.2.2 *Intercoder agreement and statistics*

Coding was done using a coding guide. After the coding of each dialogue by one of the coders, a different coder recoded 10% of each dialogue independently. The intercoder agreement rates were as follows: linguistic-unit category: 95.81% (Cohen's kappa $k = 0.95$), syntactic function: 91.72% (Cohen's kappa $k = 0.888$), referent type: 94.52% (Cohen's kappa $k = 0.914$), attentional and discursive status of referring expressions: 86.97% (Cohen's kappa $k = 0.796$).

Several techniques were used to analyze the data. First, we studied the distribution of referring expressions for the various factors by means of visual inspection of each table. Then, the potential influence of five fixed-effect factors (i.e., MLU group, syntactic function, type of referent, and attentional and discursive status) on the use of the six linguistic units selected was explored with mixed-effect binomial regressions (using the glmer function of the lme4 R package; Bates, Mächler, Bolker, & Walker, 2015), including two random-effect variables to control for the participant (the child) and the session. Mixed models were chosen because the number of sessions per child varied, and mixed models are able to handle missing data and repeated mesures. Partition trees (Hothorn & Zeileis, 2015) were drawn with the ctree function included in the "party" R package to further explore interactions between the factors.

3. In the interpretations and translations of children's utterances, 'F' stands for a filler syllable.

3. Factors affecting the use of referring expressions

First, we look at the distribution of forms from the developmental standpoint. The question raised is whether, between the beginning and end of the period under consideration, we will find a linear progression in the children's appropriation of referring expressions (see 3.1). Then, we consider the frequency of the different referring expressions, according to the factors considered: syntactic function (see 3.2), type of referent (see 3.3), and attentional and discursive status (see 3.4). In Section 3.5, we present an analysis of the interactions between the factors and a qualitative analysis of some uses of expressions for referring to entities and participants.

3.1 Impact of linguistic development on the use of referring expressions

Table 2 presents the distribution of linguistic units for the whole corpus (all groups pooled) and for each MLU group taken separately. Overall, the percentage of nouns was much higher than the percentages of the other forms. Null forms were the second most frequent type of expression in our corpus.

Table 2. Distribution (in percentage) of the referring expressions for each MLU group

	MLU1 %	MLU2 %	MLU3 %	Overall %	N=
Nouns	40.38	36.87	29.62	34.70	1602
SDem*	10.43	8.08	4.58	7.19	332
SPP	3.42	4.86	3.18	3.81	176
CPP	7.28	7.39	16.87	11.31	522
Fil	8.63	6.12	6.77	7.00	323
NF	15.92	14.90	12.18	14.01	647
All Other Forms	13.94	21.78	26.61	21.98	1015
N=	1112	1584	1921	4617	4617

* SDem: Strong demonstrative pronouns, SPP: Strong third-person pronouns, CPP: Clitic third-person pronouns, Fil: Fillers, NF: Null Forms

The percentage of nouns and strong demonstrative pronouns decreased with MLU. Conversely, in MLU Group 3 the frequency of clitic personal pronouns increased. For strong personal pronouns there was no clear difference between the MLU groups. This lack of variation also existed for null forms and fillers, which could be expected to decrease with MLU.[4]

4. Table 2 also shows that the percentage of "all other forms" rises to almost 22% of the referring expressions. As indicated in Section 2.2.1, this grouping lumps together a set of referring expressions (dislocations, clitic demonstrative pronouns, and relative, indefinite, numeral, adverbial, possessive, and interrogative pronouns) that are heterogenous both in their formal

3.2 Impact of syntactic function on the use of referring expressions

As noted in the introduction, past research has shown that syntactic function affects the choice of a referential term. This section is devoted to verifying this relation for each of the six types of referring expressions. In the analyses, we made the distinction between the following syntactic functions.

- **Subjects.** Grammatical subjects, as in *[ʒvø pasɔ] ('**j(e)** veux poisson' '**I** want fish'*).
- **Complements.** Arguments other than subjects. These included direct and indirect objects – as in *[ʒəvwa loli]* ('*je vois **Loli**', 'I see **Loli**'*), complements in presentative constructions – as in *[sa se amwa]* ('*ça c'est à **moi**', 'that, it's **mine**'*), circumstantial complements, and noun determiners.
- **Expressions in verbless utterances.** Pre-syntactic utterances and noun phrases in answers to the interlocutor's questions, as in *[ɛ̃bebe] ('un bébé', 'a baby'*) in reply to the mother's question *Y avait quoi dedans? 'What was in there?'*.
- **Uncertain**. In some cases, the syntactic function could not be determined because the context of the referring expression was itself uninterpretable.

For null forms and fillers, the function was retrieved on the basis of linguistic as well as contextual clues such as the ongoing activity and the adult's discourse. In Example 1, the referent's function in Olg151 was determined by identifying the actors, the object being handled, and the form of the mother's utterance (Mot152).

(1) Olga, 2;3, MLU 2.65[5]

Mot152	celui-là / attends celui-là on va se le mettre là-dedans	'that one / wait that one let's put it in there'
Olg151	[mɛtlada] 'met(tre) là (de)dans'	'put in there'

and functional aspects. In all of the tables in the chapter, their total percentage is noted only to show the relative importance of the six types of referring expressions under focus in this chapter.

5. Example captions indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. The first three letters of the child's first name are given (e.g. Cle for Clément), Mot stands for mother, Fat for father and Obs for observer. When the children's utterances are transcribed phonetically (between square brackets [ ]), the interpretation in French is given below in inverted commas. An approximate English translation is also given between inverted commas. Braces indicate uncertain transcriptions or alternative interpretations. {X} stands for uninterpretable or inaudible segments. In the interpretations and translations, 'F' stands for a filler syllable. '/' stands for a pause. For more details on transcription conventions, see Appendix II.

Table 3 gives the distribution of linguistic expressions for each syntactic function.

Table 3. Distribution (in percentage) of referring expressions for each syntactic function

	Subject %	Complements %	Verbless %	Unct %	N=
Nouns	4.83	42.15	73.52	70.33	1602
SDem*	2.17	4.86	18.66	6.59	332
SPP	2.37	5.50	4.43	4.40	176
CPP	22.04	5.82	0.00	1.10	522
Fil	14.94	1.20	0.00	2.75	323
NF	17.41	21.91	0.09	9.89	647
All Other Forms	36.24	18.57	3.30	4.95	1015
N=	2028	1255	1152	182	4617

* SDem: Strong demonstrative pronouns, SPP: Strong third-person pronouns, CPP: Clitic third-person pronouns, Fil: Fillers, NF: Null Forms

Table 3 points out a tendency for different types of expressions to appear in a preferred syntactic function. Subjects were realized mostly by weak forms (clitic personal pronouns, fillers, and null forms), whereas nouns were rare for the subject function. Complements were realized mainly by nouns, and nouns were the preferred form in verbless utterances.

3.3 Type of referent

We considered two main types of referents.

- **References to entities**. These included references to elements of the objective world, called first-order entities by Lyons, who stated, "First-order entities are such that they may be referred to, and properties may be ascribed to them" (Lyons, 1977: 443). An example is *dame* (*'lady'*) in *[pati ladam] ('pa(r)tie la dame', 'gone the lady')*.
- **References to participants**. Participants were defined by their role in the interlocution and not as entities in the world (Benveniste, 1966). Among the references to participants, we distinguished referring to the speaker (SELF), referring to the addressee (ADD), and referring to both the speaker and the addressee (WE).[6]

6. "WE" is used in this chapter as the label for the category of reference to self and the addressee together.

Do these two types of referents involve different uses of referring expressions?

Table 4. Distribution (in percentage) of referring expressions for each type of referent

	Entities	Participants			
	%	SELF %	ADD %	WE %	All participants %
Nouns	41.09	6.39	30.38	0.00	9.93
SDem*	9.05	0.00	0.00	0.00	0.00
SPP	0.16	20.97	12.03	0.00	17.95
CPP	8.80	13.75	36.08	62.32	21.01
Fil	5.29	15.97	3.16	13.04	13.62
NF	10.98	29.44	10.76	21.74	25.77
All Other Forms	24.63	13.48	7.59	2.90	11.72
N=	3670	720	158	69	947

* SDem: Strong demonstrative pronouns, SPP: Strong third-person pronouns, CPP: Clitic third-person pronouns, Fil: Fillers, NF: Null Forms

Generally speaking, there were many more references to entities than to participants. For referring to entities, nouns were more frequent than weak forms. For referring to participants, the distribution of null forms, clitic personal pronouns, fillers, and strong personal pronouns was more homogeneous. Demonstrative pronouns were never used. In addition, we found variations that depended on whether the children were referring to themselves (SELF), their addressee (ADD), or both (WE). For self-references, the most prevalent expressions were null forms, strong pronouns, and fillers, whereas for referring to the addressee, nouns and personal pronouns were used the most. For WE, the children clearly preferred clitic personal pronouns and null forms.

These results indicate contrasting uses of referring expressions – particularly clitic personal pronouns – that were dependent upon the type of referent.

3.4 Attentional and discursive status of the referent

We took into account the participants' joint attention to the referent and its previous mention in the dialogue. We considered four categories: new, activated, discourse-given, and reintroduced.[7]

7. Our definitions of the categories for the attentional and discursive status of the referent do not necessarily correspond to those used in other studies (Chafe, 1976; Gundel et al., 1993).

– **New**. The expression introduces a new referent under the addressee's focus of attention.

(2) Daniel, 2;3, MLU 2.5
Daniel is trying to get a car into a toy house. There is an obstacle.

Dan201	[***abonum***] ((il sort un bonhomme de la maison))	((he gets a man out of the house))
	'***F bonhomme***'	'***F man***'
Obs61	ah! il y a un gros bonhomme là.	'oh! there's a big man there.'

– **Activated**. The referring expression is the first mention of a referent already under the attention of the interlocutors.

(3) Loli, 2;3, MLU 2.94
Loli is eating a banana. The referent 'peau de la banane' ('banana peel') has not yet been mentioned and is under the joint attention of the two speakers.

Lol3	[mwaʒəvø***lapo***]	'me, I want ***the peel***'
	'moi je veux ***la peau***'	'me, I want ***the peel***'
Mot3	ça c'est la peau oui.	'that, it's the peel yes.'

– **Discourse-given**.[8] The referent has already been mentioned by the child or his/her interlocutor within the same thematic sequence.

(4) Arnaud, 2;3, MLU 2.96
The observer has just left the room after positioning the camera.

Arn6	[{uwe} / klɛmaʁi: ʔ]	
	'où {elle est/ est} / Claire-Marie?'	'where is / Claire-Marie?'
Mot7	ben je sais pas.	'uh I don't know'
Mot8	alors	'so'
Arn7	[ɔ̃va owalɔ̃ ***klɛʁmai:***]	'*F* {goes/go} into the living
	'*F* va au salon ***Claire-Marie***'	room ***Claire-Marie***

Here, in Arn7 the child mentions "Claire-Marie" for the second time (see Arn6).

– **Reintroduced**. The child reintroduces a referent that had been mentioned in a previous thematic sequence, with a focus on other topics in-between, as in Example 5 (Arn20).

8. We will also refer to this category as "given".

(5) Arnaud, 2;3, MLU 2.96
This sequence came after Example 4, following a topic change.

Arn20	[wɛ***le klɛʁmari***?]	
	'où ***elle*** est ***Claire-Marie***?'	'where is ***she, Claire-Marie***?'
Mot25	ben je sais pas où elle est passée/ elle va revenir	'uh I don't know where she went/ she's going to come back'

This analysis was conducted both for entities and for participants. By definition, participants never had a new status, but they could have any one of the other three statuses. Table 5 gives the distribution of referring expressions according to the referent's attentional and discursive status.

Table 5. Distribution (in percentage) of referring expressions for each attentional and discursive status

	New %	Activated %	Discourse-Given %	Reintroduced %	*N*=
Nouns	53.68	32.72	31.18	47.95	1602
SDem*	8.68	20.58	5.01	7.71	332
SPP	0.26	0.62	4.98	1.45	176
CPP	1.32	5.76	13.73	7.47	522
Fil	2.11	4.53	8.12	5.30	323
NF	3.95	9.67	16.67	6.99	647
All Other Forms	30	26.13	20.32	23.13	1015
N=	380	486	3336	415	4617

* SDem: Strong demonstrative pronouns, SPP: Strong third-person pronouns, CPP: Clitic third-person pronouns, Fil: Fillers, NF: Null Forms

Most of the expressions encoded given referents (which reflects dialogue cohesion). In spite of this predominance, different distributions of referring expressions were found for each status. Table 6 shows that nouns were the most frequent type of expression for referring to new or reintroduced referents. On the other hand, nouns were used proportionately less for given or activated referents. Clitic personal pronouns obtained the opposite pattern: they were mainly associated with given referents and were hardly ever chosen in new contexts. They were not used much in activated and reintroduced contexts either, but were not as rare as when the context was new. Fillers and null forms exhibited the same pattern, and strong demonstrative pronouns were found the most for activated referents.

3.5 Interactions between factors

Interactions between factors were analyzed for the following binomial variables.

- **MLU group.** MLU2 vs. MLU1, and MLU3 vs. MLU1.
- **Type of referent.** Entities vs. Participants:
  Among the participants, we selected the referent for which the expression was the most frequent (see Table 4), that is, addressee (ADD) vs. others for nouns and clitic personal pronouns, and SELF vs. others for null forms and fillers. This factor was not tested for strong demonstrative pronouns because they never referred to participants.
- **Attentional and discursive status.** We tested discourse-given vs. all others and new vs. all others, except for strong demonstrative pronouns, for which activated was the most frequent status.
- **Syntactic function.** We tested subject vs. all other functions. This factor was not tested for fillers, which, by definition, are in preverbal position. In this case, the function overrides the other variables.

The model with the best fit for each referring expression was chosen by backwards elimination of nonsignificant factors. Tables 6 and 7 present the results of the logistic regressions. In order to further assess the interactions between these factors, partition trees (Figures 1 to 6) were constructed with the factors that yielded significant values in the logistic regressions. We considered the type of referent to be a single factor with four variables: SELF, ADD, WE, and entities.

3.5.1 *Nouns*

As Table 6 shows, the use of a noun was affected by four factors. The probability that a child would choose a noun was significantly higher when the referent had a syntactic function other than subject, when it was new to the interaction, when it referred to an entity rather than to a participant, and, if it did refer to a participant, when the participant was the addressee.

Figure 1 shows that syntactic function was the main factor that accounted for the use of nouns, which were infrequent in the subject function. For both subjects and non-subjects, the type of referent was the second factor for nouns: nouns were used more frequently to refer to entities or to the addressee than to the SELF or WE.

For the non-subject functions, we can see that the partition tree lumps together references to entities and references to the addressee, although the former were much more frequent than the latter (see Table 4). In this analysis, the proportion of nouns for new referents (necessarily entities) was significantly greater than the proportion for non-new referents (activated, discourse-given, and reintroduced taken together). However, the number of nouns for non-new referents was far from negligible, in such a way that function and referent type overrode attentional

Table 6. Regression tables for strong referring expressions (nouns, strong demonstrative pronouns, strong personal pronouns)

	Fixed Effects	Est*.	S.E.	z	p	Random Effects	Var.	S.D.	C-Value **
Nouns									0.88
	Intercept	-1.592	0.187	-8.513	<.0001	Session	0.381	0.617	
	Attentional and discursive status (New)***	0.359	0.135	2.665	.0077				
	Type of referent (Entities)	2.105	0.174	12.099	<.0001				
	Syntactic function (Subject)	-3.281	0.117	- 28.072	<.0001				
	Participant (ADD)	2.189	0.286	7.658	<.0001				
Strong Demonstrative Pronouns									0.85
	Intercept	-2.291	0.192	-15.57	<.0001	Session	0.706	0.841	
	Attentional and discursive status (Activated)	1.634	0.150	10.92	<.0001	Child	0.260	0.510	
	Syntactic function (Subject)	-1.721	0.171	-10.09	<.0001				
Strong Personal Pronouns									0.96
	Intercept	-1.3603	0.3277	-4.151	<.0001	Session	1.059	1.029	
	Type of referent (Entities)	-5.069	0.511	-9.930	<.0001				
	Syntactic function (Subject)	-2.448	0.233	-10.532	<.0001				
	Participant (SELF)	1.171	0.308	3.799	0.0001				

* Est.: Estimate; S.E.: Standard Error; Var.: Variance; S.D.: Standard Deviation.
Number of observations: 4617, Grouping factors: Sessions: 60, Children: 28

** The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong.

*** The category in parentheses on fixed-effect rows indicates the category value compared with the intercept (reference level). For binomial factors, the reference level is the other factor.

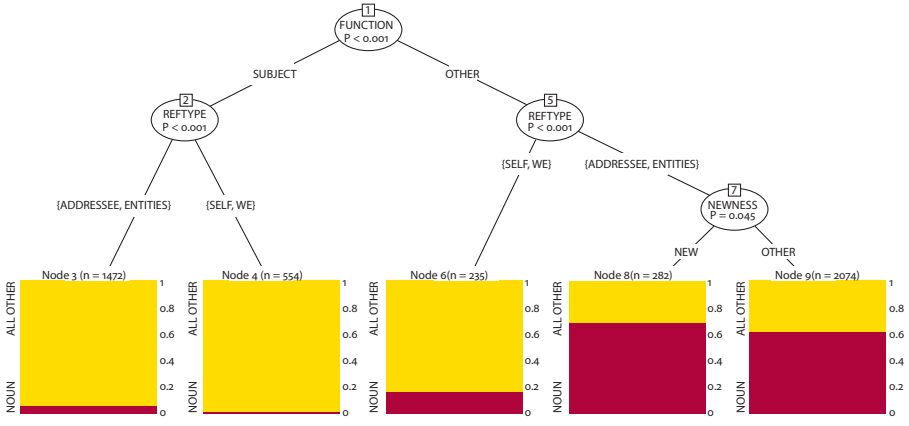

Figure 1. Binary partition tree for referring uses of nouns

status. The effect of this was that nouns were more frequent among given referents (31.18 % in Table 5). The analysis of a few examples helps account for this unexpected pattern of noun use.

In Example 6, the child uses the noun *camion* (‘*truck*’) for a given referent.

(6) Elodie, 2;2, MLU 2.04
Elodie and her mother are playing with Legos. She just took apart a garbage truck.

Mot22	ben il est où le camion?	‘so where is it, the truck?’
Elo85	[ipati]	
	‘i(l) pa(r)ti’	‘it’s gone’
Mot123	il est parti le camion?	‘is it gone the truck?’
Mot124	qu’est-ce qu’elle a fait Elodie au camion? /c’est tout ce qui reste	‘what did she Elodie do to the truck? /that’s all that’s left’
Elo86	[a! / ajajapy / japyjamɔ̃pubɛl {xx}]	
	‘ah! / a (il)ya (il)ya p(l)u(s). / ya p(l)u(s) camion poubelle’	‘oh! / no more, no more / no more garbage truck.’
Mot125	y a plus / il est parti	‘no more / it’s gone’
Elo87	[pakamjɔ̃pubɛl?/ padkamjɔ̃pubɛl?]	
	‘pas camion poubelle / pas d(e) camion poubelle?’	‘no garbage truck / no garbage truck?’
Mot126	ben oui	‘well yes’

In this excerpt, the child uses two types of referring expressions: the clitic pronoun *il* (‘*it*’) acting as the subject (Elo85), and the noun *camion* (‘*truck*’) in functions other than subject (object of a presentative in Elo86, or alone in a verbless utterance in Elo87). Note also that nouns occurred in “negative” utterances.

Example 7 suggests that when a child is speaking about a participant, nouns tend to appear in contexts implying a comparison or an opposition between (potential) referents.

(7) Olga, 2;4, MLU 2.65

Olg198	[seamwa]	
	'c'est à moi'	'it's mine'
Mot199	c'est à toi oui	'yes it's yours'
Olg199	[wa:]	
	{xx}	{xx}
Mot200	sais bien que c'est à toi	'know very well it's yours'
Olg200	[epapuʁ***mamɑ̃***]	
	'est pas pour ***maman***'	'is not for ***Mommy***'
Mot201	c'est pas pour maman	'it's not for Mommy'

In Example 7 the child refers to her mother using *maman* ('*Mommy*') in a negative utterance *[epapuʁmamɑ̃] 'est pas pour maman*' ('*is not for Mommy*') after she identifies herself as the possessor of the object of attention (Olg198). At the syntactic level, nouns tended to be used in utterances containing negative adverbs and/or cleft constructions. At the discursive level, previous and/or following utterances of the same thematic sequence contained similar indicators of opposition (negative adverbs or cleft structures) or clarification questions from the adult on the child's project with *pourquoi*? ('*why*?').

3.5.2 *Strong demonstrative pronouns*

Table 6 shows that for strong demonstrative pronouns, only two factors had an impact: attentional and discursive status and syntactic function. These forms were more probable for activated referents than for given or new ones, and were less probable as subjects.

Figure 2 shows that the main factor was activation, followed by function. The effect of function was more prevalent for activated referents than for non-activated ones. As a whole, strong demonstrative pronouns were preferentially used in an activated context and a non-subject function, as in Example 8.

(8) Margaux, 2;3, MLU 2.62

Margaux has just said she doesn't like water

Mot74	oh si pourtant tu adores ça	'oh but yes, you love that'
Mar65	[e ! / ***sa***] ((pointe le dessin	((pointing to a drawing
	sur le paquet))	on the package))
	'eh ! / ***ça***'	'hey! / ***that***'
Mot75	oui c'est un singe	'yes, it's a monkey'

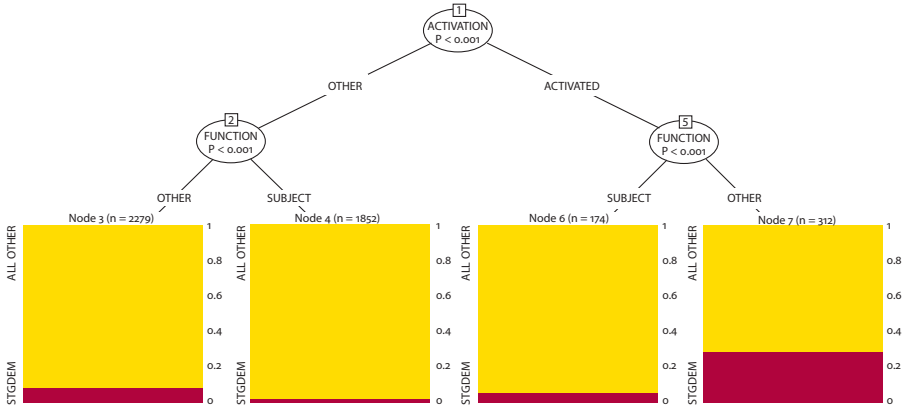

Figure 2. Binary partition tree for strong demonstrative pronouns

In Mar65, the child uses the demonstrative pronoun *ça* ('*that*') to introduce a referent that is part of the same activity even though it has not yet been mentioned.

But *ça* also appeared when the referent had already been mentioned (discourse-given). It was used in contrasts too, as in Example 9 (utterance Clc24):

(9) Clémence, 2;3, MLU 2.56
Clémence and her mother are playing lotto.

Mot48	essaye ça pour voir si ça marche	'try that to see if it works'
Clc24	[no sɛpa***sa***]	
	'non c'est pas ***ça***'	'no it's not ***tha***t'
Mot49	ah bon	'okay'

3.5.3 *Strong personal pronouns*

In Table 6, we saw that the children were more likely to use strong personal pronouns when referring to themselves, and less likely when the referent was an entity in the subject function.

Figure 3 shows that the most prevalent factor was the type of referent. For referring to entities or WE, strong pronouns were rare. On the other hand, they were more frequent for references to the self and to the addressee, especially *toi* ('*you*') and *moi* ('*me*'). In these cases, the highest percentages were obtained when the referent was not the subject – usually in conjunction with the presentative *c'est* ('*it's*') – or was in a simple or cleft construction that marked, or even contrasted, possession or agency (Example 10).

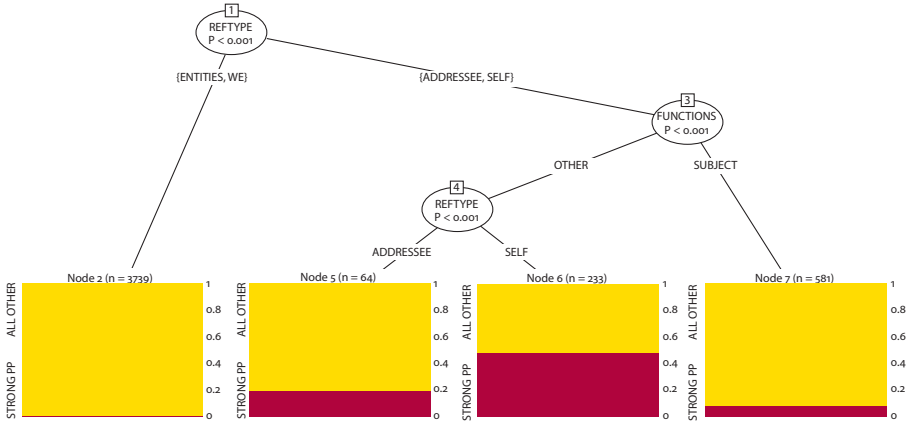

Figure 3. Binary partition tree for strong personal pronouns

(10) Cécile, 1;10, MLU 2.83

Fat60	bon moi je vais mettre la petite vache dans le dans le–	'so me/ I'm going to put the little cow in the in the-'
Céc51	[nɔ̃ se***mwa***]	
	'non c'est ***moi***'	'no it's ***me***'
Fat 61	c'est toi?	'it's you?'
Céc52	[wi]	
	'oui'	'yes'
Fat62	ah bon	'oh'
Céch53	[sepa***twa***]	
	'c'est pas ***toi***'	'it's not ***you***'

3.5.4 *Clitic personal pronouns*

Table 7 shows that the use of clitic personal pronouns was significantly affected not only by MLU (higher frequency in MLU3), but also by attentional and discursive status (lower probability of using a clitic pronoun for new referents and higher probability for given referents) and type of referent (higher probability of using a pronoun for the addressee). There was also a significant impact of syntactic function, with clitic personal pronouns being more probable for subjects.

Figure 4 shows that syntactic function (subject vs. all other functions) was the main factor, since clitic personal pronouns rarely appeared in non-subject functions. Accordingly, 75 clitic personal pronouns were used for a function other than subject; they were slightly more frequent in MLU Group 3 than in the other two groups. Among those 75 clitic personal pronouns, 57 were direct or indirect

Table 7. Regression tables for weak referring expressions (clitic personal pronouns, fillers, and null forms)

	Fixed Effects	Est*	S.E.	z	p	Random Effects	Var.	S.D.	C-Value**
Clitic Personal Pronoun									0.87
	Intercept	-4.563	0.327	-13.945	<.0001	Session	0.358	0.598	
	MLU (MLU 2***)	-0.0209	0.377	-0.055	.9558	Child	0.522	0.722	
	MLU (MLU 3)	0.811	0.345	2.351	.0187				
	Attentional and discursive status (Discourse-given)	0.688	0.162	4.255	<.0001				
	Attentional and discursive status (New)	-1.350	0.479	-2.823	.0048				
	Syntactic function (Subject)	2.195	0.136	16.102	<.0001				
	Participant (ADD)	1.362	0.224	6.079	<.0001				
Fillers									0.76
	Intercept	-3.490	0.226	-15.427	<.0001	Session	0.342	0.585	
	Attentional and discursive status (Discourse-given)	0.372	0.173	2.149	.0317	Child	0.322	0.568	
	Attentional and discursive status (New)	-0.801	0.387	-2.073	.0382				
	Participant (SELF)	1.187	0.134	8.848	<.0001				
Null Forms									0.75
	Intercept	-2.703	0.175	-15.466	<.0001	Session	0.297	0.545	
	Attentional and discursive status (Discourse-given)	0.591	0.134	4.395	<.0001	Child	0.193	0.439	
	Attentional and discursive status (New)	0.756	0.292	-2.594	.0095				
	Syntactic function (Subject)	0.220	0.093	2.369	.0178				
	Participant (SELF)	0.917	0.107	8.563	<.0001				

* Est.: Estimate; S.E.: Standard Error; Var.: Variance; S.D.: Standard Deviation.
Number of observations: 4617, Grouping factors: Sessions: 60, Children: 28
** The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that C-values below .5 indicated a model that is not better than chance whereas C-values above .7 are reasonable and above .8 are strong
*** The category in parentheses on fixed-effect rows indicates the category value compared with the intercept (reference level). For binomial factors, the reference level is the other factor; for multilevel factors (i.e., here MLU) the reference level is the level not appearing in any row of the table.

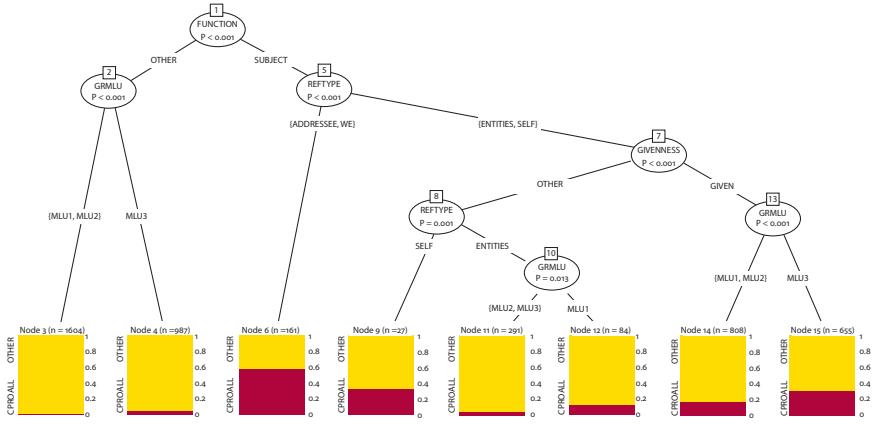

Figure 4. Binary partition tree for clitic personal pronouns

objects,[9] of which 47 had the given status and 7 were in joint-attention contexts. For the subject function, the type of referent influenced the number of pronouns used. For the addressee or WE, the children produced up to 60 pronouns. For the SELF and entities, the use of clitic personal pronouns was influenced by givenness and MLU. When the referent was not discourse-given, only self-references triggered a certain number of pronouns. And when the referent was given, there were more pronouns for MLU3, irrespective of the referent type. This occurred, for instance, in Elo85 of Example 6, *i pati* ('*it's gone*'), which is a typical case of plain continuity, where taking up a referent corresponds to continuation of a predication (here, a response about a shared topic). When the child did not produce a pronoun in such contexts, he/she most often employed null forms or fillers, as in Example 11 (Clc 63 and 64):

(11) Clémence, 2;2, MLU 2.85

Mot73	il dort ?	'he's sleeping?'
Clc57	[ɪdɔʁ]	
	'i(l) dort'	'he's sleeping'
(…)		
Mot83	oh oh oh Petit Ours Brun regarde	'oh oh oh Little Brown Bear! look!'
Clc63	[pa fɛ dodo]	
	'pas fait dodo'	'not sleeping'
Mot84	qu'est-ce qu'il fait Petit Ours Brun ?	'what is Little Brown Bear doing?'
Clc64	[***a***fɛ {solatal}]	
	'***F*** fait {sur la ta(b)le}'	'**F**'s doing {on the table}'

9. The other cases corresponded to the adverbial pronoun *en* ('*of it*','of them'), as in [jãnapy?] ('*y en a p(l)us?', 'there is/are no more of it/them*', Olga, 2;3).

In Clc57, the child takes up the clitic pronoun just used by her mother. Later, whereas the mother reintroduces the referent by way of a noun (Mot83), the child adds a predication using a null form, and then, after a second question from the mother, produces another predication using a filler [a]. These three weak forms are in plain continuity with respect to an already mentioned referent. On the other hand, strong forms were preferred in contrast contexts, as above in Example 6.

The same held true for references to participants. In the excerpt below, the child first refers to her interlocutor (the mother) using a noun; then she uses a clitic pronoun.

(12) Pauline2, 2;3, MLU 2.52
Pauline and her mother are drawing hats.

Pau54	[mɛ̃tnã sɛ ɛ̃ puʁ mamã]	
	'maintenant c'est un pour maman'	'now it's one for Mommy'
Mot96	il est comment le chapeau d(e) maman ?	'what is Mommy's hat like?'
Pau55	[***ty***fɛʃapo?]	
	'***tu*** fais chapeau?'	'***you***'re making hat?'
Mot97	oui.	'yes.'

This excerpt begins with a contrast introduced by the child between a hat already drawn and a second one not yet drawn. The subject clitic pronoun referring to the mother (Pau55) is produced by the child in an utterance without contrast that is in continuity with her own utterance.

Figure 4 shows that a few rare clitic personal pronouns were used for not-yet-mentioned entities. The qualitative analysis of these cases brought out the importance of joint attention to these referents.

(13) Maxime, 2;3, MLU 1.45
Maxime and his mother are playing cards with pictures of rabbits on them.

Mot66	il est pas triste là / hein. ((troisième lapin)) là ***il*** est un peu non ((quatrième lapin))	'he's not sad there/ huh. ((third rabbit)) there ***he***'s a little sad, no? ((fourth rabbit))'
Max 60	[ʁega***i***plœʁ]	
	'regarde ***i(l)*** pleure ((cinquième lapin))'	'look ***he***'s crying ((fifth rabbit))'

In this example, Maxime and his mother talk about the emotions of various rabbits, on which both of them are focusing. In Max60, the child mentions the fifth rabbit for the first time using the clitic personal pronoun *i(l) ('he')*. This referent is similar to the preceding ones introduced by the mother. Note that in the previous

speaking turn (Mot66), the mother had also introduced a referent belonging to the same category, via a clitic personal pronoun.

3.5.5 *Fillers*

In Table 7, we can see that the children were more likely to use fillers when referring to the SELF and less likely when referring to entities not yet mentioned in the discourse.

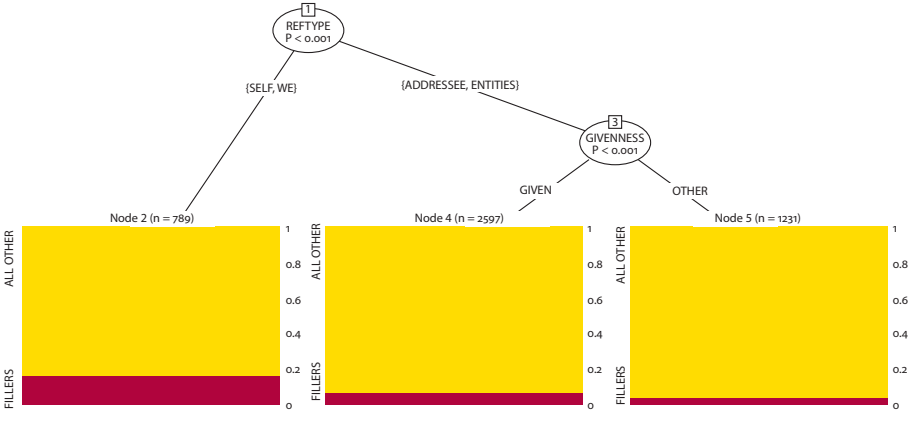

Figure 5. Binary partition tree for fillers

Figure 5 shows that fillers were more frequent in references to oneself (SELF) or to the dyad (WE). In the other cases, altogether scarce, fillers were preferentially used for given referents.

Example 14 illustrates a case of references to the self (Elo13) and to WE (Elo11) by means of a filler. In Elo13, the filler is in continuity with the preceding utterance. This preceding utterance expresses an opposition pertaining to the agent of the current process via an utterance containing not only an adverb of negation but also a cleft construction about the agent and a noun in a self-reference (Elo12).

(14) Elodie, 2;2, MLU 2.04

Mot12	là / ici/ on le met là.	'there/ here/ we put it there.'
Elo11	[ɔmela]	
	'***F*** met là.'	'***F*** put there'
Elo12	[nɔseelodikifɛ{sa}]	
	'non c'est ***Elodie*** qui fait ça.'	no it's ***Elodie*** who does that.
Mot13	c'est Elodie qui fait ça alors mets là.	'it's Elodie who does that, so put there.'
Elo13	[la / amela / sela]	
	'là / ***F*** mets là / c'est là.'	'there / ***F*** put there / it's there.'

Regarding the occurrences of fillers for non-given entities, many uses were for activated referents (19 out of 38), as in Example 15.

(15) Arnaud, 2;2, MLU 2.96
Arnaud and his mother are putting toy beads into holes in a game board. Arnaud touches the rug.
Arn36 [pukwa*i*mwela]
'pourquoi ***F*** mouillé là.' 'why ***F*** wet there.'

In this excerpt, Arnaud (Arn36) attracts his mother's attention to the rug where they are sitting. This not-yet-mentioned referent is part of the shared activity. Moreover, it is actualized by a gesture (a touch) accompanying the deictic *là* ('*there*').

3.5.6 *Null forms*

The children were more likely to use null forms (see Table 7) when the referent was discourse-given, acting as the subject, and referring to themselves. They used null forms less often for new referents.

Figure 6 shows that these factors interacted in a complex way. The type of referent was the primary factor. The secondary factors for the SELF and WE differed from those for the addressee and entities on the other. The SELF and WE references involved more null forms when the referring expression was acting as the subject. In this case, the SELF category triggered more null forms than the WE category did.

Furthermore, the production of null forms to refer to the addressee (ADD) or to entities partly depended on givenness. Non-given referents (nodes 16 and 17 on the right) were seldom encoded using null forms, and when they were, the referents were activated or reintroduced. The greatest number of null forms was found for given referents acting as the subject. As we saw above in Example 11, null forms in the subject function alternated with fillers and clitic personal pronouns: we found more null forms for the addressee than for entities, whereas the opposite was true for non-subject functions (see Example 1).

Example 16 illustrates the case of a null form acting as the subject and referring to the addressee. Pauline, the child, first uses the clitic subject *t'* ('*you*') to offer her mother some of her bun, saying *[tãvø?]* ('*t'en veux?*', 'do you want some?'). When the mother refuses, the child produces an explanation while referring to her mother without mentioning her. We were able to identify this reference, thanks not only to the preceding discursive context, but also to the content of the rest of the utterance and the mother's reformulation.

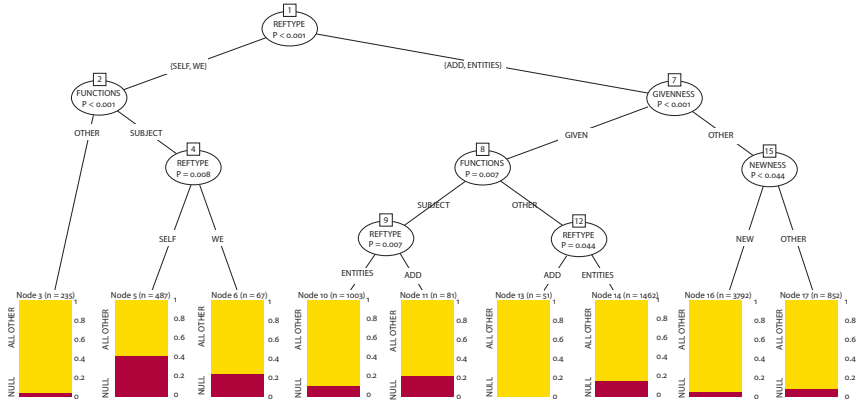

Figure 6. Binary partition tree for null forms

(16) Pauline2, 2;3, MLU 2.52

Pau125	[tãvø ʔ]	
	'tʲen veux?'	'do you want some?'
Mot246	non merci.	'no thanks.'
Pau126	[dezøne avɛk papa?	
	'déjeuné avec papa ?'	'ate with Daddy?'
Mot247	oui ((rit)) j'ai déjeuné avec	'yes ((laughing)) I ate with
	papa oui c(e) matin.	Daddy yes this morning'.

4. Discussion

In this chapter, we attempted to account for the repertory of referring expressions and their uses among 28 French-speaking children in a natural-dialogue situation taking place in their homes. We raised the question of how the use of referring expressions is related to linguistic development (measured by MLU) and to syntactic and discourse-pragmatic factors, and of how these different factors interact with each other. We approached this issue from the angle of the opposition between strong and weak forms.

The children ranged in age between 1;7 and 2;6, a crucial period for the development of grammatical paradigms. As noted above, nouns and strong demonstrative pronouns are the earliest referring expressions used, so they were expected to decrease proportionally with MLU. Strong and clitic personal pronouns were expected to increase. We also predicted that the increase in clitic personal

pronouns would lead to a decrease in pre-syntactic forms (fillers and null forms). The results indicated a lower proportion of nouns and a higher proportion of clitic personal pronouns in MLU Group 3, whereas no significant tendencies were observed for the other four types of forms. Statistical data processing (with participants and sessions as random factors) allowed us to confirm that factors other than pure grammatical development play an important role.[10] Two important, interrelated findings can be mentioned here. On the one hand, the patterns of referring expressions differed across the various factors; on the other, the different factors considered did not act in the same way for the different forms:

a. The contrast between references to entities and references to participants – and among the latter, between the self and the addressee – affected the choice of referring expressions in a complex fashion. The first uses of strong pronouns concerned self-references, whereas demonstrative pronouns served only for referring to entities. Nouns were mainly used for entities but were sometimes employed for participants, especially the addressee.
b. Attentional and discursive status had an impact on the use of most of the referring expressions produced. Nouns and strong demonstrative pronouns were less probable when the referent was given; nouns were more probable for new and reintroduced referents; and strong demonstrative pronouns occurred most often when the referent was activated. By contrast, weak forms were strongly influenced by givenness, whereas strong personal pronouns were not affected by this factor.
c. The syntactic function (subject vs. other functions) played an important role for all types of referring expressions: the three strong forms had the highest probabilities of occurring in a function other than subject, whereas weak forms were preferentially chosen for the subject function.

The various factors interacted in different ways, depending on the type of referring expression. For nouns and clitic personal pronouns, all of the factors studied allowed us to predict the use of referring expressions with a relatively high degree of certainty ($C = 0.87$ and 0.88). These two forms were symmetrical to each other in our data. While clitic personal pronouns were preferred for the subject function, nouns were not chosen as subjects. And while clitic personal pronouns were used for participants, nouns were preferred for entities. Lastly,

10. Chapter 7 (Marcos, Salazar Orvig, da Silva-Genest, and Heurdier, 2021), Chapter 8 (Hassan, de Weck, Rezzonico, Salazar Orvig, and Vinel, 2021), Chapter 9 (de Weck et al., 2021), and Chapter 10 (Vinel et al., 2021) address other factors such as the impact of the dialogue, the activities carried out, and the different speech genres.

clitic personal pronouns were associated with given referents, whereas nouns were associated with new or reintroduced referents. It thus seems indeed that children acquire clitic personal pronouns for functions that are complementary to those of nouns.

The other two weak forms, null forms and fillers, occurred in similar contexts to those of clitic personal pronouns. The two strong pronoun forms (strong demonstrative and strong personal pronouns) functioned differently at the attentional and discursive level: strong demonstrative pronouns were preferred for entities in an activated context, while strong personal pronouns were used the most for participants, regardless of their attentional and discursive status.

This functional specialization is not a grammatical constraint. Rather, it is probabilistic in nature (Allen, 2008). What we are seeing here is that children are highly likely to use weak forms in given-referent contexts and strong forms for referents not mentioned recently. However, both strong forms and weak forms can be found in their non-preferential contexts.

By means of qualitative and quantitative analyses, then, we showed that clitic personal pronouns encoding referents not yet mentioned in the discourse were used for referents upon which the participants' attention was already focused. In line with cognitive views of anaphora (Ariel, 1990; Cornish, 1999; Gundel et al., 1993), joint attention may indeed suffice for constructing a shared representation of a situation (see also Skarabela et al., 2013, for omissions in Inuktitut).

On another side, we observed the use of strong forms for given referents, both participants and entities. Regarding references to participants, the qualitative analysis suggested that they occur in contexts of contrast or opposition. Our results are consistent on this point with Morgenstern's (2006) and Caët's (2013), although our frequencies were higher for the addressee than for the self. In our data, contrasts were usually achieved via strong pronouns in the case of self-reference.

Our qualitative analysis brought out similar functioning for references to entities: weak forms were preferred in contexts involving the simple addition of a predicate; strong forms were used to express oppositions and contrasts. These findings, in line with Chafe (1976), converge with Salazar Orvig et al.'s (2010b) results. In their study on the choice between omissions and explicit forms, Hughes and Allen (2006) found that the contrast variable overrode the other accessibility factors (see Chapter 7, Marcos et al., 2021).

Thus, for entities, clitic personal pronouns indeed seem to be acquired with the initial function of encoding referents that are the most accessible or benefit from the interlocutors' joint attention. However, Figures 1 and 4 also showed that syntactic function was the predominant factor in the use of clitic personal pronouns and nouns, with the other factors being subordinate to it. This is a complex question.

It should be noted, first of all, that during the period of linguistic development at stake here, children have not yet mastered object pronouns (Hamann et al., 1996). Object pronouns – too scarce to carry weight in the Figure 4 partition – nonetheless seem to have been acquired well enough to be used in the same type of context as subject pronouns.

This brings us to the fundamental issue of the interface between grammar and pragmatics (and on a more general level, a key question in functional linguistics): Can syntactic function be considered independent of functional factors? Generally speaking, it seems difficult to disentangle "the purely grammatical" from "the pragmatic" in these conventional forms, since the subject function, as stated by Chafe (1976: 55), is "the item about which knowledge is added." As such, it is the function that serves to encode given referents, to the current topic, or to whatever is highly accessible (Allen, 2006; Ariel, 2000; Givón, 1983). Moreover, in languages like French, a cleft construction or a dislocation is generally chosen to introduce or reintroduce a referent in the subject function (Lambrecht, 1994).

The contrast between strong and weak forms seems to precede the construction of syntactic relations. The fact that null forms and fillers appeared in the same types of contexts as clitic personal pronouns suggests that children acquire the functional contrast between referents under joint attention, and referents that are not, before they are able to handle pronouns. Clearly, in the earliest stages of language acquisition, during the period of one-word utterances, they seem to produce isolated nouns or deictics like *ça* (*'that'*) or *là* (*'there'*) to attract an adult's attention to objects, and they produce predications (not yet verbs) about highly accessible referents (already mentioned or under joint attention). Such utterances with non-verbalized referents fall into a relation of referential continuity with the preceding discourse. The same holds true during the presyntactic transition period where fillers, little by little, contribute to forming the verb category (Veneziano, 2017) and, thus, the subject function. This kind of proto-anaphoric function will serve as a medium for grafting the use of the first pronouns, which themselves are morphologically specialized for performing the subject function.

Lastly, our data brought out an asymmetry in the acquisition of the clitic-pronoun paradigm (and thus in the use of fillers and null forms) that was based on the type of referent. This asymmetry has often been brought up, not only in developmental studies but also in work on person marking in different languages (Ariel, 2000), with the first and second persons being seen as more accessible than the third person. This was the case in our self-reference data (see also Chapter 2, Yamaguchi et al., 2021), but it was not so for references to the addressee or WE, which involved more clitic personal pronouns and fewer fillers and null forms than references to entities. We can put forth two possible hypotheses here: repetition of the French pronoun *on* (third-person singular pronoun often employed to mean

'we') in adult productions, and the preferential association of certain referring expressions with certain verbs or speech acts. This question (which lies beyond the scope of this chapter) remains unanswered and requires a study of its own.

5. Conclusion

Our study confirmed prior results on the early development of children's referential skills while also deepening our understanding of this issue. We assessed the separate and combined effects of several factors involved in syntactic and pragmatic development. We also included, in the same statistical analysis, references to entities and references to participants. Finally, via qualitative analysis, we explored some cases of discrepancies between the observed and expected relations between a given factor and the referring expressions used. In line with the data in the literature, we found a strong link between referent givenness and the use of referring expressions: weak forms were employed especially for given referents, strong forms for new or reintroduced referents. Our finding that syntactic function was the major factor supports this idea: the association between grammatical subjects and weak expressions corresponds to the fact that the grammatical subject of an utterance generally encodes what happens to be the interlocutors' current focus of attention. These results argue strongly in favor of the intricate relations between morphological, syntactic, and pragmatic development.

Our analyses showed, however, that other factors (linguistic development level, type of referent, etc.) also play a role, and that the impact of each factor is partly conditioned by that of the others. We have thus painted a highly complex picture of children's syntactic and pragmatic abilities at an early age. The qualitative analysis of the discrepant cases noted here provides a basis for future research.

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CHAPTER 4

Referring in dialogical narratives

A study on children's use of nouns and pronouns

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In a recent overview of the literature on spontaneous and experimentally-produced speech, Allen, Hughes, and Skarabela (2015) identified many discourse-pragmatic factors that affect the use of referring expressions. In this chapter, we first assess the individual effects and the relative importance of four factors (i.e., position of the referring expression in the referential chain and its syntactic function, the referent's characteristics – primacy and/or animacy – and the chronological age) in a narrative dialogue between a mother and her child. Second, we describe the joint impact of these factors on the use of nouns and third-person pronouns. A total of 30 typically-developing French-speaking children aged 4 to 7 years participated with their mother in a joint storytelling. Our results corroborate those found in the literature on the factors affecting young children's use of referring expressions. Furthermore, they show a complex network of relations between the factors, that interestingly, was not the same for nouns and third-person pronouns.

Keywords: third-person pronouns, nouns, position in the referential chain, syntactic function, referent's characteristics, primacy, animacy, narrative dialogue, mother-child interaction

1. Introduction

The purpose of this chapter is to study the individual and joint effects of various factors on the use of referring expressions among 4- to 7-year-old children

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interacting with their mother during a joint storytelling activity with a wordless picture book. There are many discourse-pragmatic factors that affect the use of referring expressions, as noted in Allen, Hughes, and Skarabela's (2015) recent overview of the literature on spontaneous and experimentally-produced speech. In the conclusion of their review, the authors state that the impact of these various factors differs across studies, and they raise the question of potential factor interdependence.

In continuation of the work on this topic, the present chapter looks into the impact of four factors on the use of referring expressions: the referent's characteristics, namely primacy (main character vs. secondary referent) and animacy (animate vs. inanimate referent), the position of the referring expression in the referential chain and syntactic function, and finally the child's age. These factors are known in the literature for their influence on the referential choice but little is known about their relative importance.

Many studies have examined the influence of these factors on the use of referring expressions in monological narratives (Akinci, 2012; Bamberg, 1987; de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985; Kern, 2002). Very few, if any, have looked into their influence in dialogical narratives (de Weck & Salazar Orvig, 2014; Vinel, 2014; see also Chapter 10, Vinel, Salazar Orvig, de Weck, Nashawati & Rahmati, 2021). In a dialogical approach to language acquisition (see Chapter 1, Salazar Orvig, de Weck, Hassan, & Rialland, 2021), we believe that it is important to tackle this question in order to highlight the effects of these factors on the use of referring expressions in both contexts, and to establish whether and how they are related to the dialogical setting. We also believe that these two approaches (monological and dialogical settings) are complementary, and even necessary, in assessing the influence of the factors mentioned above in the wide range of narrative contexts to which a child is exposed. When one looks at the impact of each of these factors in the monological and dialogical contexts, similarities and differences can be found. We will discuss the effects of each factor, calling jointly upon the findings of the monological narrative research and the (much scarcer) work on dialogical narratives.

1.1 Position in the referential chain

First of all, in both settings (monological and dialogical), the use of referring expressions is affected by the referent's position in the referential chain.

For example, to mention a referent for the first time, children aged 3 to 6 years usually use noun phrases, and to a lesser degree, pronouns (Akinci, 2012; de Weck, 1991; Hassan, Salagnac, & Vinel, 2012; Hickmann, 2003; Karmiloff-Smith, 1985; Kern, 2002; Salazar Orvig & de Weck, 2013; Vinel, 2014). Most studies on

monological narratives have shown that the impact of the position of the referring expression in the referential chain depends strongly on the child's age. Referring expression acquisition occurs gradually, with the first uses having a deictic value, and anaphoric values emerging later on (Akinci, 2012; Bamberg, 1987; de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985; Kern & Raffara, 2012). Accordingly, in first mentions, children between the ages of 3 and 6 years appear to use mostly definite noun phrases or pronouns, with the younger children producing more pronouns than the older ones (de Weck, 1991; Karmiloff-Smith, 1985; Kern, 2002). Colozzo and Whitely (2015) nonetheless noted for English that 5-year-olds introduced referents slightly more often with indefinite noun phrases than with definite ones. In French, studies have shown that children do not use more indefinite noun phrases until age 6 or 7 years, with pronouns starting to be employed in a more anaphoric way (Akinci, 2012; de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985; Kern, 2002). However, in studies that take a dialogical stance, the use of pronouns has been shown to be anaphoric rather than deictic (e.g., Salazar Orvig et al., 2010). Moreover, in dialogical narratives, definite noun phrases are frequent, especially among the youngest children, along with indefinite noun phrases which also play a non-negligible role (Vinel, 2014).

For subsequent mentions – in dialogical and monological settings alike – children generally use pronouns (especially clitic pronouns) to maintain references, notably for referring to main characters throughout a narrative (Bamberg, 1987; de Weck, 1991; Salazar Orvig & de Weck, 2013; Vinel, 2014). In dialogical narratives, however, definite noun phrases (Salazar Orvig & de Weck, 2013; Vinel, 2014) are used in subsequent mentions. They usually serve to maintain references to inanimate objects that are not the grammatical subject; clitic pronouns are usually employed to mention animate referents, mostly main characters. In monological narratives, younger children seem to employ more noun phrases to maintain reference than do older children, who use more pronouns (Akinci, 2012; Bamberg, 1987; Hickmann, 2003; Hickmann, Kail, & Roland, 1995). In addition, several authors studying French-speaking children (Akinci, 2012; Hickmann & Hendricks, 1999; Jisa, 2000) have noted that 5- to 7-year-olds use many dislocations, generally to the left, to maintain and reintroduce referents. After age 7, these uses disappear.

1.2 Referent's characteristics

In narratives, two aspects of referents are usually considered: animacy (Fukumura & van Gompel, 2011) and primacy (Colozzo & Whitely, 2015).

The animacy of the referent has often been proposed as an important factor in the use of referring expressions, regardless of the context (monological or

dialogical narratives). The reasons for this are clearly summarized by Fukumura and van Gompel (2011) in the case of adult interlocutors. According to these authors, human referents are more accessible than animal referents, which in turn are more accessible than inanimate referents. They found that adult participants used pronouns significantly more often for the humans than for inanimate referents in a sentence completion task. A corpus study by Givon (1983) showed that animate referents were mentioned more frequently than inanimate ones. Referent animacy thus seems to have an impact on the use of referring expressions not only because it affects the accessibility of the referent itself, but also because it affects the accessibility of its predicate: "reduced" expressions such as pronouns may be more frequent when the predicate is more accessible (in the case of animate referents) since pronouns lead to faster production of the predicate.

However, the actual contribution of the referent's animacy can be questioned in light of diverging findings of studies on this issue, especially for children (see Allen, Skarabela, & Hughes, 2008). Clancy's (1997) work in Korean showed that animacy did have an effect, whereas Allen's studies, whether in Inuktitut (Allen, 2000) or English (Hughes & Allen, 2006), did not demonstrate such an effect. For Allen, Skarabela, and Hughes (2008), the discrepancies can be explained in terms of coding differences, and for Serratrice (2013), in terms of the experimental and methodological setting.

In monological narratives the referent's primacy – the prominence a character has in a story (e.g., primary vs. secondary characters) – can also have an impact on the use of referring expressions (Colozzo & Whitely, 2015; de Weck, 1991; Hickmann, 2003; Karmiloff & Karmiloff-Smith, 2001; Kern, 2002). No matter how old the children are, indefinite noun phrases seem to be employed mainly to introduce secondary referents, with pronouns and definite noun phrases being preferred for introducing main characters (de Weck, 1991; Kern, 2002). However, in the Colozzo and Whitely (2015) study, the effects of the referent's primacy and animacy were subordinate to that of the position in the referential chain for three-quarters of their 5- to 8-year-olds. Among the youngest children, the position in the referential chain had the greatest impact.

1.3 Syntactic function

Syntactic function is also known to affect the use of referring expressions. In monological narratives, once a referent is introduced, most expressions referring to the main character – especially personal pronouns – are the grammatical subject of the utterance (Jisa, 2000; Jisa & Kern, 1998; Karmiloff-Smith, 1985, 2003). Bamberg (1987) suggested that the roles of animacy and syntactic function could be strongly related, and that referents that are active in moving the story plot

forward are more likely to fill the subject position. The difference between animate and inanimate referents observed in the literature could also be related to their likelihood of being the grammatical subject of an utterance.

Studies on dialogues have also pointed out children's sensitivity to grammatical and discourse-pragmatic factors (Allen, Skarabela, & Hughes, 2008; see also Chapter 3, da Silva-Genest, Marcos, Salazar Orvig, Caët, & Heurdier, 2021; Chapter 5, Rezzonico, Bernasconi, de Weck, da Silva-Genest, & Jullien, 2021). Salazar Orvig and de Weck (2013) showed that, as a whole, children between the ages of 4 and 7 years used more pronouns, especially clitic ones, than noun phrases. More specifically, they found that children "tend to preferentially express the subject function with pronouns and to use pronouns mostly for the subject function" (p. 14, our translation). Pronoun dislocations were also found, in particular for expressing a contrast with preceding utterances. However, when the position in the referential chain was taken into account, the tendencies changed somewhat: nouns were more prevalent as subjects in first mentions, whereas clitic pronouns were more prevalent as subjects in subsequent mentions; for objects, pronouns and nouns appeared in virtually equivalent proportions. Also, null forms (very rare) were only employed as subjects in subsequent mentions to talk about a highly accessible referent.

Concerning age, we have seen that its impact shows up in the background of the other factors presented here. While studies on monological narratives have shown that the older the children are, the more they use the expected referring expressions, studies on dialogical narratives indicate a more nuanced effect of age.

1.4 Aim of the study

Firstly, we will attempt to assess the individual effects of the four factors discussed above – and their relative importance – on the referential system of French-speaking children in a joint storytelling activity with their mother. Secondly, we will describe the joint impact of these factors, while focusing on two categories of referring expressions, nouns and third-person pronouns. Based on the data presented above, we can hypothesize that the factors studied, i.e., the referent's characteristics, the position of the referring expression in the referential chain and syntactic function, and the child's age, have a joint impact on the choice of a noun or pronoun in dialogical narratives by preschool and elementary school children. We contend, however, that the respective effects of these factors can be ordered (Colozzo & Whitely, 2015). We can also hypothesize that the position in the referential chain will have a greater effect in the children's use of referring expressions than the other factors will, both for nouns and pronouns. We do not expect to see an age effect on this point, in line with the literature on dialogical narratives. The

impact of syntactic function, as well as that of the referent's characteristics, should be subordinate to the position in the referential chain.

In addition to being closer to children's real-world experiences, the dialogue setting induces some specific uses of referring expressions (de Weck & Salazar Orvig, 2014; de Weck, Salazar Orvig, Rezzonico, Bernasconi, & Vinel, 2019) such as using pronouns for introducing new referents. Contrary to monological or experimental situations, in the dialogical elicitation context that we examined, the child was telling the story together with his/her mother. It means that his/her uses of referring expressions was influenced to some extent by those of the adult and by shared knowledge, among other features (Chapter 7, Marcos, Salazar Orvig, da Silva-Genest & Heurdier, 2021). These features might influence the interplay of the various factors; hence the relevance of studying them in this particular interactional setting.

2. Method

In this section, we present the participants under study and the data collection procedure (2.1), the data coding method (2.2), and the statistical analyses (2.3).

2.1 Participants and data collection

For this chapter, we combined data from two corpora[1] to obtain a total of 30 participating children, ages 4 to 7 years, divided into the following age groups: nine 4-year-olds (3;6–4;5), eight 5-year-olds (4;6–5;5), seven 6-year-olds (5;6–6;5), and six 7-year-olds (6;6–7;5).

The data were collected in the homes of the children, who were videotaped with their mother during the joint storytelling of a wordless picture book entitled *Ah, les belles vacances des petits cochons*.[2] The participants were instructed to tell the story together as they were accustomed to doing, with no time limit. Both the mother and the child were unfamiliar with the book, so they discovered the story as the activity progressed and kept the book open in front of them during the storytelling.

2.2 Coding

In this section, we begin by describing how we chose the referents (2.2.1) and the referring expressions categories retained for the analyses (2.2.2). Then we present

1. The DIAREF-Lille corpus and the Mother-Child Interactions corpus; see Appendix I.

2. Goodall, J.S. (1980). *Ah les belles vacances des petits cochons!* Paris: Gallimard. Original edition: *Paddy Pork's Holiday*, Macmillan Children's Books (1975). See Appendix III.A for the summary of the story.

the different factors hypothesized to play a role in the use of referring expressions, namely, the position of the referring expression in the referential chain (2.2.3), the referent's characteristics (primacy: main vs. secondary; animacy: animate vs. inanimate) in the story (2.2.4), and the referring expression's syntactic function (2.2.5).

2.2.1 *Identifying the referents*

To better compare the children's productions, we drew up a list of the referents depicted in the storybook. The list included 80 referents of different animacy and primacy (see Section 2.2.4). The participants did not necessarily refer to all of the referents and also mentioned others that were not on the list. Among the referents actually mentioned by the children during the interaction, only those belonging to the list were coded.

2.2.2 *Categories of referring expressions*

Only those referring expressions employed in a referential manner were retained. They were classified into one of the seven categories listed below. These categories represent the types of linguistic units used by the participants during the storytelling. We wanted to keep this wide range, both to demonstrate the diversity of the linguistic units used in a dialogical context, and to account for the position occupied by nouns and pronouns, which will be the focus of our analyses.

- Nouns: proper, common, and adjectives used as nouns
- Clitic and strong third-person pronouns: *il(s)* 'he/it/they', *elle(s)* 'she/it/they', *lui, leur*, *eux, le, la*, and *les* ('*it, him, her*, and *them*')
- Noun and pronoun dislocations to the right or left: *la femme elle …* ('*the lady she …*'), *il … le garçon* ('*he … the boy*'), *lui il…* ('*him he …*')
- Demonstrative pronouns: clitic such as the *c'* in *c'est* ('*it's*'), and strong such as *ce* ('*this*') and *ça* ('*that one*')
- Possessive determiners: *son, sa, ses, leur(s)* ('*his, her, its, their*')
- Null forms: zero anaphora, omissions and other implicit referents (with or without pointing)
- Other pronouns: interrogative, relative, indefinite, possessive, numeral, and adverbial

2.2.3 *Position in the referential chain*

We retained the following two[3] positions in the referential chain:

3. These two positions alone were taken into account in the children's discourse because children produce very few reactivations (Vinel, 2014) and repetitions, both of which are usually employed by the mothers (de Weck & Salazar Orvig, 2014; de Weck et al. 2019; see also Chapter 8, Hassan, de Weck, Rezzonico, Salazar Orvig, & Vinel, 2021).

– First mentions: first mention of a referent in the dialogue
– Subsequent mentions: later mentions of a referent within four speech turns

2.2.4 *Characteristics of the story referents*

In terms of their characteristics, the 80 referents in the list included one main animate character and 79 secondary referents: 19 were animate (humanlike animals) and 60 were inanimate (a tent, a car, etc.). This gave us three categories: main character, secondary animate characters, and inanimate referents.

2.2.5 *Syntactic function*

Three categories were distinguished. Given the age of the children, only the two most frequent syntactic functions were retained here: subjects and direct objects. All other functions were classified as "other".

2.3 Intercoder agreement and statistics

The mother-child interactions were fully transcribed and coded by a first coder based on written guidelines. A second coder reviewed 100% of the coding. Discrepancies were resolved through discussion. A randomly selected 10% of each interaction was recoded blindly by a judge to ensure coding reliability. Intercoder agreement for *position in the referential chain* was 89% (n = 224, Cohen's kappa=0.80); for the *referring expressions categories* it was 96% (n = 224, Cohen's kappa=0.94); for *syntactic function*, it was 93% (n = 224, Cohen's kappa=0.89).

Several techniques were used to analyze the data. First, a visual inspection of the distribution table provided a picture of the overall use of referring expressions. Second, the potential impact of five fixed-effect factors – the position of the referring expression in the referential chain and syntactic function, the referent's characteristics, and the child's age – on the use of nouns and third-person pronouns was explored using two mixed-effect binomial regressions. The regressions included two random-effect variables to control for the participant (the child's identity) and the item (the referent). Qualitative analyses and partition trees were used to further explore the quantitative results.

3. Results

We present the results in two parts in order to best describe how the children used referring expressions, and to assess the factors influencing their choices. First, after providing a quick overview of the findings for all factors pooled, we describe the results of each factor (3.1). Then we focus on nouns and third-person pronouns and look further into the impact of the various factors under study (3.2).

3.1 The use of referring expressions in terms of the different factors

Table 1 presents the results of the use of referring expressions for each factor, and for all factors pooled ("Total" row at the bottom of Table 1).

Table 1. Distribution of referring expressions (in percentage) by their position in the referential chain, their syntactic function, the referent's characteristics, and the child's age, for all participants pooled

		3PP*	OthP	DemP	Disl	Nouns	Null forms	PosDet	N=
		%	%	%	%	%	%	%	
Referential-chain position									
	First Mention	8.04	3.54	4.82	5.47	72.03	5.47	0.64	311
	Sub. Mention	54.25	3.46	6.56	3.96	19.81	3.31	8.65	1388
Syntactic function									
	Subject	72.23	2.32	9.08	6.86	6.23	3.17	0.11	947
	Object	20.75	1.24	2.90	1.24	73.03	0.41	0.41	241
	Other	8.61	6.65	2.54	0.78	51.66	6.26	23.48	511
Referents' Characteristics									
	Main Character	74.97	1.04	1.30	3.13	3.52	1.83	14.21	767
	Secondary Animate Character	35.35	8.33	8.33	6.82	34.09	5.30	1.77	396
	Secondary Inanimate Referent	11.75	3.36	11.75	3.92	62.87	5.22	1.12	536
Age									
	4-year-old	44.56	3.63	7.77	4.84	29.88	3.63	5.70	579
	5-year-old	53.72	2.71	6.77	3.39	22.12	3.61	7.67	443
	6-year-old	40.50	1.79	7.53	2.87	32.62	7.17	7.53	279
	7-year-old	42.46	5.28	2.51	5.28	34.42	1.51	8.54	398
Total		45.79	3.47	6.24	4.24	29.37	3.71	7.18	1699

* 3PP: clitic and strong third-person pronouns, OthP: other pronouns, DemP: demonstrative pronouns, Disl: noun and pronoun dislocations to the right or left, PosDet: possessive determiners, Sub. Mention: subsequent mention, SR: secondary animate referen

Overall, in a little more than three-quarters of the cases (see "Total" row in Table 1), the children used a third-person pronoun or a noun. Compared to these two types of referring expressions, the other categories were much less frequent (under 10% maximum). Now let us find out whether these results varied as a function of the

different factors under study. Concerning the impact of the *position in the referential chain* (Table 1), our 4- to 7-year-olds exhibited the well-known tendencies. That is, in first mentions there was a clear prevalence of nouns (about three-quarters of the cases; see Example 11) and a few third-person pronouns, whereas in subsequent mentions, there was a majority of third-person pronouns and fewer nouns. The other types of referring expressions were very infrequent in both of these positions in the referential chain. Note that nouns (see Table 2) in first mentions were mostly used with indefinite (see Example 11) or definite determiners, and less often with third-person possessive determiners. Conversely, nouns in subsequent mentions were mostly accompanied by definite determiners (in half of the cases) and less often by indefinite or possessive ones. The children thus exhibited a slight preference for indefinite determiners over definite ones for introducing a referent in a simple noun phrase and for definite determiners in subsequent mentions. The importance of possessive determiners in both positions can be explained by the fact that characters and objects are strongly connected in the story.

Table 2. Distribution (in percentage) of determiners preceding a noun according to their position in the referential chain and the referent's characteristics

		Indefinite %	Definite %	Possesive %	Other %	Null %	N=
First Mentions							
	Main Character	33.33	66.67	0.00	0.00	0.00	3
	Secondary Animate Character	36.21	41.38	10.34	1.72	10.34	58
	Secondary Inanimate Referent	42.51	35.33	16.77	3.59	1.80	167
	Total	40.79	37.28	14.91	3.07	3.95	228
Subsequent Mentions							
	Main Character	21.74	65.22	13.04	0.00	0.00	23
	Secondary Animate Character	27.63	39.47	21.05	2.63	9.21	76
	Secondary Inanimate Referent	20.11	53.80	16.85	3.26	5.98	184
	Total	22.26	50.88	17.67	2.83	6.36	283
Total		**30.53**	**44.81**	**16.44**	**2.94**	**5.28**	**511**

Syntactic function (Table 1) also affected the children's use of referring expressions. As the subject, the children tended to use third-person pronouns (72.23%)

and also, but to a much lesser extent, demonstrative pronouns (9.08%) and dislocations (6.86%); note that a large majority of these last two types of referring expressions were subjects (80 out of 104 occurrences for demonstrative pronouns and 61 out of 72 for dislocations). As the object, nouns in post-verbal position were the most prevalent (73.03%; see Example 3 below, Osc27, 29) and third-person pronouns in pre-verbal position represented slightly more than a quarter of the occurrences (20.75%). The other categories of referring expressions were rarely used. For other functions, we found many nouns (51.66%; more than a third of the occurrences were prepositional phrases or noun complements), some possessive determiners (23.48%), and some third-person pronouns (8.61%).

When looking at the *characteristics of the referent* (Table 1), the vast majority of references to the main character, who was present throughout the story, were third-person pronouns (74.97%; see Example 1 below, Jul101 and Jul103), followed, but to a much lesser extent, by possessive determiners (14.21%) for expressing an element in relation to the main character. Conversely, for secondary animate characters, in about one third of the cases the children used nouns (34.09%) and third-person pronouns (35.35%), and to a lesser extent, demonstrative pronouns (8.33%) and dislocations (6.82%). Concerning secondary inanimate referents, the children preferred nouns (62.87%; see Example 3 below, Osc27, 29) over third-person pronouns (11.75%). They also used demonstrative pronouns (11.75%), although fewer in number.

Finally, when considering the *age* factor (Table 1), we found a general profile: more third-person pronouns than nouns were found at ages 4 and 5 (see above, and "Total" row in Table 1), whereas comparable numbers in these two categories were observed at ages 6 and 7. For the other categories of referring expressions, we noted a few tendencies worth mentioning. Both demonstrative pronouns and null forms tended to decrease at age 7 as compared to the younger ages. The decreases occurred to the benefit of nouns, which therefore increased between ages 4 and 7. The virtual absence of null forms at age 7 is not surprising, since these are generally produced by younger children (see Chapter 3, da Silva-Genest et al., 2021). Dislocations remained relatively constant across the different ages.

In sum, all of the factors studied – position in the referential chain and syntactic function, the characteristics of the referent, and the child's age – had an impact on the use of referring expressions. The question raised, then, is whether certain factors carry more weight than others in these variations. To answer this question, we will look first at each factor individually and then consider all of the factors together. Given that nouns and third-person pronouns, as we have seen on several occasions, are the two most prevalent types of referring expressions, we will limit our analysis to these two categories.

3.2 Use of third-person pronouns and nouns

A mixed-effect logistic regression was used to answer to our research question. The two outcome variables were binary. The first targeted third-person pronouns and was scored 1 if a third-person pronoun was used, and 0 in all other cases; the second targeted nouns, scored 1 if a noun was used and 0 if not. The initial model included the five fixed-effect factors described above (position in the referential chain, syntactic function, the referent's characteristics, and age of the child), along with two random-effect variables to control for the participant (the child's identity) and the item (the referent). For the factors "position in the referential chain" and "syntactic function", only the most relevant cases were included in the model. For this reason, only referring expressions in first or subsequent mentions (not in reactivations) with a subject or direct-object function were analyzed. The referent's caracteristics variable was a three level variable including: main character, secondary animate characters and secondary inanimate referents.

The partition trees presented in Figures 1 and 2 show only those factors that were significant in the models. The factors are represented as nodes. The higher a node is in the tree, the greater its weight in the use of referring expressions, which in this case means third-person pronouns and nouns. The histograms under the nodes indicate the weight of the referring expression in question with respect to that of all other referring expressions. We can see from these two figures that nouns and third-person pronouns were used differently.

3.2.1 Factors of variation in the use of third-person pronouns

The model (see Table 3) shows that the position of the referring expression in the referential chain, its syntactic function, and the referent's characteristics were significant variables, whereas age (in months) was not. The model obtained a *C*-value[4] of 0.89, indicating that it is very robust.

4. The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong.

Table 3. Regression tables for clitic and strong third-person pronouns and nouns

	Fixed Effects	Est.*	S.E.	z	p	Random Effects	Var.	S.D.
3PP**								
	Intercept	-0.03	0.61	-0.056	0.955			
	Referential-chain position (Subsequent Mention)†	1.55	0.27	5.801	<.001	Participant	0.131	0.362
	Age (months)	-0.00	0.01	-0.335	0.738			
	Referent characteristics (Secondary Inanimate Referent)	-3.12	0.22	-13.954	<.001			
	Referent characteristics (Secondary Animate Character)	-2.18	0.20	-10.955	<.001			
	Syntactic function (Subject)	1.11	0.22	5.014	<.001			
Nouns***								
	Intercept	-1.20	0.80	-1.499	0.134			
	Referential-chain position (Subsequent Mention)	-1.77	0.27	-6.533	<.001	Participant	0.146	0.382
	Age (months)	0.02	0.01	1.834	0.067			
	Referent characteristics (Secondary Inanimate Referent)	2.88	0.41	6.938	<.001			
	Referent characteristics (Secondary Animate Character)	2.66	0.42	6.285	<.001			
	Syntactic function (Subject)	-3.25	0.26	-12.453	<.001			

* Est.: Estimate; S.E.: standard error; Var.: Variance; S.D.: standard deviation

** 3PP: Clitic and strong third-person pronouns, Number of obs: 1194, grouping factors: Participant: 30, *C*-value: 0.89. Only the model with the Main Character as the intercept is presented here. The model using Secondary Inanimate Referent as the intercept shows that there is a significant difference between Secondary Inanimate Referent and Secondary Animate Character ($z = 4.4840$, $p < .001$)

*** Nouns: Number of obs: 1194, grouping factors: Participants: 30; *C*-value: 0.95. Only the model with the Main Character as the intercept is presented here. The model using Secondary Inanimate Referent as the intercept shows that there is a significant difference between Secondary Inanimate Referents and Secondary Animate Character (z=−1.066, $p = .2864$)

† In Table 3, the category in parentheses on fixed-effect rows indicates the category compared to the intercept (reference level). For binomial factors, the reference level is the other factor, for multilevel factors, the reference level is the level not appearing on any row of the table.

In order to better understand the model, we drew a partition tree (Figure 1) and conducted qualitative analyses.

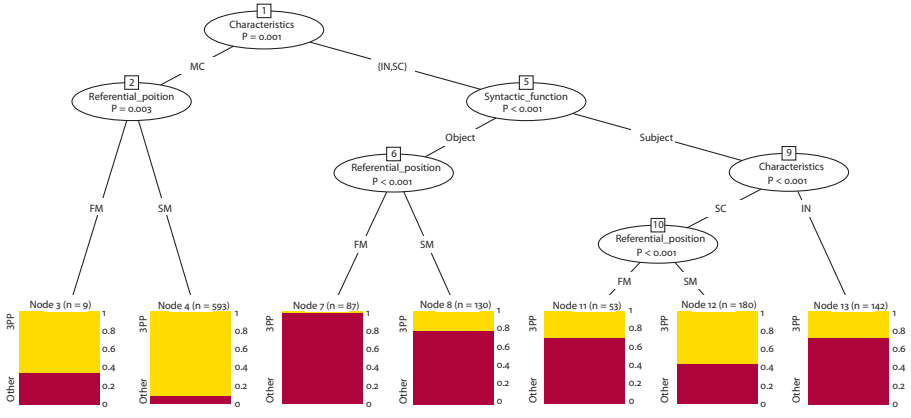

Figure 1. Binary partition tree for clitic and strong third-person pronouns

Note: 3PP: clitic and strong third-person pronouns, FM: first mentions, SM: subsequent mentions, MC: main character, SR: secondary animate referents, IN: secondary inanimate referent. Yellow indicates the odds of observing a clitic and strong third-person pronoun in a given context. Red indicates the odds of observing another form than a clitic and strong third-person pronoun in the same given context.

The analyses showed that for third-person pronouns, the main character status was the factor that had the greatest impact on the use of this type of referring expression (left branch of Figure 1). In the main character branch (see Example 1), the position in the referential chain was the second factor – the children produced more third-person pronouns in subsequent mentions than in first mentions (two histograms on the left). The syntactic function of the referring expression encoding the main character had no impact on pronoun use.

(1) Julie2,[5] 3;11

Mot165	et il se baigne.	'and he's going swimming.'
	"c'est agréable je me baigne" <=!	'it's nice, I'm swimming.' <=!
	parlant au nom de MC>. =	talking for the pig>. =
	((pointe MC)	((points to MC))
Jul101	un chien ***lui*** vole ses habits.	'a dog steals his clothes from ***him***.'
Mot166	le chien lui vole ses habits.	'the dog steals his clothes from him.'
	ah il va être tout nu.	'ah he's going to be all naked.'
	tu crois qu'il va pouvoir sortir de l'eau?	'do you think he'll be able to get out of the water?'

5. In the examples, captions indicate the name of the child, his/her age (years; months); the first three letters of the child's first name are given (e.g. Jul for Julie). Mot stands for mother. An approximate English translation is given between inverted commas. For more details on transcription conventions, see Appendix II.

Jul102	non pas tout nu.	'no, not all naked.'
Mot167	pas tout nu.	'not all naked.'
Jul103	sinon ***il*** peut se rhabiller.	'if not ***he*** can get dressed again.'

In Example 1, the child refers to the main character using third-person pronouns: the pronoun *il* ('*he*') (Jul103) in the subject function, and the pronoun *lui* ('*him*') (Jul101) in a function other than subject. Pronouns were most often produced to refer to the main character in subsequent mentions, but without being attributed a particular syntactic function.

In cases where the referent was not the main character but a secondary animate or inanimate referent (right branch of Figure 1), the syntactic function of the referring expression combined with another factor (the position in the referential chain or the referent's animacy) affected the children's use of third-person pronouns to varying degrees. When the referring expression was in a subject function and the referent was animate, third-person pronouns were used more frequently by the children than in secondary inanimate referents. This was more often the case for subsequent mentions relative to first mentions. In the rare cases where one of those referents was introduced by a clitic third-person pronoun, it was often accompanied by pointing (Example 2) or corresponded to a group of characters already identified individually (Example 3).

In Example 2, the child is referring to the dog who just stole the main character's clothes (Osc43). He uses the third-person pronoun *il* ('*it*') to introduce the dog while pointing to the picture of the dog. So there is no ambiguity as to which referent is at stake.

(2) Oscar, 5;7

Osc42	et i(l) s(e) déshabille pour aller dans la mare. = ((pointe le lac))	'and he gets undressed to go into the lake.' = (points to the lake))
Mot43	((mère tourne la page))	((mother turns the page))
Osc43	là ***il*** a pris ses habits. = ((***pointe le chien***))	'here ***it*** took his clothes.' = ((***points to the dog***))

In Example 3, the mother refers to the main character with the third-person pronoun *il* ('*he*'), and to the pigs in the caravan with the third-person pronoun *les* ('*them*'). The child (Jam154) refers to the group of pigs, as he points to them, using the third-person pronoun *ils* ('*they*'). The pointing, the third-person pronoun used, and the reflexive form removes all doubt about which referent is at stake.

(3) James, 4;6

Mot184	et là il les retrouve en fait. = ((pointe l'image))	'and here, he meets up with them again in fact.' = ((points to the picture))
Jam154	ah oui ***ils*** s(e) retrouvent! = ((***pointe le groupe de cochons***))	'ah yes ***they*** meet up again !'= ((***points to the group of pigs***))

In Example 4, the two secondary animate characters mentioned are introduced by the child (Sop63) with the NP *deux personnes* ('*two people*') and are then referred to again with the third-person plural pronoun *ils* ('*they*') (Sop65).

(4) Sophie, 7;2

Sop63	et là y a ***deux personnes*** qui sortent. = ((pointe l'image))	'and here there are ***two people*** who are leaving.' = ((points to the picture))
[…]		
Mot68	et ils sortent parce regarde là y a marqué = ((pointe l'affiche))	'and they're leaving because there it says' = ((points to the sign))
[…]		
Mot69	ils sortent du concert	'they're leaving the concert'
[…]		
Mot69	et les gens ils le regardent. = ((pointe l'image)) et les cochons là qu'est-ce qu'ils font?	'and the people, they're looking at him.'= ((points to the picture)) 'and the pigs there, what are they doing?'
Sop65	***ils*** sont étonnés. ***ils*** le regardent comme ça avec un sourire.	'***they*** are surprised.' '***they*** are looking at him like that with a smile.'

When a referring expression was found in a object function, the position in the referential chain had an impact. Third-person pronouns were almost never used in first mentions and rarely in subsequent mentions. In this case, other referring expressions were employed.

A noun was generally used to introduce a secondary animate character (Examples 1 – Jul101 – and 4) or a secondary inanimate referent (Example 5).

In Example 5, the child uses a noun or a noun dislocation to refer to the tent, both in a first mention to introduce the inanimate object (Osc22) and in subsequent mentions to maintain the reference (Osc27, 28, 29 and 32).

(5) Oscar, 5;7

Osc22	et là i(l) s(e) met à construire ***une tente***. = ((pointe le cochon))	'and here he starts to build ***a tent***.' = ((points to the pig)
[…]		
Osc27	***ça*** va casser ***la tente***.	'***it***'s going to break, ***the tent***.'
Osc28	***la tente*** elle / ***elle*** s'est envolée.	'***the tent***, ***it*** blew away.'
[…]		
Osc29	le cochon i(l) monte rattraper euh ***la tente*** . = ((pointe le cochon et ensuite la tente))	'the pig he's going up to grab uh ***the tent***.' = ((points to the pig and then the tent))
[…]		

Mot30	il essaie d'attraper ***la tente*** alors qu'i(l) y a le +/. = ((pointe le cochon et ensuite la tente))	'he's trying to grab ***the tent*** when there's the +/.' = ((points to the pig and then the tent))
[…]		
Osc32	i(l) va tomber avec ***la tente***.	'he's going to fall with ***the tent***.'

In sum, our analyses aimed at gaining insight into the use of third-person pronouns showed that, except for age, all of the factors studied (i.e., the position of the referring expression in the referential chain and its syntactic function, and the referent's characteristics) were significant. Referent status (main vs. secondary) turned out to have the greatest impact on the use of this type of referring expression (first binomial split): referring to the main character was most often encoded by a third-person pronoun, especially in subsequent mentions. For secondary referents, syntactic function (subject vs. object), coupled with another factor (position in the referential chain and referent's characteristics), played a major role.

3.2.2 *Factors of variation in the use of nouns*

The model (see Table 3 above) indicates that the position in the referential chain, the syntactic function, the referent's characteristics, and the child's age (in months), were all significant variables affecting the use of nouns. The model is very robust (*C*-value: 0.95). In order to better understand these findings, we generated a partition tree (Figure 2) and conducted qualitative analyses.

The analyses showed that the syntactic function was the most influential factor: Overall, the children used more nouns to express *objects* than to express *subjects*. As a reminder, only the two most frequent cases, subjects and express objects were included in the model.

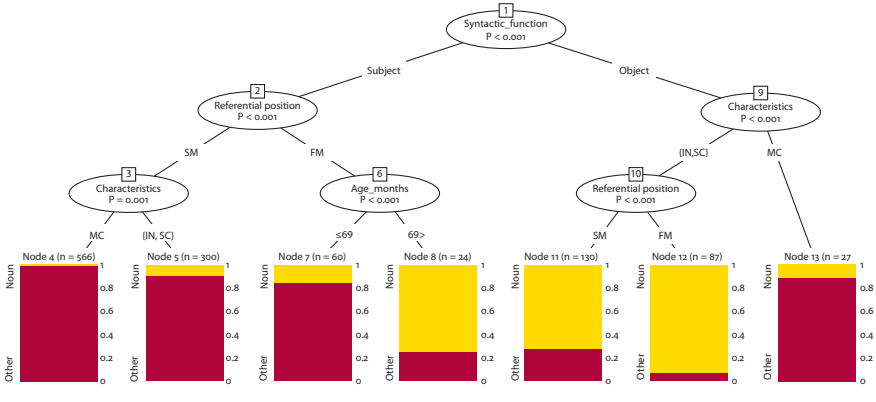

Figure 2. Binary partition tree for nouns

Note: FM: first mentions, SM: subsequent mentions, MC: main character, SR: secondary animate referent, IN: secondary inanimate referent. Yellow indicates the odds of observing a noun in a given context. Red indicates the odds of observing another form than a noun in the same given context.

When the referring expression took on the *object* function (right branch of Figure 2), referents' characteristics turned out to be the second factor. The children produced more nouns to mention a secondary referent (an animate character or an inanimate referent) than to mention the main character. The main character was designated by referring expressions other than nouns (see the first histograms on the left and the last on the right), and in particular by the clitic third-person pronoun *le* ('*him*'), as in Example 6.

(6) Manon, 7;3

Man14	un lapin ***le*** regardait.	'a rabbit was looking at ***him***.'
	= ((tourne la page))	= ((turns the page))

In addition, for objects, when the referent was secondary, the position in the referential chain had an impact on noun use. If the referring expression was in subsequent mention position, the probability of it being a noun was high, whatever the child's age (Example 7).

(7) Oscar, 5;7

Osc22	oui il a planté sa ***tente*** = ((tape la tente avec son doigt))	'yes, he put up his ***tent*** '= ((taps the tent with his finger))

When the referring expression was in first mention position, the children almost always chose a noun, whether for a secondary inanimate referent (Example 8) or a secondary animate character (Examples 9 and 10).

(8) Arnaud, 7;5

Arn24	et là i(l) s(e) met à construire ***une tente***. ((pointe le cochon))	'and here he starts to build ***a tent***.'= ((points to the pig))

(9) Anaïs, 4;4

Ana74	il va [/]il va aller voir **le directeur**.	'he's going to, he's going to go see **the boss**.'

(10) Simon, 5;6

Sim99	et après il retrouve **sa maman**.	'and then he meets back up with **his mom**.'

When the referent was in the *subject* function (left branch of Figure 2) and used as the first mention of a referent (first split), the referent's primacy had no impact, but age did. Children older than 5;9 years (69 months) used more nouns than their younger peers. The older children mainly used nouns in first mentions, either post-verbally in a cleft construction like *il y a un … qui* ('*there is a … who*') or in presentative constructions such as *il était une fois* (literally, '*it was a time*', meaning '*once upon a time*') (Example 11).

(11) Damien, 7;4

Dam5	il était une fois ***trois petits cochons*** qui: étaient {qui part}. = ((acquiesçant de la tête))	'once upon a time there were ***three little pigs*** who were {who is leaving}.' = ((nodding his head))

On the other hand, nouns were employed far less often by the younger children. This can be explained by the fact that, at this age, children introduce very few referents; it is essentially the mothers who produce first mentions (see Chapter 8, Hassan et al., 2021).

When the subject was the subject in a subsequent mention, a noun was almost never used to mention the main character, regardless of the child's age. Few nouns were observed as subsequent mentions of secondary inanimate referents or secondary animate characters. In this position, a pronoun was generally used to refer to characters.

In sum, the analyses aimed at exploring noun use showed that all factors examined (i.e., the position in the referential chain, the syntactic function, the referent's characteritsics, and the child's age) had a significant impact. Contrary to what was observed for third-person pronouns, syntactic function (subject vs. object) turned out to define the first binomial split – nouns were usually used in the object function. However, the referent's characteristics, the position of the referring expression in the referential chain, and the child's age modulated this overall difference. While the use of a noun for the main character was rare even in the object function, nouns were very frequent in first mentions of secondary referents (animate characters and inanimate referents) starting at a given age (3;11 for objects and 5;9 for subjects). In subsequent mentions, nouns fulfilling the object function were used at all ages for secondary referents. In contrast, nouns acting as the subject were seldom used, regardless of primacy or age.

4. Discussion

This study was aimed at deepening our understanding of how referring expressions are used by children between the ages of 4 and 7 years in a situation of dialogical storytelling with their mother. We began by tallying the referring expressions actually used by the children. Next we attempted to show how these uses varied as a function of several relevant factors. Lastly, we studied the relative importance of these factors, while focusing on the production of nouns and third-person pronouns.

Our analysis of the referring expressions used by the children confirmed the importance of nouns and third-person pronouns, which alone accounted for

nearly three-quarters of the occurrences. The high prevalence of nouns and third-person pronouns was expected and aligns with our previous conclusions (Salazar Orvig & de Weck, 2013; Vinel, 2014). Concerning the four factors taken into account in this study, we found very similar tendencies to those described in other studies on narratives, whether monological or dialogical. Below, we briefly summarize our findings.

4.1 Effects of the various factors

As a whole, both for third-person pronouns (third-person pronouns vs. all other referring expressions) and nouns (nouns vs. all other referring expressions), the factors affecting the use of referring expressions were its position in the referential chain and its syntactic function, and the referent's characteristics. Concerning the role of position, our data are in line with the results of a large body of literature (Akinci, 2012; Bamberg, 1987; de Weck, 1991; Hickmann, 2003; Karmiloff & Karmiloff-Smith, 2001; Kern, 2002) showing that the vast majority of referring expressions in first mentions are noun phrases, often indefinite, and the vast majority of referring expressions in subsequent mentions are third-person pronouns.

Concerning syntactic function, referring expressions acting as the subject were mostly pronouns (third-person and demonstrative), whereas those acting as objects were mostly post-verbal nouns. The prevalence of third-person pronouns as subjects aligns with the results of other studies (both in French and in English) on storytelling in monological (Jisa, 2000; Jisa & Kern, 1998; Karmiloff-Smith, 1985, 2003) or dialogical situations (Allen, Skarabela & Hughes, 2008; Salazar Orvig & de Weck, 2013).

The referent's characteristics also triggered variations in the use of referring expressions by the children. Namely, third-person pronouns were chosen for the main character, whereas nouns were used for secondary referents, as other authors have shown (de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985, 2003). Third-person pronouns were also preferred for mentioning animate referents, while nouns were usually used for inanimate ones. These findings are consistent with the literature (e.g., Fukumura & van Gompel (2011) for adults, and de Weck & Salazar Orvig (2014) and Vinel (2014) for children). Notably, the latter authors found that when referring to a secondary referent in subsequent mentions, the children used third-person pronouns the most.

Lastly, we found age-related differences between the 4- to 5-year-olds and the 6- to 7-year-olds. The older group used more nouns than did the younger group, as observed by a number of authors (Akinci, 2012; de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985; Kern, 2002), in such a way that nouns and pronouns occurred in closer proportions at age 6–7. Similarly, certain referring expressions

(in particular, demonstrative pronouns and null forms) practically disappeared at age 7. However, the binomial logistic regressions showed that once other factors were controlled, age was a significant factor for nouns but not for third-person pronouns. This could indicate that by the age of four, children have already acquired the usage conventions of older children and are sensitive to constraints of different levels that vary according to the referent's characteristics (animacy and primacy) and the position of the referring expression in the referential chain and its syntactic function. It could also indicate that the observed age-related variations are linked to the frequency of production of contexts requiring a noun (or a third-person pronoun), rather than depending solely on age. Finally, the role of the mother and of shared knowledge may have an impact on the use of referring expressions. Indeed, in monological narratives, children have to tell a story in an autonomous way whereas they can count on their mothers' scaffolding during joint storytelling.

These results bring us to the second part of the discussion, which deals with the relative importance of the different factors in the use of nouns and third-person pronouns. More specifically, at any given point in the discourse, is the child's choice to use a noun or a third-person pronoun simultaneously influenced by its position in the referential chain, its syntactic function, the referent's characteristics (primacy and animacy), and the child's age?

4.2 Factor interdependence

In order to better understand how these factors are interconnected, we generated partition trees using only those variables shown to be significant in the mixed-model regressions. The trees brought out different patterns for nouns and third-person pronouns. For third-person pronouns, the first factor was the referent's characteristics, as the main character; the second was the position of the referring expression in the referential chain (subsequent mention). Animate referents in subsequent mentions triggered the frequent use of third-person pronouns – when the children were referring to the main character or a secondary animate character in subsequent mentions, they very often used a third-person pronoun. This finding is in line with those of Bamberg (1987), Colozzo and Whitely (2015), and de Weck (1991). However, referent animacy was not an important factor in first mentions – when secondary referents were introduced, pronoun use was affected more by syntactic function (subject vs. direct object) than by animacy.

For nouns, the syntactic function of the referring expression and the referent's characteristics turned out to carry the most weight – a noun was frequently used in the object function to mention a secondary referent, animate or inanimate.

This is consistent with earlier findings (de Weck & Salazar Orvig, 2014; Vinel, 2014). According to Fukumura and van Gompel (2011), secondary referents, not only animate but especially inanimate ones, are less accessible than main referents, which makes using a noun more relevant than using a pronoun. The position in the referential chain, which was age-related here, also seems to influence the use of a noun. In short, age played a major role in noun use. It was particularly relevant in first mentions of referents in the subject function, where children under age 5;9 (69 months) used more nouns than those under 69 months, who employed nouns only on a few rare occasions.

These results partially validate our hypotheses and align with those obtained in the literature. However, while the position in the discourse appears to be a key factor in the choice of a referring expression, it seems to be subordinate to syntactic function (in the case of nouns) and subordinate to the referent's characteristics for third-person pronouns. Lastly, the differences between the results obtained for nouns and third-person pronouns may mean that the choice of a referring expression depends above all on the shared general constraints that govern their use: all four factors were significant for nouns and third-person pronouns. The relative importance of each of these factors may nonetheless be specific to one or the other (i.e., different organizations for nouns and third-person pronouns).

These complex interrelations between age and the other factors opens up several avenues worth consideration in future research.

4.3 Further perspectives

The results reported in this chapter corroborate those found in the literature on the factors affecting young children's use of referring expressions. In particular, this study confirmed the importance of four factors in the use of a noun or a third-person pronoun. It also allowed us to rank these four factors. Interestingly, the ranking was not the same for nouns and third-person pronouns. Our multifactorial analysis also shed some new light on the role of the child's age, at least in a dialogical context in which the mother and the child are telling a story together with the same book.

The findings of the present study provide insight into the inconsistency of the results obtained in two types of studies: observational studies based on dialogical/interactional data, and studies in which children are asked to tell a story to an experimenter. We can speculate that the variables at play in the production of referential expressions are the same in both contexts, but the presence of an adult telling the story with the child may facilitate it. Several chapters of this book argue in favor of this idea. It would be useful in the future to conduct research aimed at

confirming this hypothesis by comparing the productions of the same children during monological narrative and dialogical narrative with an adult.

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CHAPTER 5

Referring expressions and developmental language disorders

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This study investigated the relation between morphosyntactic and discourse-pragmatic features in the production of referential expressions by French-speaking children with developmental language disorders (DLD) as compared to their typically developing peers (TD). Fifteen TD children and 15 children with DLD, age 4;6 to 7;5 were asked to tell a picture-book story with their mother. The type of referring expression, the position in the referential chain, and the syntactic function were coded. Both groups of children were sensitive to discourse and syntax. Children with DLD differed from their peers in the use of object clitic pronouns in subsequent mentions, the proportion of nouns produced without a determiner, and null subjects. Null subjects only appeared in a particular discursive and pragmatic context.

Keywords: developmental language disorders, clitic pronouns, nouns, discourse, morphosyntax

1. Introduction

Most studies describing French-speaking children with a Developmental Language Disorder (DLD, Bishop, Snowling, Thompson, Greenhalgh, & The CATALISE-2 consortium, 2017; also called Primary Language Impairment or Specific Language Impairement, SLI) have found evidence of phonological and morphosyntactic difficulties in these children (Hamann et al., 2003; Jakubowicz, 2003; Jakubowicz, Nash, Rigault, & Gérard, 1998; Jakubowicz & Tuller, 2009; Paradis & Crago, 2001; Royle & Thordardottir, 2008, Royle & Stine, 2013; Thordardottir & Namazi, 2007).

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While complex linguistic forms (e.g., verbs) are often noted as clinical markers of a specific language impairment (Prigent, Parisse, Leclercq, & Maillart, 2015), very few studies have systematically explored discursive and pragmatic difficulties in these children (de Weck & Jullien, 2013; de Weck & Rosat, 2003).

Studies that take a grammatical approach to describing this syndrome have identified certain specific morphosyntactic features as potential clinical markers of DLD in different languages (Bortolini et al., 2006; Bortolini, Caselli, Deevy, & Leonard, 2002; Fletcher, 2009; Kunnari et al., 2011; Leonard, 2013). Research on French DLD has noted relative clauses (Delage, Monjauze, Hamann, & Tuller, 2008; Hamann, Tuller, Monjauze, Delage, & Henry, 2007) and verb morphology (Jakubowicz, 2003; Jakubowicz & Nash, 2001; Paradis & Crago, 2001; Royle & Thordardottir, 2008) as potential DLD markers. Paradis and Crago (2001) pointed out that verbal morphology in French-speaking children with DLD was characterized by a large number of unmarked verbal forms, and Jackubowicz (2003) observed that past tense verbs were avoided by children with DLD. Object clitic pronouns were also identified as vulnerable aspects in children with DLD, in both French (Grüter, 2005; Jakubowicz, 2003; Jakubowicz et al., 1998; Jakubowicz & Tuller, 2009; Tuller, Delage, Monjauze, Piller, & Barthez, 2011) and English (Schelletter & Leinonen, 2003). In an elicitation task in French, the use of a null form when an object clitic pronoun was expected was more frequent in children with DLD than in typically developing children (TD) (Grüter, 2005; Jakubowicz et al., 1998). More generally, although object clitic pronouns are often avoided by TD children (Van der Velde, 2003), children with DLD display delayed acquisition of object clitic pronouns relative to subject clitic pronouns in comparison to TD children (Hamann et al., 2003; Jakubowicz et al., 1998; Paradis, Crago, Genesee & Rice, 2003). However, Hamann et al. (2003) observed a similar but delayed development in subject use for French-speaking children with DLD. In contrast, children with DLD tend to produce a larger number of lexical noun phrases than do TD children (Salazar Orvig & de Weck, 2013; Schelletter & Leinonen, 2003).

The socio-pragmatic nature of the task might also have an effect on morphosyntactic difficulties or resources. Verb and clitic-related difficulties seem to be more important in studies using elicitation tasks than in those focusing on social interaction. For instance, in a free-play activity Thordardottir and Namazi (2007) found no significant differences between DLD and TD children in using the accurate verb form and unexpected null forms with an object or subject function. Moreover, the rate of unexpected null forms in object position was negligible for both groups in this same context. A similar difference between data from elicited productions and productions during social interaction also was found for NPs without a determiner (Royle & Stine, 2013). Thordardottir and Namazi (2007) explained this discrepancy as a possible task effect or age effect. The children

performing the elicitation tasks were generally older (e.g., schoolchildren) than those who participated in Thordardottir and Namazi's study (preschoolers). However, Hamann and her colleagues (2003), who also studied a conversational sample, found that morphological errors decreased with age.

This discrepancy might be related to the different discourse-pragmatic conditions in the two settings. Although both studies explored a conversational sample, the context might have been different in the two studies. Thordardottir and Namazi (2007) noted that their observations were made in a free-play activity with a limited set of toys, whereas Hamman et al. (2003) did not provide details on the context in which the data were collected. Discourse-pragmatic constraints might vary across activities and have an impact on the use of a particular type of referring expression such as a clitic pronoun (see Chapter 9, de Weck, Hassan, Heurdier, Klein, & Salagnac, 2021).

A series of studies in French (de Weck & Rosat, 2003; Salazar Orvig et al., 2010a, 2010b), Italian (Serratrice, 2005, 2008), or English (Hughes & Allen, 2013, 2015), have consistently indicated that typically developing young children's productions are influenced by discourse-pragmatic aspects (see Chapter 3, da Silva-Genest, Marcos, Salazar Orvig, Caët, & Heurdier, 2021, and Chapter 7, Marcos, Salazar Orvig, da Silva-Genest, & Heurdier, 2021). For instance, Allen, Hughes and Skarabela (2015) and Hughes and Allen (2013, 2015) showed that the realization of the subject argument is dependent on the accessibility of the referent, highly accessible referents being more likely to be referred to with a null form than less accessible referents. In these studies, children showed earlier mastery of the referential process (2;5 to 3 years of age) in dialogical free-play activities (Salazar Orvig et al., 2010a, 2010b) than in studies based on monological storytelling (de Weck, 1991; Hickmann, 2003; Karmiloff-Smith, 1985).

For children with DLD, discourse studies have mostly looked at narratives for exploring referent first mentions and maintenance of reference. This body of literature indicates that children with DLD produce more ambiguous and less suitable referring expressions than same-age TD children, both when mentioning a referent for the first time (first mentions) in a discourse (Schelletter & Leinonen, 2003; Schneider & Hayward, 2010) and when maintaining a referent (Paul, Hernandez, Taylor, & Johnson, 1996). With regard to first mentions, Schneider and Hayward (2010) observed a lower referential-cohesion score for English-speaking 4- to 8-year-old children with DLD than for TD children. In English, Schelleter and Leinonen (2003) found that children with DLD produced more pronouns than did TD children when mentioning referents for the first time. In French, de Weck and Rosat (2003) showed that 4- to 6-year-old children with DLD made fewer first-mention referents in narratives and produced more unsuitable forms such as definite NPs when the interlocutor did not know the story. However, de Weck

and Jullien (2013) observed that both children with and children without DLD in French produced more lexical NPs than pronouns in first mentions. They also found that the DLD group used more null or undefined forms (de Weck & Jullien, 2013: 75; '*[e] pouss{er/é}, [e] push/to push/pushed*', Pau, DLD, 7;5 years old) as first mention, as compared to their typically developing peers. Such findings may also vary according to story complexity (Botting, 2002). For example, Strong (1998) showed that incoherent first mentions increased with the number of characters in the story. Studies analyzing English- or French-speaking children with DLD have also noted that these children produce more ambiguous maintenance forms than typical children (see Liles, 1985; Paul et al., 1996, for English; de Weck, 2004a, 2004b for French) and also more unexpected forms such as indefinite determiners and ambiguous pronouns (de Weck & Rosat, 2003).

In summary, research indicates that children with DLD exhibit both morphosyntactic difficulties (i.e., clitic pronouns in French) and discourse difficulties when producing monological narratives or performing elicitation tasks. However, morphosyntactic difficulties (e.g., null subjects or objects, and nouns without a determiner) seem to be greater in studies that have used elicitation tasks than in those using observational designs for data collection (Thordadottir & Namazi, 2007; Royle & Stine, 2013). Research has also shown that discourse-pragmatic features influence the use of referring expressions (see de Weck & Jullien, 2013; Salazar Orvig et al., 2010a, 2010b; see also Chapter 9, de Weck et al., 2021). Taking into account discourse-pragmatic features such as the position in the referential chain could provide insight into this discrepancy between activities. To the best of our knowledge, few studies have explored the relationship between morphosyntactic and discourse-pragmatic features. Schaeffer (2003) showed that, unlike TD children under age 3, Dutch-speaking children with DLD ages 4 to 8 years, presented difficulties in morphosyntactic domains that are grammatical only (such as determiner dropping) but did not exhibit difficulties in domains of syntax that are linked to pragmatic principles (such as Dutch object scrambling). In French, de Weck and Jullien (2013) investigated the relationship between morphosyntactic and discourse-pragmatic features during monological storytelling (see above). In a preliminary study with a smaller number of participants, Salazar Orvig and de Weck (2013) pointed out the contrast between morphosyntactic and discursive domains in children with DLD during a joint storytelling activity with their mother: on one hand these children tended to make grammatical errors (of gender or form omissions), as mentioned in the literature (see above), and to have a small number of forms at their disposal; on the other hand they were able to correctly use clitic personal pronouns in accordance with their position in the referential chain (such pronouns were preferred in subsequent mentions and were very rare in first mentions).

The present chapter further explores the use of referential expressions by children with and without DLD during mother-child interactions. Our two main goals are: (a) to compare the referring expressions produced by children with and without DLD to mention for the first time, maintain, and reactivate referents during a mother-child interaction; and (b) to explore, in a dialogical setting, two controversial features of French DLD – noun phrases without determiners and null subjects – and the role of their position in the referential chain.

Regarding the first goal, we hypothesized that although all children are sensitive to discursive features (i.e., position in the referential chain), the two groups of children will differ on the discursive use of noun phrases and pronouns, particularly for clitic ones. In line with Schelleter and Leinonen (2003) and Salazar Orvig and de Weck (2013), we expected children with DLD to have a higher ratio of noun phrases to pronouns than their typically developing peers, across the various positions in the referential chain. Regarding the second goal, we expected children with DLD to use more noun phrases without determiners, and null subjects than TD children. Also, we expected this phenomenon to be influenced by discursive features, here, the position in the referential chain (i.e., first mention, subsequent mention, and reactivation). For both groups, null subjects should occur in referent maintenance, while full referential expressions should be produced in first mentions.

2. Method

This study used a between-group design at one testing time. Groups were matched child-by-child according to chronological age (a difference of at most one month was tolerated) and sex.

2.1 Participants

Thirty French-speaking mother-child dyads living in the French-speaking part of Switzerland or in France were studied. The sample[1] included 15 TD children (10 boys and 5 girls) and 15 children with DLD (10 boys and 5 girls). The children in both groups were 4;6 to 7;5 years of age. All children with DLD were referred by experienced speech-language therapists as presenting a phonological-syntactic syndrome. No hearing, motor, cognitive, or affective disorder was reported for any child who participated in the study. All children were pre-tested for language

1. The data were drawn from the Mother-Child Interaction corpus (see Appendix I for more details).

production and comprehension (N-EEL, Chevrie-Muller & Plaza, 2001). The preschool children were evaluated on 13 scores and the elementary school children, on 17 scores. Children with DLD obtained scores 1.5 standard deviations (SD) below the mean on at least 8 scores out of 13 (12 out of 17 for the children enrolled in elementary school) and no more than 3 scores were less than one standard deviation below the mean (no more than 4 scores for the elementary school). TD children obtained scores near to or above the mean (with a tolerance of 4 scores one SD below the mean).

2.2 Procedure

The mother and child were asked to tell together a story presented in a picture book with no text, *Ah les belles vacances des petits cochons!*.[2] The only instructions they received were: "Just tell the story together as you're used to doing and take your time". All interactions were audio- and video-taped and transcribed (see Appendix II), taking into account the verbal and non-verbal contributions of the dyads. The interactions were analyzed in full from the beginning to the end of the story.

2.3 Coding

All expressions referring to characters and objects in the story were identified. This included the main character, 18 secondary animal characters, and 45 inanimate referents appearing in the picture book.

2.3.1 *Type of referring expressions*

The referring expressions were coded as noun phrases (NPs), clitic pronouns, demonstrative pronouns, dislocations (both pronoun-pronoun and noun-pronoun dislocations), null forms (zero anaphora, omissions and implicit referents with or without pointing), and other pronouns (in particular, strong and relative pronouns). Interactions were coded by a first coder and 100% of the coding was reviewed by a second coder. Discrepancies were resolved through discussion between coders. To further ensure coding stability, 10% of each interaction was recoded (blind to the original coding). Interrater agreement was 96.08% (n = 153) and Cohen's kappa was 0.93. Nouns, simple or dislocated, were further identified as NPs with a determiner, NPs without a determiner in a context in which a determiner was expected (see

2. Goodall, J.S. (1980). *Ah les belles vacances des petits cochons!* Paris: Gallimard. Original edition: *Paddy Pork's Holidays*. Macmillan Children's Books (1975). See summary in Appendix III-A.

Example 1), or NPs without a determiner in a context where one was not expected (e.g., proper nouns). Interrater reliability was 100% (n = 73).

(1) Samuel, DLD, 4;9[3]

Sam109	***NULL cochon***	***'NULL pig***
	i va tomber	will fall down
	su(r) l(e) t(r)ain.	on the train.'

2.3.2 *Position in the referential chain*

Referring expressions were categorized according to their position in the referential chain in the dialogue. First mentions were identified and subsequent mentions[4] of a referent were coded as "subsequent mentions" if they occurred within four speech turns, and as "reactivations" if beyond four speech turns with no mention of a referent (see Example 2 below). Interrater reliability reached 93.49% (n = 153) and Cohen's kappa was 0.87.

2.3.3 *Syntactic function*

Two syntactic functions (i.e., subject and direct object) were selected and identified in the data. The other cases were coded as "other" and not further analyzed. These two functions were the ones most likely to consistently appear in the children's productions, given their age and the fact that half of the participants had a language impairment. Interrater reliability was 98.04% (n = 153) and Cohen's kappa was 0.97.

3. Results

Based on the criteria presented above, 1335 referring expressions were identified and coded. 148 referring expressions (11.08% of the total) were excluded from the analyses because they were repetitions or unscorable cases. The final dataset was composed of 1187 referring expressions.

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3. In the examples, captions indicate the name of the child, his group (TD, DLD), his/her age (years; months); the first three letters of the child's first name are given (e.g., Sam for Samuel). Mot stands for mother. Non-adultlike forms were transcribed in phonetics (square brackets). NULL stands for null forms. An approximate English translation is given between inverted commas. For details on transcription conventions, see Appendix II.

4. Subsequent mentions occurred after either the child's or the mother's first mention of the referent.

Table 1. Type of referring expression, by population and position in the referential chain (group percentage)

		Nouns %	Disl* %	C3PP %	SDem %	NF %	OthP %	N =
Total	DLD	37.88	6.35	34.04	7.31	7.69	6.73	520
	TD	33.73	5.10	45.28	5.25	4.50	6.15	667
	Total	35.55	5.64	40.35	6.15	5.90	6.40	1187
First Mentions	DLD	72.64	6.60	4.72	1.89	6.60	7.55	106
	TD	83.57	2.14	2.14	2.86	6.43	2.86	140
	Total	78.86	4.07	3.25	2.44	6.50	4.88	246
Reactivations	DLD	50.00	10.71	17.86	3.57	7.14	10.71	56
	TD	36.00	18.00	24.00	10.00	4.00	8.00	50
	Total	43.40	14.15	20.75	6.60	5.66	9.43	106
Subsequent Mentions	DLD	25.70	5.59	45.25	9.50	8.10	5.87	358
	TD	18.87	4.61	60.17	5.45	3.98	6.92	477
	Total	21.80	5.03	53.77	7.19	5.75	6.47	835

* Disl: dislocations, C3PP: clitic personal pronouns, SDem: strong demonstrative pronouns, NF: null forms, OthP: other pronouns.

Table 1 summarizes the usage (proportions) of the types of referring expressions according to their position in the discourse (first mentions, subsequent mentions, or reactivations) and to the population (TD vs. DLD). The proportions were calculated based on the number of referring expressions that fit into a single category divided by the total number of referring expressions. The two groups of children had similar patterns regarding the types of referring expressions produced in these positions. Children predominantly used nouns as first mentions, and nouns and dislocations as reactivations, as presented in Example 2.

(2) Erwan, DLD, 6;3

Mot49	il est tout sale.	'he's all dirty'
Erw54	et et ***un renard*** {a pris le tee-shirt} :: = ((pointe l'image))	'and and ***a fox*** took the t-shirt' = ((points to the picture))
Mot50	((tourne la page)) alors là ben ça y est le train il s'arrête. = ((pointe l'image)) et puis il fait descendre le monsieur cochon. = ((pointe l'image)) qui est tout NOIR = ((pointe l'image)) / °tout SALE !°	((turns the page)) 'so there it is the train stops. = ((points)) and then he makes the Mister Pig get down. = ((points)) who is all BLACK = ((points)) / ° all DIRTY !°

Erw55	°((tourne la page))° et i(l) va	°((turns the page))° 'and he goes'
Mot51	et là :: = ((pointe l'image)) là c'est quoi là ?	'and there::= ((points to the picture)) what's there?'
Erw56	un train.	'a train.'
Mot52	et le train il s'en va. = ((pointe l'image))	'and the train it goes away.' = ((points))
Erw57	i(l) s'en va.	'it goes away.'
Mot53	tu vois? / et lui il reste là. = ((pointe l'image))	'see? / and him he stays here.'= ((points))
Erw58	***il*** est où ***le renard*** alors?	'***he*** *is where* ***the fox*** *then?*'

In Example 2, Erw54 first-mentioned a secondary animal character ("a fox") with a noun (*un renard*). As the mother continued talking about the main character, Erw58 produced a noun-pronoun dislocation (*il … le renard / 'he the fox'*) to reactivate the "fox", six turns after he mentioned it for the first time.

With regard to subsequent mentions, although both groups of children tended to use more clitic pronouns than other types of referring expressions, 60.17% of the referring expressions of the group of typically developing children were clitic pronouns whereas the percentage for the children with DLD was 45.25%. Because of the small number of occurrences produced by some children, Mann-Whitney tests were used to analyze the general use of referring expressions. The tests revealed only that typically developing children used significantly more clitic pronouns in this context than their peers with DLD ($U = 60.5$, $p = .031$). Other types of referring expressions were produced by both groups and included nouns, dislocations, demonstrative pronouns (see Example 3), other pronouns, and null forms.

(3) Jeremi, DLD, 5;10

Mot169	i part i court dehors si vite qu'i veut qu'i peut .	'he leaves he runs outside as fast as he wants as he can.'
Jer170	***qui ?***	'***who?***'
Mot170	c'est qui ça qui doit courir dehors ? = ((pointe le cochon qui court))	'who is that who has to run outside?' = ((points to the pig running))
Jer171	***celui-là*** l'auto (el)le était en panne .	'***that one*** the car it broke down.'
Mot171	non celui-là avec l'auto en panne il est ici = ((pointe le cochon qui avait l'auto en panne)) tu vois	'no that one with the broken down car it's here = ((points to the pig whose car was broken down)) you see'

In Example 3, Jer170 referred to the main character by an interrogative pronoun because he probably did not understand about whom his mother was talking in Mot169. In Jer171, he answered his mother and used a demonstrative pronoun to refer to another character.

3.1 Discursive and syntactic effects on the use of clitic pronouns

In order to better understand the observed difference between the two groups of children, a binary variable was created to further explore the use of clitic pronouns. The dependent variable was scored 1 for clitic pronouns and 0 for all other types of referring expressions (i.e., nouns, dislocations, demonstrative pronouns, and other pronouns). A binomial logistic mixed-effects regression analysis was conducted on this variable because this method allows one to assess various fixed effects (i.e., age in months, group, position in the referential chain, and syntactic function) and their interactions while controlling for the effect of individual variations (i.e., the participant) and item (i.e., the referent) by including the participant's ID and the item in the models as random factors. Because of the relatively small number of reactivations, only first mentions and subsequent mentions were taken into account for this analysis. Similarly, the two most frequent syntactic functions (i.e., subject and object) were further analyzed. The total number of occurrences analyzed was 706.

All the variables except the participant as a random effect variable and two interactions were included in the final model, obtained using the means of maximum-likelihood ratio tests to compare the models. As shown in Table 2, the regression indicated that age in months, position in the referential chain, and syntactic function significantly affected the use of clitic pronouns by children. The analysis also revealed that two interactions (i.e., Population × Position in the Referential Chain and Population × Syntactic Functions) significantly influenced the use of clitic pronouns. The *C*-value[5] was 0.92, indicating that the goodness-of-fit was strong (Hosmer, Lemeshow & Sturdivant, 2013).

In order to further understand these results, the data were analyzed using the binary-partitioning tree technique (Blom & Baayen, 2013).

The binary-partitioning tree (see Figure 1) indicated that the first node was the "position in the referential chain", that is, both groups of children used more clitic pronouns in subsequent mentions (SM) than in first mentions (FM). The FM branch was further divided on the basis of the "syntactic function". The small proportion of clitic pronouns used in first mentions was more likely to fulfill the subject function than the direct-object function. The first secondary node in the

5. The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong.

Table 2. Regression tables for clitic pronouns, nouns without a determiner, and null subjects

Fixed Effects	Est.*	S.E.	z	p	Random Effects	Var.	S.D.
Clitic Pronouns							
Intercept	-2.73	1.234	-2.215	.027	Referent	2.396	1.548
Age (months)	-0.04	0.011	-3.370	<.001			
Population (TD)**	1.53	1.246	1.227	.220			
Position in referential chain (Subsequent Mention)	1.63	0.659	2.469	.014			
Syntactic function (Subject)	3.78	0.841	4.501	<.001			
Population (TD) × Position referential chain (Subsequent Mention)	1.97	0.949	2.081	.037			
Population (TD) × Syntactic function (Subject)	-3.34	0.954	-3.501	<.001			
Nouns without a determiner							
Intercept	-3.655	0.722	-5.065	<.001	Referent	2.018	1.421
Population (TD)	-1.294	0.652	-1.985	.0471			
Null subjects							
Intercept	2.382	0.407	5.852	<.001	Participant	1.181	1.087
Population (TD)	1.525	0.660	2.312	.021			

* Est.: estimate; S.E.: standard error; Var.: variance; S.D.: standard deviation.

** In Table 2, the category in parentheses on fixed-effects rows indicates the category compared to the intercept (reference level). For binomial factors, the reference level is the other factor, for multilevel factors, the reference level is the one level not appearing on any line of the table.

SM branch, like the FM branch, was "syntactic function", indicating that clitic pronouns were more likely to fulfill the subject function than the direct-object function. In the subject function, age further divided the subject branch: the 10 children (i.e., 5 children with DLD and 5 TD children) older than 7;3 (87 months) tended to use a larger variety of types of referring expressions than did the 20 children younger than 87 months. Finally, population divided the direct-object branch, indicating that typically developing children used more clitic pronouns in subsequent mentions to fulfill the direct-object function than did the group of children with DLD.

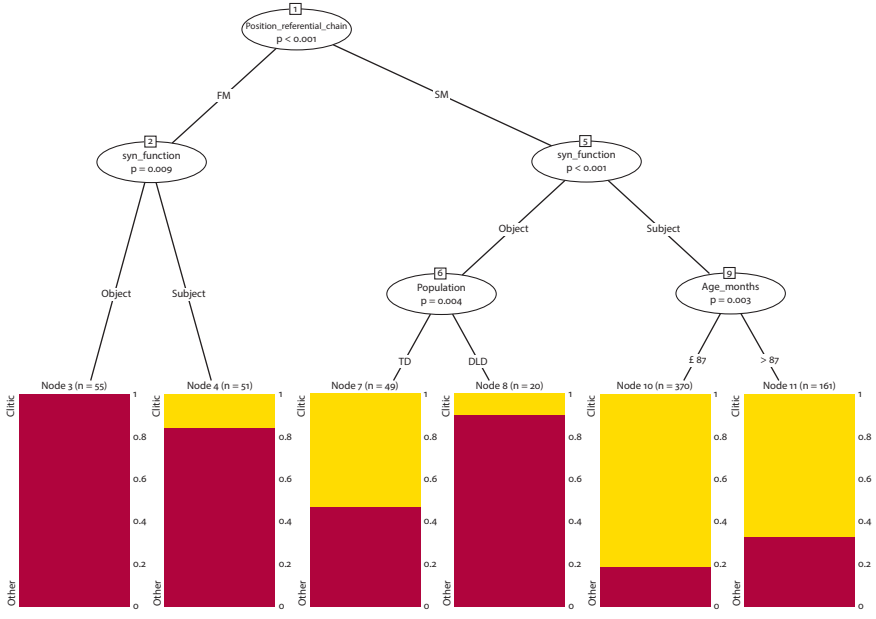

Figure 1. Binary partition tree for clitic pronouns, by position in the referential chain, syntactic function, and population

The direct-object position is an interesting case for deeper exploration. For subsequent mentions appearing as direct objects, TD children primarily produced pre-verbal clitics rather than nouns or other forms (see Example 4).

(4) Henri, TD, 5;3

Hen15	et sa tente ((tout doucement))	'and his tent ((very softly))
	elle s'envole :: !	flies away::!'
Mot16	alors là dis donc ça va être	'so there hey it's going to be
	difficile :: ((tourne la page))	hard ((turns the page))'
Hen16	donc i(l) grimpe sur un arbr(e)	'so he climbs up
	pour aller ***la*** CHERcher :: .	a tree to get ***it.***'

In contrast, out of the 20 subsequent mentions of a referent in a direct-object position produced by the children with DLD, 15 were nouns in post-verbal position while only four were pre-verbal clitics and one was a dislocation.

(5) Léo, DLD, 7;0

Léo8	il voit un petit lapin là. =	'he sees a little rabbit there. =
	((montre l'image du doigt))	((points to the picture))'
Mot9	il voit un petit lapin? qu'est-ce	'he sees a little rabbit? what is
	qu'il fait le petit lapin?	he doing, the rabbit?'
Léo9	il regarde ***le cochon***.	'he's looking at ***the pig***.'

In Example 4, a TD child (Hen16) produced a clitic pronoun to refer to the tent with the direct-object function after he mentioned it with a dislocation with the subject function. In Example 5, a child with DLD (Léo9) produced a noun to refer to the main character with the direct-object function, after having mentioned it (Léo8) with a clitic pronoun with the subject function.

Concerning first mentions with the direct-object function, both groups of children were likely to use a noun in a post-verbal position. The partitioning tree also revealed that for both groups, a large majority of the subsequent mentions had a subject function, whereas for first mentions there was a similar number of referring expressions with the subject and direct-object function.

3.2 Effects of the position in the referential chain on nouns without a determiner, and on null subjects

The use of two further forms was analyzed: nouns without a determiner and null subjects. In order to better understand variations in these forms, two binomial mixed-effect regressions were conducted. For analyzing nouns without a determiner, a new subset of data was created including all nouns, simple and dislocated, for which a determiner was expected. As in the previous regression analysis, only cases in first and subsequent mentions were taken into account ($n = 383$). Modeling was done by adopting a backward elimination modeling strategy (Hadi, 2006). Whenever the means of maximum-likelihood ratio test revealed no significant difference between the models, the simplest model was retained. The final model (Table 2) only included the population, and the referent as a random factor. The analysis indicated that the population had a significant effect on the production of nouns without a determiner. The *C*-value was 0.94, indicating that the regression model was strong.

In the data, 661 referring expressions fulfilled the subject function. Null subjects were observed in 2.37% of the utterances produced by the TD children and 8.54% of those produced by the children with DLD. All but one of the observed cases of null subjects occurred in a subsequent mention, as presented in Example 6.

(6) Léo, DLD, 7;5

Léo90	oui ***il*** ret(r)ouve les autres. ((tourne la page)) /	'Yes ***he*** finds the others again.' ((turns the page)) /
Léo90	et après ***i(l)*** joue.	'and then ***he*** plays.'
Mot90	non ***il*** va les aider à cueillir des pommes.	'no ***he*** is going to help them pick apples.'
Léo91	hm oui. ((tourne la page)) /	'hm yes.' ((turn the page)) /
Léo91	et après ***NULL*** est content.	'and then ***NULL*** is happy.'
Mot91	***il*** est content.	'***he*** is happy.'

In particular, null subjects were observed when the referent was mentioned in an immediate context and the expected referring expression was a pronoun. The non-verbalized referent was strongly accessible to both the mother and the child. This interpretation is supported by the fact that no requests for clarification followed a null subject (see Léo91). Moreover, in these cases, the mothers often offered a recast of the child's utterance by providing the expected clitic pronoun (see Mot91). A binomial mixed-effect regression was used to analyze the impacts of population and age (in months) on null subjects in subsequent mentions while controlling for the participant and the referent as random factors (n = 563). As in the previous analysis, the final model only included population, with participants as a random factor. The analysis (see Table 2, C-value 0.86) revealed a significant effect of population, indicating that the children with DLD used more null subjects than did their typically developing peers.

4. Discussion

This chapter aimed at providing new information about the role of discourse and syntax in the use of referring expressions by children with DLD as compared to their typically developing peers. As in previous studies, the results of the present study showed that children with DLD used fewer clitic pronouns than their typically developing peers. However, this was observed in a nearly natural setting without elicitation. Further exploration of this finding revealed that the use of clitic pronouns was influenced by their syntactic function and their position in the referential chain. Both groups of children were thus globally sensitive to syntactic and discourse-pragmatic features when choosing a referring expression. However, children with DLD appeared to be less sensitive to these features relative to their same-age peers. The analyses revealed that the two groups of children differed in the use of clitic pronouns for subsequent mentions fulfilling the direct-object function. Here, the group of children with DLD used fewer clitic pronouns than their typically developing peers. This finding based on data from social interactions corroborates the results of studies that have analyzed the referring expressions used during narrative or elicitation tasks in French (Jakubowicz, 2003; Paradis & Crago, 2001; Royle & Stine, 2013; Thordardottir & Namazi, 2007) and in other languages as well (Bortolini et al., 2006; Fletcher & Garman, 2009; Kunnari et al., 2011; Leonard, 2013; Prigent et al., 2015).

Previous studies in other settings have revealed difficulties in the production of suitable referential expressions in first mentions and in maintenance (de Weck, 2004a, 2004b; de Weck & Jullien, 2013; de Weck & Rosat, 2003; Paul et al., 1996; Schelletter & Leinonen, 2003; Schneider & Hayward, 2010). The results of

the present study suggest that, as a whole, children with DLD are sensitive to discourse-pragmatic features when interacting with their mother. This suggests that these children with DLD may have fewer problems dealing with discourse features when they tell a story with their mother than when they are asked to (re)tell a story alone. Therefore, as noted in other studies (Masterson, 1997; Ratner, 2000, Thordardottir & Namazi, 2007), data from elicitation tasks only paint a partial picture of children's language and discourse levels.

In order to better understand the nature of the potential difficulties children with DLD experience when dealing with referring expressions, in addition to object clitic pronouns, we analyzed two features that are sometimes considered diagnostic of DLD in French: noun phrases without a determiner and null subjects. This chapter added a new factor to the discussion about these features that is likely to help explain the difficulties these children encounter: the position in the referential chain (see Schaeffer, 2003). The results indicated that the use of NPs without determiners and null subjects followed two different patterns. Firstly, the position in the referential chain did not affect the presence or absence of a determiner in an NP. This suggests that the difficulty of children with DLD is related to other factors such as the morphophonological processes of liaison, elision, and contraction of French determiners (see Royle & Stine, 2013). Secondly, null subjects were observed almost solely in a particular discourse-pragmatic context (i.e., subsequent mentions of a highly accessible referent).

These findings and those regarding object clitics can help us better understand of the discrepancies observed in the literature on French DLD. While children with DLD have demonstrated difficulties with subject and object clitic pronouns in elicitation tasks (Jakubowicz, 2003; Jakubowicz & Tuller, 2009) and in observational settings for school children, studies in conversational settings with preschoolers have indicated that French-speaking children with and without DLD did not differ in their use of pronouns (Thordardottir & Namazi, 2007). In the present study, we found that 5- to 7-year-old children with DLD used fewer object clitic pronouns than did their TD peers in subsequent mentions, and we observed more null subjects in the DLD group than in the typically developing group. It should be noted that, in both of these cases, the number of occurrences was limited for both groups. The children we observed were older than those who participated in the Thordardottir and Namazi study. However, our analysis indicated, as in Hamann et al. (2003), that younger children were more likely to produce null forms than older children. The difference in the age of the participants may partly explain the discrepancy in the results, based on the speculation that TD children have a growth spurt at age four.

In addition to participant age, other factors could account for this discrepancy. Pirvulescu, Pérez-Leroux, Roberge & Strik (2012) argued that the production

of object clitic pronouns is related to their syntactic context while Grüter (2005) argued that the reason for production difficulties cannot be only a grammatical one. Thus, the discourse-pragmatic approach used in the present study, which stresses the importance of pragmatic constraints, and particularly the position in the referential chain, may help in interpreting the discrepancy. Differences in the use of object clitic pronouns and null subjects were observed between the two groups of children in one context only (i.e., in subsequent mentions), and in the case of null subjects, only when the referent was highly accessible. Such cases may be less frequent in a free-play setting than storytelling, shared book reading, or similar activities where a main character is at the focus of the attention throughout the activity (see Chapter 9, de Weck et al., 2021). Furthermore, the experiments designed by Jakubowicz and her colleagues (Jakubowicz et al., 1998) overtly targeted the use of clitic pronouns to mention clear referents. In addition to the general setting (i.e., elicitation task vs. conversational task), the discursive and pragmatic nature of the task may affect the distribution of the types of referring expressions the children used. The discursive and pragmatic skills required by the task could highlight or mask the strengths and weaknesses of pronoun use by children with DLD. Further studies are needed to confirm this interpretation.

Our approach also allows for an alternative hypothesis concerning the use of null subjects. The children used null subjects in contexts that were similar to what it generally called zero anaphora (Bally, 1932; Lambrecht, 2001; e.g., *il a mangé de la viande et bu du vin*, 'he ate meat and drank wine', Lambrecht, 1987: 24). In adult speakers, the use of zero anaphora is explained by the referent's high accessibility (Ariel, 1990), and by referential distance, in which case zero anaphora by adults only occurs in the immediately subsequent clause (Givón, 1995). Recent studies have shown that in young children's discourse (at age 3), null forms occur more often when the referent is accessible (Campbell, Brooks, & Tomasello, 2000; Matthews, Lieven, Theakston, & Tomasello, 2006; Wittek & Tomasello, 2005). It is possible, then, that, like younger children, children with DLD adopt a wider representation of zero anaphora.

Some limitations of the present study must be addressed. First, the small number of mother-child dyads may have reduced the statistical power and therefore masked significant group differences. Second, unlike other studies on null subjects or nouns without a determiner, the focus of this study was on referring expressions, in such a way that subjects or determiner omissions were analyzed only for a specific set of referents (see Method) rather than for all the utterances produced by the children. However, the referring expressions we chose were the most relevant and frequent ones in the story. This should have ensured homogeneity across participants. A further analysis of all subject contexts might offer additional confirmation of our hypothesis.

In conclusion, our findings indicate that when telling a story from a wordless picture book with their mother, the typically developing children as well as the children with DLD exhibited sensitivity to both syntactic and discourse-pragmatic constraints when choosing a referring expression. However, the two groups of children differed in the expression of referents in subsequent mentions and with the direct-object function. In this particular syntactic and discursive context, children with DLD used fewer clitic pronouns and more nouns, whereas typically developing children used more object clitic pronouns. Furthermore, null subjects were only observed in subsequent mentions of a highly accessible referent. Our findings confirm previous observations suggesting that children have less difficulty with discourse-pragmatic features when interacting with their mother than in monologic narrative or elicitation tasks, with the additional conclusion that this pattern is also observable for children with DLD.

The findings of the present study have clinical implications. They suggest that in order to paint a more complete picture of children's morphosyntactic and discourse-pragmatic skills and difficulties, it would be useful to observe them interacting in a familiar caregiver-child interaction. The data from this type of observation could be directly beneficial to language evaluation as well as to clinical intervention. Future studies should continue this line of exploration by taking into account different settings and different activities. In particular, adding a language-matched control group would allow us to discuss the developing trajectories of both typical and atypical populations. Further research should also propose feasible and effective methods for fully tapping the resources a child may have in one setting, in view of generalizing them to other settings.

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CHAPTER 6

Explorations in the relations between reference, syntactic constructions and prosody

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Based on a cross-sectional corpus of 14 mother-child conversations (aged 2;2 to 2;4), this chapter explores children's sensitivity to both formal linguistic features and discourse-pragmatic factors. We considered various issues. The first was the sensitivity of young children to discourse through a syntactic construction closely related to discourse and information structure, i.e., dislocations (see Lambrecht, 1994, for adults, and De Cat, 2007, for children). The second was the fact that the occurrence of a referring expression in a syntactic construction was due not only to discourse-pragmatic characteristics but also to the constraints imposed by the nature of certain verb frames. The third was young children's sensitivity to discourse, examined through variation in the prosodic contours of referring expressions. Our results indicate that the children's use of dislocation is sensitive to discourse-pragmatic contexts in a way comparable to that of the adults and that prosody varies with discourse-pragmatic characteristics. In addition, the nature of the verb frames studied was also shown to influence children's choice of referring expressions.

Keywords: syntactic constructions, referential chain, dislocation, verb frame, prosody, formal factors, discourse-pragmatic factors

1. Introduction

Among the numerous studies dealing with the acquisition of reference, a rather substantial number have examined the link between syntax and discourse-pragmatic factors. Since Clancy's and Allen's first studies (Allen, 2000; Clancy,

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1993) inspired by Du Bois's Preferred Argument Structure framework (Du Bois, 1987, 2003), the correlation between syntactic function and accessibility has been confirmed for various typologically different languages (Allen, 2006; Allen, Hughes, & Skarabela, 2015; see also Chapter 3, da Silva-Genest, Salazar Orvig, Marcos, Caët, & Heurdier, 2021). However, most studies on early language have focused on the subject function and/or the factors underlying argument omission or weak forms vs. stronger forms, without considering other aspects of argument realization. This chapter aims to further explore the influence of formal linguistic features and discourse-pragmatic factors on young children's production of referring expressions. We study two contrasted syntactic constructions and the pitch variations in referring expressions produced in these contexts. The first syntactic phenomenon we study is dislocation, which has been described as a construction motivated by discourse-pragmatic factors and is very common in spoken French (see Barnes, 1985, *inter alia*), especially in child speech (see De Cat, 2007; Parisse, 2008, *inter alia*). The second phenomenon studied, verb frames, has been considered as a formal factor wherein the lexical item puts constraints on the choice of referring expressions (Goldberg, 2006; Lieven, Behrens, Speares, & Tomasello, 2003; Pine & Lieven, 1997; Theakston, Ibbotson, Freudenthal, Lieven, & Tomasello, 2015; Tomasello, 2003, *inter alia*). However, its interaction with discourse-pragmatic characteristics has been studied less. Dislocations and verb frames can be of joint interest in the study of children's use of referring expressions. Lexical items (verb forms) may directly affect the choice of referring expressions due to the rather strong constraints a verb puts on its complements. In addition, dislocation does not depend on the verb, but is a construction pattern, although one might wonder whether it could start out as an item-based construction (but see the results in Parisse, 2008). Moreover, complements in verb frames occur within the clause while dislocations are extraposed. Thus, the two construction types investigated here are not, in our minds, governed by the same principles and offer two contrasted contexts to study the use of referring expressions.

As for prosody, little has been reported for French about the relationship between prosody and discourse in child language. More has been said about formal characteristics, with studies pointing out that children's prosodic contours are similar to those of adults in the first year of life (Konopczynski, 1991). In Dutch child language, as in other child languages, studies tend to show that prosody varies in terms of reference and discourse (for a review, see Chen, 2015).

For French, some researchers who investigate children's use of referring expressions (for young children: De Cat, 2004, 2007; for older children: Hendricks, 2000;

Hickmann, 2003; Hickmann & Hendricks, 1999; Hickmann, Hendricks, Roland, & Liang, 1996; Jisa & Kern, 1998) have been inspired by studies like Lambrecht's (1994), who focused on the link between syntax and information structure in spoken French. In this approach, information structure is understood as the influence of discourse-pragmatic characteristics, such as accessibility, on utterance word order. As such, it can be understood as the expression of discourse-pragmatic characteristics on the sentence level. Another facet of information structure is the organization of old and new referents, at the discursive and dialogical levels, which can be captured through the position in the referential chain. In this context, new referents correspond to the first mention in a referential chain and old/given referents can correspond to subsequent mentions but also to long-term reactivations and repetitions. As in other chapters of this book, we will consider the discourse-pragmatic features through the organization of old and new information by analyzing the position in the referential chain.

1.1 Dislocations and reference

Studies on early uses of referring expressions in French (Salazar Orvig, Marcos, Morgenstern, Hassan, Leber-Marin, & Parès, 2010; see also Chapter 3, da Silva-Genest et al., 2021) show that children around two years of age prefer null forms or weak forms in the context of previously mentioned referents and strong forms in the context of new or reintroduced referents. De Cat (2004, 2007) showed that the use of referring expressions and the syntactic position in which they appear in children's productions are tightly linked to information structure: the mention of a given referent correlates with the use of pronouns in preverbal position, and the introduction of a new referent, with postverbal nouns. This corresponds to the preferential phrase structure described by Lambrecht (1994), which is the most frequent, unmarked information structure, i.e., predicate-focus (see Lambrecht, 1994). In this type of structure, lexical units appear more frequently as complements than as subjects (see Du Bois, 2003); lexical units can, however, be extraposed out of the clause in pre- or postverbal position with a co-referential pronoun within the clause. Syntactic structures of this type, with extraposed elements, also called dislocations (see Example 1 below), make it possible to use a full noun phrase in initial position, and still respect the preferential phrase structure in oral French (see Lambrecht, 1994). Two types of dislocations are currently distinguished: left dislocations (Example 1a), where the lexical units are extraposed to the preverbal position, and right dislocations (Example 1b) where the extraposition occurs in the postverbal position.

(1) Margaux, 2;3, MLU 2.62[1]

a. Mar24 [**ana**ɛlepati]
'**Anna elle** est pa(r)tie' '**Anna, she** is gone.'[2]

b. Mar45 [**il**epati**ana**]
'**il** est pa(r)tie **Anna**' '**he** is gone, **Anna**.'

Labelle and Valois (1996) showed that young children's productions and child-directed speech displayed a majority of right dislocations, contrary to adult-adult interactions, where a majority of left dislocations were observed.

Two main types of analysis can be identified in the literature (for a detailed discussion of these two approaches, see De Cat, 2007). The syntactic tradition found in studies on acquisitional data argues that dislocation is far from being always pragmatically motivated, and sees dislocated structures as a result of children's overgeneralization of a rule, or even as a grammatical change in progress, the resumptive clitic pronoun being considered as an agreement marker on the verb (e.g. Culbertson & Legendre, 2008; Parisse, 2008). Other approaches, which explicitly take pragmatic or interactional factors into account, mostly describe dislocation as a phenomenon tightly linked to information structure and the expression of topics (see De Cat, 2007; Lambrecht, 1994, 2001, *inter alia*) or to interactional phenomena (see Pekarek Doehler, 2001, *inter alia*). De Cat showed that children's first dislocations are discourse-motivated constructions used to mark the topic of the sentence. Furthermore, she found that young children, like adults, assign different pragmatic functions to left dislocation (Example 1a above) and right dislocation (Example 1b above), thus showing that left dislocation is associated with less accessible referents to a greater extent than right dislocation is (see also Givón's topicality scale, 1983).

As a whole, compared with the literature on dislocation in adults, there are few studies on child dislocation. Our study thus aims to compare our data to the results reported in the literature and to the questions raised therein.

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1. Example captions indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. The first three letters of the children's first names are given (e.g., Mar for Margaux). Mot stands for mother; Mar3 corresponds to the child's third speech turn. When the children's utterances are transcribed phonetically (between square brackets [ ]), the interpretation in French is given below in inverted commas. An approximate English translation is also given between inverted commas. Braces indicate uncertain transcriptions or alternative interpretations. {X} stands for uninterpretable or inaudible segments. In the interpretations and translations, 'F' stands for a filler syllable. '/' stands for a pause. For more details on transcription conventions, see Appendix II.

2. The translation of the examples was kept very close to spoken French, unless we felt that a literal translation would not allow for a correct interpretation of the meaning.

1.2 Verb frames and reference

Studies on reference and discourse, which provide a general overview of children's use of referring expressions with respect to discourse-pragmatic characteristics and information structure, may be seen as somewhat restrictive in that they take into consideration abstract grammatical functions and categories in terms of formal characteristics only: subject vs. complement, noun vs. pronoun. Moreover, they seem to consider referring-expression use as a productive process. However, there is growing evidence that other formal characteristics, in particular lexical information, may also play an important role. According to the usage-based approach (Goldberg, 2006; Lieven et al., 2003; Pine & Lieven, 1997; Theakston et al., 2015; Tomasello, 2003, *inter alia*), children are sensitive to the specific lexical and syntactic characteristics of the constructions they experience in the input. These constructions correspond to lexical schemas (frames) consisting of recurrent lexical elements associated to "slots" that can be occupied by various words. Lieven et al. (2003) showed, for example, that English-speaking children's syntactic productivity can be accounted for in terms of simple operations on particular constructions, such as word substitution or addition (e.g., substitution: where's the **ball** --> where's the **book**, addition: want some --> want some **water**), which generally correspond to frequent patterns in their input language (e.g. "where's the X", "want some X"). These frames therefore constitute a favorable context for the initial acquisition of the particular linguistic units with which they are combined. Whereas a number of studies have confirmed the role of frequency and the item-based process of English syntax acquisition (Ambridge, Kidd, Rowland, & Theakston 2015), there are only a few studies for the French language. Morgenstern and Parisse (2012) showed, for six specific verbs, that children align with their mother's uses of the number of arguments associated with each verb.

The way the impact of these frames interacts with referential features has seldom been addressed. According to syntactic theory (e.g. Creissels, 2006), the verb and its complement(s) form the predicate, which combines with the subject. In that account, verbs have more influence on the type of internal arguments they are combined with, than on the type of external arguments, so we can wonder whether and to what extent the use of referring expressions in the complement position, for certain verbs, is driven by the verb frame rather than by discourse-pragmatic factors. For English, the few eliciting studies on this topic present contradictory results. Theakston (2012), for example, found that for older children, the association of pronouns with the subject position and lexical forms with the object position was stronger than the informative needs of the interlocutor, but Graf, Theakston, Lieven, and Tomasello (2015) demonstrated children's sensitivity to contrast in their choice of referring expressions for both the subject and

object positions. To our knowledge there have not been any equivalent studies for French. This chapter explores this topic by looking at the impact of some verb frames on referring-expression use.

1.3 Prosody and reference

As for prosody, recent studies have emphasized the autonomy between syntax and prosody, or their indirect links (Lacheret-Dujour, 2003; Martin, 2009; Mertens, 2012; Simon, 2004). In French, prosodic accentuation occurs at the end of a group, i.e., utterances, phrases, etc. (for details, see Mertens, 2008, 2012) unlike English, for instance, which displays word stress. Other accentuation patterns include argument focusing, marking contrasts, etc. According to Lambrecht's (1994) preferred sentence-type approach, a prosodic accentuation preferentially occurs at the end of postverbal lexical units, i.e., at the end of the utterance, to mark the predicate focus. The grammatical mood of the utterance – declarative, interrogative, etc. – may change the direction of the prosodic contour. Thus, in adult and in child productions, the prosodic contour of referring expressions in non-preferred syntactic positions, i.e., nouns in preverbal position, may be marked by a stressed first syllable, to signal contrast or focus (see Mertens, 2008, 2012).

We do not know much about the link between reference, information structure, and prosody in language acquisition. Snow and Balog (2002) proposed a review of developmental prosody; Behrens and Gut (2005) examined prosody in German; Konopczynski (1998) studied the relationship between prosody and syntax in French during the two-word utterance period (for dislocation, see De Cat, 2007). Some studies in different perspectives have tended to demonstrate a link between prosody and focus starting at the age of 5 (Chen, 2015, in Dutch), or between prosody and contrast (Wells, Peppé & Goulandris, 2004, in English). These studies indicate that both infants and parents produce more stressed referring units with new referents. For given referents, infants tend to produce fewer prominences (for details, see Chen, 2015). In French, De Cat (2007) showed that as soon as the first word combinations appear, children master the prosody of topic and focus marking. For all of these authors, the results suggest that, like information structure and syntax, some features of prosody vary according to discourse-pragmatic characteristics early in child development.

In this chapter, we study the relationship between the prosodic contours of referring expressions and the syntactic constructions under study, i.e., dislocations and verb-frame complements. Considering dislocations, it is generally agreed that in the prosodic contour of French left dislocations, the last syllable of the left dislocated element is marked with an obligatory prosodic boundary (see Mertens, 2008) that dominates the following intonational group, i.e., the clause. Nevertheless, as said above, left-dislocation prosody can be diverse (see De Cat,

2007) and seems to be largely due to the different activities and production types under consideration (see Beyssade, Delais-Roussarie, Doetjes, Marandin, & Rialland, 2004; Delais-Roussarie, Doetjes, & Sleeman, 2004). Right-dislocated elements are commonly described as destressed with respect to the preceding accent. However, this contour is not systematic either and can be modified in case of contrastive reading or monotonic contours. Interestingly, De Cat (2007) mixes prosodic and discourse-pragmatic characteristics. According to this author, the prosody of dislocated subjects in contrastive readings can be similar to non-dislocated heavy subjects, and the two categories cannot be differentiated in terms of prosody alone. Furthermore, the prosody of spontaneous speech can differ slightly from classical descriptions of French prosody on elicited utterances. Thus, a criterion like a pause between the dislocated element and the clause is not necessarily recognized for either dislocation types, and, similarly, the lowering of pitch on the right dislocated element is not systematic. Prosodic contours can also differ due to the grammatical mood of the utterance – interrogative, declarative, etc. As Delais-Roussarie and Feldhausen (2014) pointed out in another perspective, the boundaries between the left-dislocated element and the clause cannot be "systematically explained on the basis of the three criteria usually claimed to account for prosodic phrasing, i.e. syntactic and information structure, and metrical complexity" (Delais-Roussarie & Feldhausen, 2014: 4). Thus, as said above, there is no one-to-one relationship between prosody and syntactic construction.

Considering verb frames, we did not expect prosodic variation according to verb-frame type, but rather discourse-based variation. Indeed, among other factors, pitch contour may vary with a discourse-pragmatic factor, namely, the position in the referential chain. This chapter does not study prosody as such, but tries instead to grasp prosodic variations in the contours of the referring expressions based on discourse, i.e., the position in the referential chain in the two syntactic contexts studied here. Hence, we only considered the opposition between two categories: (1) a *plateau* on the referring expression, which means that there is neither prosodic movement, whether simple or dynamic (see Lacheret-Dujour, 2003), on the referring expression, nor contrast with respect to the prosodic contours of the preceding context, and (2) a *prosodic movement*. Variation of prosodic contours with referential-chain position is relevant for showing young children's sensitivity to discourse.

1.4 Aim of the study

For verb frames and dislocations, we compare children's uses of referring expressions with their mothers' productions in terms of syntactic characteristics (referring-expression category, syntactic function, and position with respect to the verb) and in terms of discourse-pragmatic characteristics (position in the

referential chain). We also compare the pitch contours of these referring expressions in both the children's and their mothers' productions.

For dislocations, we limited our study to the question of whether our children use dislocation in the same referential-chain position as their mothers do. If so, this would not merely be the result of rule over-generalization, but would be at least partly motivated by discourse-pragmatic needs, even if the children use dislocation more frequently than adults.

For verb frames, a potential variation in the type of referring expression used, in terms of formal characteristics should inform us about how the specific lexical verb units affect the semantics, the number of complements, and their linguistic form. The comparison between the mothers and children should allow us to observe the influence of the formal characteristics of the mother's input on the child's referring-expression choice. In line with studies that take the usage-based approach, we consider the specific nature of the verb, and examine the different types of referring expressions used to encode a referent in the complement function, in order to determine the contribution of particular verb forms to children's uses of referring expressions. We also consider whether referring expressions embedded in verb frames vary with discourse-pragmatic characteristics.

Finally, we expect prosody to be related to the position in the referential chain rather than being related to specific syntactic contexts, here, dislocations and the verb frames studied. As various authors have pointed out the early acquisition of prosodic functions, we expect to observe similar prosodic-contour variations in the child and adult productions.

The chapter is organized as follows. In Section 2, we present our method. Section 3 presents the results for the different phenomena. Section 4 includes a discussion based on the results presented and some concluding remarks.

2. Method and preliminary results

In this section, we present different aspects of our methodology: the participants (2.1), the data coding (2.2), and the statistical analyses (2.3).

2.1 Participants and data collection

The study is based on part of the Childcare corpus,[3] a cross-sectional corpus of naturalistic conversations. We selected 14 mother-child dyads in two different situations: snack time and free play at home. The children ranged in age between 2;2 and 2;4, with MLU between 1 and 3. This selection was determined by the two

3. see Appendix I for a detailed presentation of the Childcare corpus

syntactic phenomena under study. The fine-grained nature of the prosodic analysis, which was aligned with the phonetic transcription, both time-consuming, forced us to limit our analysis to a subset of 8 mother-child dyads.

2.2 Coding

First, we describe the referring-expression categories (2.2.1) and the different factors hypothesized to play a role in referring-expression use, namely, the verb frame types (2.2.2) and the referring expression's position in the referential chain (2.2.3). Then we describe the coding of prosodic features (2.2.4) and of utterance mood (2.2.5).

2.2.1 *Categories of referring expressions*

We analyzed the referential uses of various linguistic units. References to entities as well as references to the speaker and addressee were taken into account. For the analyses on position in the referential chain, only references to entities were considered, since the discourse-pragmatic characteristics of personal reference are somewhat different (see Chapter 3, da Silva-Genest et al., 2021). After having listed all referring expressions, we will focus on dislocations.

The following referring expressions occurred in our corpus: common nouns, proper nouns, clitic personal pronouns, strong personal pronouns, demonstrative pronouns, interrogative pronouns, the clitic adverbial pronoun *en*, nominalized adjectives, possessives such as *le mien* (*'mine'*), numerals, indefinite pronouns, quantifiers, and relative pronouns. These 13 categories were used in the analysis of verb frames.

As mentioned above, dislocations are commonly defined as a construction in which an extra-clausal referential unit is maintained by a resumptive unit in the clause. The identification of dislocations can be somewhat difficult in studies of young children, who still omit clitic pronouns. In line with the analysis by Ferdinand (1996) and Labelle and Valois (1996) of apparent post-verbal subjects, De Cat (2004, 2007) considered utterances such as Examples 2a and 2b below as instances of dislocation without resumptive pronouns. We will adopt this analysis in our study.[4]

(2) De Cat (2007: 173–174)

a.	Max (2;2.22) **moi** est capable	'**me** is able' 'I can (do it)'
b.	Tom (2;1.11) prendre **moi** a balle	'take **me** e ball' 'I (want to) take the ball'

4. In this respect, our study differs from the other chapters of this book, where examples such as (2) above are not analyzed as dislocations.

We considered both left and right dislocations, and three types of dislocated elements (in bold in the examples): nouns (Example 3a), strong demonstrative pronouns (Example 3b) and strong personal pronouns (Example 3c).

(3) Julien, 2;3, MLU 1.92

(a)	Mot6	**la dame** elle est partie	**'the lady** she is gone'
(b)	Mot53	**ça** c'est quoi?	**'that** it is what?'
(c)	Mot35	**moi** je veux un cheval	**'me** I want a horse'

The resumptive pronoun (underlined in the examples) can be a personal pronoun (Example 3a, 3c), a strong demonstrative pronoun (Example 4), or a clitic demonstrative pronoun (Example 3b). We also considered instances of dislocations where the child produced a filler instead of the expected resumptive pronoun (Example 5) or no resumptive form at all (Examples 2a and 2b above).

(4) Loli, 2;3, MLU 2.94

Lol30	[le flœʁ sa sãbɔ̃]	
	'les fleurs ça sent bon'	'flowers, they smell good'

(5) Serena, 2;3, MLU 2.45

Ser49	[kanaʁ ɛmɑ̃ʃ?]	
	'canard [ɛ] mange?'	'duck (is) he eating?'

For object dislocations, the resumptive element could be absent when a null object is allowed by the verb (Example 6a):

(6) adapted from De Cat (2007: 42)

(a)	tu aimes bien, les colliers?	'do you like, the necklaces?'
(b)	tu aimes bien les colliers?	'do you like the necklaces?'

In this case, prosody can be useful to distinguish object right dislocations without any resumptive element (Example 6a) from non-dislocated objects (Example 6b). Right-dislocation prosody (represented by the comma in the example) entails an interpretation of (6a) as being about necklaces, but not for (6b), which could be about the addressee's preferences, for example). Nevertheless, according to De Cat (2007), prosody alone is not sufficient to identify dislocations. As this author pointed out, there is no unique prosody for dislocations; and the prosody of right dislocations, for instance, can vary depending on its discourse-pragmatic characteristics.

In coding the dislocations, we analyzed the extraposed element and its resumptive element (if present) together as one referring expression, characterized by the nature of the dislocated element (noun, strong demonstrative pronoun, strong personal pronoun). The categories of referring expressions considered here are the same as those mentioned above. However, in order to compare the

different types of dislocations, we grouped the lexical expressions together in the following way: common nouns, proper nouns, and nominalized adjectives (Nouns), since we aimed to study the dislocation of nouns, demonstrative and personal pronouns. For the same reason, very rare types of dislocations (dislocation of an infinitive or possessive, in all, 5 occurrences here) were discarded for this analysis.

Moreover, not all linguistic expressions can be dislocated. Expressions in non-referential uses are never or very rarely dislocated, as well as certain categories such as interrogative pronouns. The count was thus limited to potential dislocation contexts: we selected only the main contexts in which dislocations occurred in our data (subject and object functions, nouns, demonstrative and personal pronouns when referring to entities and to participants).

2.2.2 *Verb frames*

To study the impact of verb frames, i.e., the effects of the lexical nature of the introductory verb, we considered only referring expressions occurring in the complement function (for a definition of functions in a construction-based perspective, see Croft, 2001), that is, arguments selected by the verb. In our case, the functions concerned were direct and indirect objects, and predicative and locative complements. For this reason, subjects were discarded for this phenomenon.

In our corpus, we identified 11 verb frames on the basis of their frequency and their syntactic and usage characteristics.[5] For the purpose of this study, we selected three frames, among the most frequent in our data, which have different syntactic properties and realizations. They are described below.

Mettre+X ('put+X'):[6] *Mettre* is a common regular verb that can take two complements (76% of our data): a direct object (DO, Example 7 in bold) and a locative complement (LC, Example 7 underlined).

(7) Ilona, 2;3, MLU 2.58

Mot35	on met vite **la cuillère**	'we quickly put **the spoon**
	<u>dans la bouche</u>	<u>in the mouth</u>'

5. The 11 frames are *Mettre+X* (*'put+X'*), *C'est+X*, (*'it's +X'*), *Vouloir+X* (*'want+X'*), *aller+X* (*'go+X'*), *avoir+X* (*'have+X'*), *dire+X* (*'say+X'*), *donner+X* (*'give+X'*), *être+X* (*'be+X'*), *faire+X* (*'do+X'*), *prendre+X* (*'take+X'*), *regarder+X* (*'look+X'*). The other verbs taking a complement were not frequent enough to be identified as frames. However, their complements were counted amoung "all complements" (see Tables 7, 8 and 9).

6. The labels ***Mettre+X, Vouloir+X and C'est+X*** simply indicate that the referring expression occurs as a complement of the verb. They do not indicate the actual word order. A referential complement of *Mettre+X*, for example, could thus occur after the verb, as in Example (7), or before, as in: *on **la** met vite* (*'we **it** put quickly'*).

It is also possible to realize only one of the two complements, in which case it was usually a DO (21%, LC: 3%).

Vouloir+X ('want+X'): *Vouloir* can function as a modal verb or a transitive verb, in which case it takes one complement, a direct object (Example 8).

(8) Julien, 2;3, MLU 1.92
Mot47 je veux **un coq** 'I want **a rooster**'

C'est+X ('it's+X'): Constructions introduced by *c'est* ('it's') are a special case because the introductory element is a frozen form composed of two inseparable elements, a clitic demonstrative subject and a specific conjugated form of *être ('to be')*. Constructions introduced by *c'est* were of two types. In the first type, *c'est* takes one complement (78% of our data), as in Example 9.

(9) Arnaud, 2;3, MLU 2.96
Mot171 c'est pas **le bon triangle** 'It's not **the right triangle**'

In the second type, *c'est* is the first part of a cleft construction (22%), in which case the structure is the following: *c'est* + REFERRING EXPRESSION + RELATIVE CLAUSE, where the referring expression is emphasized more than the elements in the relative clause (Example 10).

(10) Pauline2, 2;3, MLU 2.52
Pau208 [sepolinkifɛ]
'c'est **Pauline** qui fait' 'It's **Pauline** who does (it)'

In both types, the referring expression can be on its own (see above, 76%) or introduced by a preposition (24%, non-cleft construction: Example 11; cleft construction: Example 12).

(11) Margaux, 2;3, MLU 2.62
Mot176 c'est **pour Maman**? 'It's **for Mommy?**'

(12) Théo, 2;3, MLU 2.23
Mot77 c'est **à la crèche** que tu as vu l'histoire de Pinocchio? 'It's **at the nursery** that you saw the story of Pinocchio?'

In order to determine whether the lexical nature of the verb influences the choice of a referring expression, we examined referring-expression use in the complement function in these three frames in relation to referring-expression use in the complement function for all the verb+complement constructions identified in our corpus. Note that dislocated elements, as well as their resumptive pronouns, were discarded from the verb frame analysis: they were not frequent in the complement function, and the dislocated element was not tightly linked to the verb since it was extraposed.

2.2.3 *Position within the referential chain*

The category "position within the referential chain" indicates the discourse status of the referent mentioned by the referring expression. Four cases were considered:

- First mention: first introduction of the referent.
- Subsequent mention: the referent was mentioned at least once in the four preceding speech turns.
- Reactivation: reintroduction of the referent not mentioned for the last four or more turns.
- Repetition: the referent is mentioned in an utterance that reproduces the communicative intention of an immediately preceding utterance.

2.2.4 *Prosody*

The prosodic analyses were conducted using PRAAT (Boersma & Weenink, 2002) and Prosogram (Mertens, 2004), which enabled us to visualize a simulation of the human perception of pitch. The phonetic transcriptions of our corpus were aligned with the audio-data using Easyalign (Goldman, 2011). We considered the pitch contour of each referring expression without trying to identify the type of accentuation. We distinguished two different situations: a pitch movement on the prosodic contour, or a plateau. On one hand, we considered that the contour of a referential linguistic unit constituted a pitch movement when the variation was of 2 semi-tones or more (see Mertens, 2004), not only on the linguistic unit, but also with respect to the preceding context. This category included different types of movement: simple or dynamic accentuation, rising or falling intonation (Lacheret-Dujour, 2003); pitch accentuation on the last syllable or on the other syllables of the referring unit only. A flat prosodic contour on the linguistic unit, but with a drop in pitch compared to the preceding context, could correspond to a movement. On the other hand, a pitch contour was considered as a "plateau" when the variation was less than 2 semi-tones.

We included in our analysis all referring expressions except the ones produced without voicing (*qu', t',…*), since voice frequency could not be analyzed. We also discarded referring expressions produced during an overlap. Furthermore, only assertions were considered, because questions imply other pitch contours. The prosodic coding was done on 625 referring expressions.

Prosody was analyzed and coded separately from discourse and syntax, and was later considered according to the position in the referential chain relative to the two syntactic phenomena under study.

2.2.5 *Complementary analysis*

For dislocations, an additional analysis was conducted for the influence of the utterance's grammatical mood on the distribution of left and right dislocations. For this analysis, only utterances with a declarative or interrogative mood were considered.

2.3 Intercoder agreement and statistics

The data coding was checked for intercoder agreement. For each dyad, 10% of the corpus was coded independently by a different member of the research team. The results are as follows: categories of referring expressions, 95.81% of intercoder agreement (Cohen's kappa: $k = 0.95$); syntactic function, 91.72% (Cohen's kappa: $k = 0.888$); position in the referential chain, 87.24% (Cohen's kappa: $k = 0.843$); and verb frames, 95% (Cohen's kappa was not calculated because of the large number of categories).

The data studied here cannot be assumed to be normally distributed, so we resorted to non-parametric statistical testing. A Wilcoxon signed-rank test for matched results, or repeated measures, was conducted for between-subject and within-subject comparisons on the prosody and dislocation results. For the verb frames analysis, Fisher's exact tests of contingency tables were conducted to examine the distribution of referring expressions in the selected frames in relation to the overall distribution of all referring expressions and to the overall distribution of referring expressions in a complement function. When the samples were too small to run statistics, we relied on the mean percentages of occurrences.

3. Results

In this section, we present the results of our analysis. Section 3.1 gives some preliminary results about variations in the prosodic contours of referring expressions according to position in the referential chain. Section 3.2 describes the results pertaining to dislocations. Section 3.3 presents the analysis of verb frames. For each phenomenon, formal characteristics are considered first, then discursive uses, and finally prosodic features.

3.1 Referring expressions, position in the referential chain, and prosody

As said above (see 2.2.4), the prosodic contours of the referring expressions were considered in terms of the opposition between prosodic movement and plateaus. All referring expressions in the subcorpus of 8 dyads were analyzed. An important

general finding is that the prosodic contours of referring expressions depended on their position in the referential chain (Table 1).

Table 1. Distribution (in percentage) of the prosodic contours of the referring expressions used by the children and their mothers, by position in the referential chain

		Movement %	Plateau %	N=
Children	Subtotal	54.31	45.69	189
	FM *	60.98	39.02	41
	SM	45.98	54.02	87
	REA	66.67	33.33	24
	REP	54.05	45.95	37
Adults	Subtotal	38.30	61.70	436
	FM	50.00	50.00	104
	SM	27.31	72.69	227
	REA	52.27	47.73	44
	REP	49.18	50.82	61

* FM: first mention, SM: subsequent mention, REA: reactivation, REP: repetition

Children's first mentions seemed to occur more often with a prosodic movement than with a plateau, although this prosodic marking could not be statistically verified due to insufficient occurrences for the Wilcoxon test. There was no significant variation in the prosodic contour of subsequent mentions (Wilcoxon: $V = 5$, $p = .588$).

In the adult data, referring expressions in subsequent mentions occurred more often in a plateau (Wilcoxon: $V = 0$, $p < 0.04$). This difference was not observed for first mentions (Wilcoxon: $V = 14$, $p = 1$). Interestingly, if we compare the adults and children, we find no statistical differences for movements (Wilcoxon: $V = 19$, $p = .094$) or for plateau (Wilcoxon: $V = 2$, $p = .094$), suggesting that there is no clear difference between children and adults in the prosodic contours of referring expressions according to the position in the referential chain.

There were no significative effects for repetitions or reactivations.

3.2 Dislocations

This section begins with a general overview of the dislocations used by the children and the adults, in terms of the overall frequency of occurrence and the direction of dislocation (left dislocation vs. right dislocation) in section 3.2.1. Next, we address the discursive use of dislocations (3.2.2). Finally, prosodic features are considered in 3.2.3.

3.2.1 *Ratio and dislocation direction across referring expressions*

As stated in the methodology section, for the analysis of dislocations we limited the data to possible dislocation contexts (subject and object functions, nouns, and demonstrative and personal pronouns referring to entities and discourse participants). In all, 836 dislocations were analyzed (186 for the children and 650 for the mothers) out of 4563 referring expressions (749 for the children, 3814 for the mothers). With these restrictions, the percentage of dislocated elements was 24.83% in the children's productions and 17.04% in the adults'.[7] They were almost exclusively subjects (94,27% for the children and 88,58% for the mothers). As expected, the children used significantly more dislocations than the adults (Wilcoxon: $V = 82$, $p < 0.008$).

We further investigated whether the distribution of left and right dislocations in the children's and the adults' productions was similar, and whether a preference for one or the other could be observed. Table 2 reports this analysis.

Table 2. Distribution (in percentage) of left dislocations, right dislocations, and double dislocations for noun, demonstrative and strong personal pronouns dislocated forms used by the children and their mothers

		LD %	RD %	LD/RD %	N=
Child	Subtotal	40.86	57.53	1.61	186
	NDisl*	30.95	66.67	2.38	126
	DDisl	55.10	44.90	0.00	49
	StDisl	90.91	9.09	0.00	11
Adult	Subtotal	46.77	50.92	2.31	650
	NDisl	41.58	56.38	2.04	392
	DDisl	45.71	51.43	2.86	175
	StDisl	73.49	24.10	2.41	83
Total		45.45	52.39	2.15	836

* NDisl: noun dislocation, DDisl: Strong demonstrative pronoun dislocation, StDisl: Strong personal pronoun dislocation, LD: left dislocation, RD: right dislocation, LD/RD: double dislocation

There were more right than left dislocations in both the child and adult productions. However, the differences between left and right dislocations across all

7. In Chapter 3 (da Silva-Genest et al., 2021), dislocation rates were calculated across all referring expressions, including both referential and non-referential uses. In their counts, the dislocation rates are much lower (around 10%).

dislocation types were not statistically significant (Wilcoxon: children: $V = 22$, $p = .610$; adults: $V = 19$, $p = .722$).

When we looked at each category separately, the dislocation of nouns tended to be more frequent in right dislocations for the children (Wilcoxon: $V = 5$, $p = .079$), but for the adults, this difference did not prove to be significant (Wilcoxon: $V = 15$, $p = .119$). The dislocation of personal pronouns, on the contrary, seemed to be more frequent in left dislocations, although we were not able to conduct statistical tests because the samples were too small. There was no significant difference between left and right dislocations of demonstrative pronouns for the adults.

Overall, the children and adults exhibited similar results regarding the dislocation direction. As said above in the introduction, the difference between left and right dislocations is assumed to be related to discourse-pragmatic needs, with the observable difference being in the word order; so it can be seen as an indicator of sensitivity to information structure. However, other factors are also at play: as we have just shown, the type of dislocated material seems to be a variable of interest. In an additional analysis, we looked at whether the left-dislocation and right-dislocation distributions differed according to the grammatical mood of the utterance. For adults, left dislocation was more frequent in declarative utterances (Wilcoxon: $V = 98$, $p = .004$), whereas right dislocation prevailed in interrogative utterances (Wilcoxon: $V = 3$, $p = .005$). For the children also, left dislocation seemed to be more frequent in declaratives, although the difference was not significant. Note that the frequency distribution for children's interrogative utterances appeared to be very similar to the adults' (out of 65 dislocations in the children's interrogative utterances, over 80% were right dislocations). There was not enough data for statistical testing of child interrogative utterances, but more data could show an effect for the children too, at least in interrogative utterances.

3.2.2 *Dislocation and discourse-pragmatic characteristics*

In this section, we examine the discursive status of left and right dislocation. For this analysis, we considered dislocations according to their position in the referential chain. We only analyzed third-person referential uses; references to the first and second persons were excluded since the constraints on reference maintenance are not the same (see Chapter 3, da Silva-Genest et al., 2021, for a more general analysis of person reference with respect to the referent's attentional and discursive status). We looked solely at left and right dislocations, excluding double dislocations. The number of occurrences of the dislocations included in Table 3 was 679.

Both the children and the adults produced more dislocations in subsequent mentions than in first mentions (Wilcoxon: adults: $V = 28$, $p < .02$; children: $V = 44$, $p = .008$), repetitions (Wilcoxon: adults: $V = 28$, $p < .02$; children: $V = 44$, $p = .013$), or reactivations (Wilcoxon: adults: $V = 28$, $p < .02$; children: $V = 42$,

p = .02). For the adults, first mentions were more frequent than were repetitions (Wilcoxon: V = 21, p = .04) and reactivations (Wilcoxon: V = 28, p = .02), and dislocation was less frequent in reactivations than in repetitions (Wilcoxon: V = 10, p = .005). For the children, there was no statistical difference between first mentions, reactivations, and repetitions. For comparison, the overall data for all referring expressions is also given in Table 4. The dislocation types did not exhibit a strikingly different distribution[8] from the overall picture.

Table 3. Distribution (in percentage) of dislocations by position in the referential chain, used by the children and their mothers

	FM*			SM			REA			REP			N=
	LD %	RD %	Total %	LD %	RD %	Total %	LD %	RD %	Total %	LD %	RD %	Total %	
Total	11.05	11.93	22.97	20.47	30.19	50.66	3.09	6.19	9.28	5.45	11.63	17.08	679
Child	9.04	10.84	19.88	18.07	26.51	44.58	4.22	12.05	16.27	7.23	12.05	19.28	166
Adult	11.70	12.28	23.98	21.25	31.38	52.63	2.73	4.29	7.02	4.87	11.50	16.37	513

* FM: first mention, SM: subsequent mention, REA: reactivation, REP: repetition, LD: left dislocation, RD: right dislocation

Table 4. Distribution (in percentage) of all referring expressions by position in the referential chain, used by the children and their mothers

	FM* %	SM %	REA %	REP %	N=**
Total	26.34	47.36	8.81	17.29	5038
Child	25.17	41.24	12.04	21.41	1462
Adult	26.82	49.86	7.49	15.60	3576

* FM: first mention, SM: subsequent mention, REA: reactivation, REP: repetition

** 0.20% of the referring expressions were coded as uncertain for the position in the referential chain. These cases were not considered in this section.

For the mothers, there was no significant difference between left dislocation and right dislocation in first mentions. In subsequent mentions, right dislocation prevailed over left dislocation (the difference failed to be significant, but there was a strong tendency: Wilcoxon: V = 4, p = .058). In repetitions as well, right dislocation was significantly more frequent (Wilcoxon: V = 0, p = .022). This result was

8. Fisher's exact test for adults: FM p = .12; SM p = .65; REA p = .10; REP p = .65. For children: FM, p = .11; SM, p = .40; REA p = .72; REP p = .55).

expected, since the referent was highly accessible in this context; the same held true, although to a weaker extent, for subsequent mentions. There was not enough data in reactivations to run statistical tests.

We could not conduct statistical tests for the children's data here, but overall, the children appeared to use dislocations in the same discursive contexts as the adults. This argues against the overgeneralization hypothesis, which assumes an arbitrary distribution of dislocations.

On its own, this distribution similarity may only point to a phenomenon of syntactic priming. Additional calculations were done on the distance, in terms of number of utterances, between each dislocation and the preceding one. For over half of the child dislocations produced after an adult dislocation, the distance was at least four utterances, which led us to consider that the production of dislocations might have been productive for the children.

3.2.3 *Dislocation, position in the referential chain and prosody*

In this section, we study the variations in the pitch contours of dislocated referring expressions. The analysis of left and right dislocations tends to show that the children and the adults behaved differently. Furthermore, in some cases, both populations behaved unexpectedly (Table 5).

In general, right dislocated elements are described by a flat prosodic contour. In our data, right dislocated units seemed to carry more prosodic movements than plateaus, for both populations. For left dislocations, the two populations differed in that the dislocated units carried more plateaus in the adult data but not in the child data.

Table 5. Number of occurrences of prosodic contours in left dislocations and right dislocations, produced by the children and their mothers

		Movement	Plateau	Total
Children	Total	10	8	18
	RD*	7	5	12
	LD	3	3	6
Adults	Total	21	25	46
	RD	15	8	23
	LD	6	17	23

* RD: right dislocation, LD: left dislocation

Interestingly, it seems that the observed distribution of the prosodic contours of dislocated referring expressions corresponds to the overall distribution of referring expressions (see Table 1) for both the children (movement 54.31% vs. plateau

45.69%) and the adults (movement 38.30% vs. plateau 61.70%), except for right dislocations in the adult data, which seem to behave differently.

Taking a closer look at the position in the referential chain and the prosodic contours of left dislocated elements, we can see that the children and the adults behaved differently, even though the number of occurrences (6 dislocations for the children and 23 for the adults) did not allow for a statistical comparison. In the children's data, we found that two out of three contours in left-dislocated units were plateaus for first-mentioned referents, while in subsequent mentions, three out of four carried prosodic movements. By contrast, in the adult data, which contained more occurrences, nine out of fourteen referring-expression contours were plateaus in subsequent mentions.

A qualitative analysis of these occurrences suggests that prosody was also used for functions other than reference maintenance, as can be seen in Example (13).

(13) Arnaud, 2;3, MLU 2.96

Mot18	je coupe là attends / oh c'est dur attends je prends le couteau fais attention j'ai un couteau fais attention / j'ai un couteau à la main tu fais très attention	'I'm cutting here wait / oh it's hard wait, I'm taking the knife be careful I have a knife be careful / I have a knife in my hands be very careful'
Arn16	[pakupeledwa] 'pas couper les doigts'	'not cut the fingers'
Mot19	bah oui attends	'well yes wait'
Arn17	[ɔ̃ kup/ uwɛleku- grokutolela grokuto] 'on coupe / où est le cou-**gros couteau** **l**'est là **gros couteau**'	'we cut / where is the kni-**big knife** **it**'s here **big knife**'

On Arn17, Arnaud begins his turn with *on coupe ('we cut')*, and a question about the location of a mentioned knife. Arnaud interrupts this syntactic plan (*où est le cou-* '*where is the kni-*'), and he indicates that he found the knife using the left dislocated NP *gros couteau ('big knife')* (Example 13 underlined). Unexpectedly, this left-dislocated element carried a prosodic movement when *knife* was a maintained referent. Furthermore, the prosodic-movement NP followed by *l'est là NP* (*'it is here NP'*) could be a routinized sequence with its own prosodic contour. Thus, as said above, prosody is multifactorial and while prosodic movement can vary with referential position, it can also vary with interactional factors. Whereas the overall referring-expression prosody for the adult data varied with the discourse, a sequential fine-grained analysis – which is not the topic of the present chapter – would show that it was not dependent solely upon referential position, but performed other interactional functions.

This part of our analysis addressed the links between syntax, via the example of dislocation, position in the referential chain, and prosody. Of course, this may not be the whole picture. The use of referring expressions could be sensitive to other formal characteristics too, as will be shown in the next section on verb frames.

3.3 Verb frames

First, we present the distribution of referring expressions in terms of categories (3.3.1). Then we examine their position in the referential chain (3.3.2). Finally, we analyze the prosodic characteristics of referring expressions in certain verb frames (3.3.3).

3.3.1 *Distribution of referring expressions in verb frames*

In all, 1725 referring expressions were identified and analyzed as referential complements, 219 for the children and 1506 for their mothers. They fell into 13 different categories (see Section 2.2.1). Each referring expression was analyzed according to the lexical nature of the verb with which it combined.

Table 6 gives the distribution of the different categories found in the three verb frames under study (*Mettre+X*, *Vouloir+X*, *C'est+X*), for the children and their mothers in the overall distribution (all complements coded)[9] and in each type of frame.

As Table 6 shows, there was less variety among the frames that we chose to study (*Mettre+X*: 8/10, *Vouloir+X*: 7/10, *C'est+X*: 7/10) than in the overall complement function. It also shows that there was little variation in the number of categories represented in these frames. The following categories were found in all three frames: adjectives acting as nouns, common nouns, demonstrative and interrogative pronouns. The others were either specific to one particular frame (quantifiers for *Mettre*, numerals for *C'est*) or found for two of them (proper nouns for *Vouloir* and *C'est*, clitic pronouns for *Mettre* and *Vouloir*, and adverbial and strong personal pronouns for *Mettre* and *C'est*). These elements suggest that not all categories available for a referring expression in complement function are used in the same way, depending on the frame. The specific lexical nature of the verb appears to limit the potential categories of referring expressions.

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9. The 10 categories of referring expressions presented in the table are the ones found across the three frames in question. Given that the overall distribution contains more categories (13), the percentages do not add up to 100% for that distribution.

Table 6. Distribution (in percentage) of the referring expressions for all complements and for *Mettre+X*, *Vouloir+X*, and *C'est+X*, used by the children and their mothers

	Adj* %	Dem %	Adv %	Intr %	CNoun %	PNoun %	CPP %	Quant %	SPP %	Num %	N=
All complements											
Child	2.28	8.68	0.46	13.70	46.12	7.31	10.05	1.37	7.76	0.46	219
Adult	1.46	4.11	4.05	10.82	46.54	3.39	23.64	0.73	3.66	0.27	1506
Mettre+X											
Child	0.00	7.14	0.00	14.29	57.14	0.00	14.29	7.14	0.00	0.00	14
Adult	2.86	2.85	7.14	8.57	52.14	0.00	25.00	0.71	0.71	0.00	140
Vouloir+X											
Child	8.00	8.00	4.00	0.00	64.00	4.00	12.00	0.00	0.00	0.00	25
Adult	1.59	3.97	17.46	10.32	55.55	2.38	8.73	0.00	0.00	0.00	126
C'est+X											
Child	0.00	5.00	0.00	7.50	27.50	15.00	0.00	0.00	42.50	2.50	40
Adult	3.16	10.53	0.00	10.53	50.53	11.58	0.00	0.00	13.68	0.00	95

* Adj: nominalized adjectives, Dem: demonstrative pronouns, Adv: adverbial clitic pronouns, Intr: interrogative pronouns, CNouns: common nouns, PNouns: proper nouns, CPP: clitic personal pronouns, Quant: quantifiers, SPP: strong personal pronouns, Num: numerals

Table 6 also shows that the children used a subset of the categories found in the mothers' distribution for two frames. For *Mettre+X*, three categories (adjectives acting as nouns, adverbial pronouns, strong personal pronouns) were absent from the children's data. They were relatively rare in the mothers' distribution (around 10% of the tokens in all). For *Vouloir+X*, there was one absent category, interrogative pronouns, in the children's distribution. This category also represented only 10% of the mothers' tokens. The last frame, *C'est+X*, displayed the same number of categories (7) for mothers and children. Their distributions differed, however: adjectives acting as nouns were absent in the children's distribution, and numerals were absent in that of the mothers.

The absence of a category in the children's distribution for a given frame apparently had no link to their ability *per se* to manipulate units from that category. The overall set of complements produced showed that they were able to use all the categories in the table. This was also confirmed by the fact that the children used all of these categories in at least one of the three frames (e.g., adjectives were not found with *Mettre+X* and *C'est+X* but were present with *Vouloir+X*). The reasons for these absences are therefore unclear. It is possible to consider that because the children produced fewer referring expressions, they had fewer chances of

diversifying their uses within each type of frame. This could be especially true for the categories that were rare in the mothers' distributions.

Concerning the weight of the categories within each specific frame and across all complements, common nouns were almost always the dominant category (except in the children's distribution for *C'est+X*; we will come back to this finding below). For the other frequently used categories, the variations depended on the dataset. Considering all of the children's complements, interrogative and clitic pronouns were the second and third most frequent categories, respectively; the order was reversed for the mothers. *Mettre+X* displayed similar characteristics to the overall distribution in the mothers' data (interrogative pronouns: Fisher's exact test $p = .47$; clitics: $p = .75$) and in the children's data (interrogative pronouns: Fisher's exact test $p = 1$; clitic pronouns: $p = .64$).

The *Vouloir+X* distribution was similar to that of all complements, notably the proportions of clitic pronouns in the children's data and of interrogative pronouns in the mothers' data. There were also some differences: adjectives (8%, Example 14) and demonstrative pronouns (8%) were among the most frequent categories in the child distribution, adverbial pronouns in the mother distribution (17.46%, Fisher's exact test $p < .0001$).

(14) Julien, 2;3, MLU 1.92
Jul 154 [ʒvø nə mɛm]
'je veux **le même**' 'I want **the same (one)**'

The high proportion of adverbial pronouns in the mothers' data can be explained by the fact that *vouloir* combines more easily with partitive complements than do other verbs like *mettre*, for instance.[10] And when partitive noun phrases are cliticized, they take on the adverbial form *en*, as in *tu veux du chocolat ?* (*'do you want some chocolate'*) → *tu en veux ?* (*'do you want some'*), an example not from our data. The adverbial pronoun is thus very similar to clitic personal pronouns here.

Finally, *C'est+X* exhibited more differences from the distribution of all complements. The first major difference was that clitic pronouns were absent in this frame, due to the fact that the subject and the verb together form a frozen unit. The mothers' distribution nonetheless showed some similarities since common nouns were the dominant category. In the children's distribution, strong personal pronouns had the highest proportion (42.50%); common nouns were in second position (27.50%). One can hypothesize that this frequent use of strong personal

10. The semantics of *vouloir* are highly compatible with complements referring to food, which may often be expressed with a partitive noun phrase (e.g., *some chocolate*, *cake*, *fruit*, etc.). As mentioned in Section 2.1, snack time was one of the situations in which the sessions were recorded. Partitives were therefore frequent in part of our data.

pronouns is linked to the cleft construction (see description in Section 2.2.2), where *X* is emphasized compared to the rest of the sentence, in such a way that the children would primarily use referring expressions belonging to categories that can be stressed.

3.3.2 *Distribution of referring expressions according to referential-chain position*
Here we look at whether referring expressions occur preferentially in certain positions in the referential chain that are dependent on the frame in which they occur. As above for dislocation (Section 3.2.2), first- and second-person references were not included in this analysis, since they act differently for reference introduction and maintenance. The resulting dataset consisted of 1479 referring expressions. Table 7 gives the distribution of the children's and mothers' referring expressions according to their position in the referential chain for the overall set of complements coded, as compared to the distribution of all referring expressions and in the three specific frames under study.

Table 7. Distribution (in percentage) of referring expressions according to their position in the referential chain, for all complements, *Mettre+X*, *Vouloir+X*, and *C'est+X*, used by the children and their mothers

		FM* %	SM %	REA %	REP %	Unct %	N=
All REs							
	Children	25.17	41.24	12.04	21.41	0.14	1462
	Adults	26.82	49.86	7.49	15.60	0.22	3576
All complements							
	Children	33.33	39.15	11.11	15.34	1.06	189
	Adults	34.88	42.56	10.08	11.86	0.62	1290
Mettre+X							
	Children	50.00	42.86	0.00	7.14	0.00	14
	Adults	31.39	40.15	13.87	13.87	0.73	137
Vouloir+X							
	Children	28.00	60.00	8.00	0.00	4.00	25
	Adults	38.33	39.17	12.50	10.00	0.00	120
C'est+X							
	Children	38.89	38.89	11.11	11.11	0.00	18
	Adults	31.34	44.78	5.97	17.91	0.00	67

* FM: first mention, SM: second mention, REP: repetition, REA: reactivation, Unct: uncertain

The analysis was conducted in three steps. First we compared the overall distribution of complements to the distribution of all referring expressions, regardless of their syntactic function. Next, we compared the distribution of the mothers' and children's complements. Then we looked at the distribution for the three verb frames selected.

Table 7 shows that the referring expressions in complement position appeared more frequently in first mentions (Fisher's exact test $p < .001$ for adults and children). Inversely, referring expressions were used significantly less often in subsequent mentions and in repetitions by the adults (Fisher's exact test $p < .001$ in both cases), and only in repetition by the children (Fisher's exact test $p = .036$; no significant difference for subsequent mentions $p = .634$). Adults used complements in reactivation more often than with all referring expressions (Fisher's exact test $p < .001$), whereas for children there was no significant difference between the two sets of data (Fisher's exact test $p = .81$).

The overall set of complements was very similar for the children and the mothers: referring expressions occurring in complement functions were mostly in subsequent mentions (around 40%), closely followed by first mentions (about 34%). Repetition and reactivation were less frequent (around 12% and 10% respectively).

Looking separately now at the three frames, we can see that they all had features in common with the overall distribution of complements: subsequent and first mentions were the two dominant categories, the former usually being more frequent than the latter.

The mothers' data exhibited relatively little variation between the entire set of complements and the distribution of the three individual frames: all three frames were statistically comparable to the overall set for all referential-chain positions (Fisher's exact test, *Mettre*+*X*: FM: $p = .45$; SM: $p = .64$; REP: $p = .49$; REA: $p = .18$; *Vouloir*+*X*: FM: $p = .48$; SM: $p = .49$; REP: $p = .65$; REA: $p = .43$; *C'est*+*X*: FM: $p = .60$; SM: $p = .80$; REP: $p = .17$; REA: $p = .39$). This appears to indicate that the specific nature of each verb frame does not entail a preferred position in the referential chain for its complements.

The children's distributions displayed a very similar pattern. Like their mothers, their behavior for all three frames was statistically comparable to the overall set of complements for all positions in the referential chain (Fisher's exact test, *Mettre*+*X*: FM: $p = .24$; SM: $p = .78$; REA: $p = .36$; *Vouloir*+*X*: FM: $p = .65$; SM: $p = .053$; REA: $p = 1$; *C'est*+*X*: FM: $p = .61$; SM: $p = 1$; REA: $p = 1$), except in the case of *Vouloir*+*X* where the absence of repetition led to a significant difference (Fisher's exact test, *Mettre*+*X*: REP: $p = .69$; *Vouloir*+*X*: REP: $p = .02$; *C'est*+*X*: REP: $p = 1$).

According to Lambrecht (1994), referring expressions used to introduce new referents are preferably common nouns in postverbal position. In our data, on the one hand the complement position entailed more first mentions than in the total set, and the complement referring expressions were indeed mostly common nouns, as seen in Table 6. On the other hand, even though subsequent mentions were less frequent than in the total set, they still corresponded to a substantial number of complements. One can thus wonder whether our data contradict Lambrecht's predictions. To go into greater depth regarding this apparent contradiction, we focused on the distribution of the two categories known to be the most representative for first and subsequent mentions, respectively, common nouns and clitic pronouns. Table 8 gives the distribution of common nouns by position in the referential chain for the children and their mothers, in the whole set of complements and in the three frames under study; Table 9 gives the distribution of clitic pronouns.[11]

Table 8. Distribution (in percentage) of common nouns, according to their position in the referential chain, for all complements, *Mettre+X*, *Vouloir+X*, and *C'est+X*, used by the children and their mothers

		FM* %	SM %	REA %	REP %	Unct %	N=
All complements	Children	35.05	36.08	13.40	15.46	0.00	97
	Adults	41.00	33.78	14.16	10.77	0.29	678
Mettre+X	Children	62.50	37.50	0.00	0.00	0.00	8
	Adults	40.28	29.17	13.89	15.28	1.39	72
Vouloir+X	Children	25.00	62.50	12.50	0.00	0.00	16
	Adults	42.65	30.88	14.71	11.76	0.00	68
C'est+X	Children	44.44	22.22	11.11	22.22	0.00	9
	Adults	30.00	42.50	10.00	17.50	0.00	40

* FM: first mention, SM: second mention, REP: repetition, REA: reactivation, Unct: uncertain

Table 8 shows that common nouns generally tended to be used more frequently in first mentions as compared to the overall set of referring expressions in complement position (see Table 7). This is especially visible in the mothers' data: the overall distribution of common nouns indicates that first mentions were dominant (41% versus 34.88% in Table 6, Fisher's exact test $p = .007$). Reactivation was also more frequent (14.16% versus 10.08%, Fisher's exact test $p = .009$); the two categories put together thus represented more than 50% of the common-noun

11. As seen in the previous subsection, there were no clitic pronouns for *C'est+X* due to the syntactic properties of this frame. The distribution is thus not detailed in Table 9 for this frame.

distribution. In light of these results, our data appear to be more in line with Lambrecht's predictions (1994): common nouns in the complement function are preferably used to (re)introduce a referent, and are less frequent with repetitions and subsequent mentions.

The children's distributions exhibited a somewhat different pattern. Their overall use of common nouns in first mentions (Fisher's exact test $p = .79$) and in reactivations (Fisher's exact test $p = .56$) was comparable to that in the entire set of referring expressions in complement position (Table 7), and the proportions of the two categories put together represented a little less than 50%. In other words, the children did not appear to favor the use of common nouns to (re)introduce a referent as clearly as did their mothers.

The mothers' use of common nouns in the three frames was statistically equivalent to their overall distribution,[12] which appears to confirm that syntactic frames and referential rank are not linked.

The detailed examination of the three frames for the children showed that with *Mettre+X*, five (62.5%) expressions were in first mentions, and three (37.5%) in second mentions. With *Vouloir+X*, four expressions (25%) occurred in first mentions, whereas ten (62.5%) appeared in second mentions and two (12.5%) appeared in reactivations. For *C'est+X*, we found four (44.4%) expressions in first mentions, two (22.2%) in both second mentions and repetitions, and one (11.1%) in reactivations.

A qualitative analysis of the complements of *Mettre+X* and *Vouloir+X* revealed a somewhat more complex picture than predicted by the preferred-argument structure and the communicative acts accomplished seem to have participated in the choice.

Subsequent mentions with *Mettre*+X occurred in conclusive utterances during play (such as puzzles and lotto), where, through naming, the children exhibited their uptake of referent labelling, as in Example 15.

(15) Clément, 2;3, MLU 2.28

Clément and his mother are doing a puzzle. She puts in one piece

Mot	c'est quoi c(e)t animal Clément?	'what is this animal, Clément?'
Clé	[leptiwajo]	
	'les p(e)tits oiseaux'	'the little birds'
Mot	alors.	'so'
Clé	[ja mi le ptiwajo]	
	'{tu as} mis les p(e)tits oiseaux'	'{you} put in the little birds'

12. Wilcoxon: Mettre+X: FM: $V = 43$, $p = .413$; SM: $V = 28$, $p = .700$; REA: $V = 45$, $p = .320$; REP: $V = 28$, $p = .700$; Vouloir+X: FM: $V = 54$, $p = .951$; SM: $V = 57$, $p = .807$; REA: $V = 55$, $p = .903$; REP: $V = 62$, $p = .583$; C'est+X: FM: $V = 35$, $p = .492$; SM: $V = 15$, $p = .232$; REA: $V = 39$, $p = .275$; REP: $V = 25$, $p = .845$

With *Vouloir+X*, a look at the utterance contexts revealed that these noun-based subsequent mentions with *vouloir* occurred in specific contexts, for instance, when the child answered a question or an offer (Example 16) or when he/she rejected an offer (Example 17).

(16) Léa, 2;2, MLU 2.4

Mot28	tu veux quoi?	'what do you want?'
Léa17	[ʒəvødypɛ̃avedybœ]	
	'je veux du pain avec du beurre'	'I want bread with butter'

(17) Julien, 2;3, MLU 1.92

Mot93	alors on va les mettre après	'so we'll put them in later'
Jul36	[vøpalekoʃɔ̃mwa]	
	'veux pas les cochons moi!'	'I don't want the pigs, me!'

Moving to clitic pronouns, Table 9 shows their distribution according to position in the referential chain.

Table 9. Distribution (in percentage) of clitic pronouns used by the children and their mothers, according to their position in the referential chain for all complements of *Mettre+X*, and *Vouloir+X*

		FM %	SM %	REA %	REP %	Unct %	N=
All complements	Child	10.53	63.16	10.53	10.53	5.26	19
	Adult	9.30	77.67	4.19	8.37	0.47	215
Mettre+X	Child	50.00	50.00	0.00	0.00	0.00	2
	Adult	12.12	72.73	6.06	9.09	0.00	33
Vouloir+X	Child	33.33	33.33	0.00	0.00	33.33	3
	Adult	0.00	100.00	0.00	0.00	0.00	6

* FM: first mention, SM: second mention, REP: repetition, REA: reactivation, Unct: uncertain

Referring expressions in subsequent mentions increased over those found in Table 7, for all verb frames, significantly so for the mothers, with 77.67% versus 42.56% (Fisher's exact test $p < .001$). For the children, we observed a total of only 19 clitic pronouns in the complement function. There were two (10.5%) occurrences in first mentions, twelve (63.16%) in second mentions, two (10.5%) in reactivations and two (10.5%) in repetitions.

Clitic pronouns seem to be preferably used in subsequent mentions by the mothers, and were much less likely to occur in the other positions, where they never represented more than about 10% of the data.

In the mothers' data, the pattern in the overall distribution of complements was very similar to those in the two specific frames. In all cases, subsequent mentions predominated, with over 70%; all of the other positions were relatively rare. The children's overall distribution went in the same direction. As for the two frames in question, there were too few occurrences to provide a conclusive analysis. However, the comparison of Tables 7 and 9 suggests that in the complement position, the subsequent-mention position is still the preferred one for clitic pronouns.

3.3.3 *Prosody in verb frames*

Here, we consider the prosodic contour of referring expressions embedded in the complement position of the verb frames. Our aim was to find out if they still vary with their position in the referential chain. Again, all referring expressions in the 8-dyad subcorpus were considered. In our prosodically analyzed data, we obtained very few occurrences of the selected verb frames. In the adult data, only two frames contained a referring expression as a complement: *C'est+X* (10 occurrences) and *Mettre+X* (9 occurrences). In the child data, all three frames were found: *C'est+X* (1 occurrence), *Mettre+X* (2 occurrences), and *Vouloir+X* (12 occurrences). We thus only analyzed one frame per participant group: *Mettre+X* for the adults and *Vouloir+X* for the children, in order to illustrate how prosody, referential-chain position, and verb frames may interact. Finally, for the adults and children, we analyzed the prosodic contours of the whole set of complements in our data subset to compare them across verb frames.

In the children's data, in first mentions, we found that the two referring expressions in *Vouloir+X* and the six occurrences in the overall distribution contained a prosodic movement. In subsequent mentions, for *Vouloir+X*, four referring expressions had a plateau and four had a prosodic movement; in the overall distribution, five had a plateau and four a movement. Thus, based on these cases, it seems that the situation in the studied verb frames was comparable to the prosody for the overall distribution of complements. Furthermore, this distribution does not contradict the findings for the set of all referring expressions in Table 1 (60.98% with a movement for referring expressions in FMs and 54.02% with a plateau for ones in SMs). This suggests that the prosodic contours of referring expressions vary with the position in the referential chain and not with the syntactic pattern.

In the adults' data, the two occurrences of referring expressions in the *Mettre+X* frame also contained a prosodic movement in a first mention, while two occurrences in a subsequent mention had plateaus and two had a prosodic movement. The results were equivalent to the child data. For the overall set of complements in first mentions, 22 of the 39 occurrences (i.e., 58.97%) had a movement, which differed from the children (whose 6 occurrences had a plateau), but was similar to the results for all referring expressions in first mentions presented in

Table 1 (50%). In subsequent mentions, 19 of the 35 occurrences (i.e., 54.29%) in second mentions had a plateau, which is equivalent to the children's results (5 out of 9 with a movement), but lower than the distribution for all referring expressions presented in Table 1 (72.69%).

This preliminary study suggests, as expected, that prosodic contours do not vary according to the syntactic frame in which they are embedded, but vary with the position in the referential chain, among other factors.

4. Discussion

First, our results for dislocations showed that the children used dislocation in a way comparable to what the adults did when they addressed the child. Dislocations occurred mostly in the subject function for both adults and children, and there was little variation between children and adults in the ratio of left dislocation to right dislocation, and in the position of dislocations in the referential chain. Concerning the direction of dislocation, right dislocation and left dislocation, as a whole, were equally frequent both in the mothers' productions and in the children's productions; but right dislocation tended to be more frequent with nouns, whereas left dislocation seemed to occur more frequently with third-person pronouns.

However, we observed some mother-child differences. The children obtained a higher rate of dislocation than the adults (27% versus 17%). De Cat (2007) found dislocation rates between 18% and 24% in adults' child-directed speech, and between 19% and 37% for children. Our results seem to match De Cat's quite closely, even if a comparison is difficult for methodological reasons. Indeed, De Cat (2007) also considered constructions in which an adverbial was detached as a dislocation, which we did not. Furthermore, the dislocation ratio in our data was calculated as a function of the number of referring expressions, whereas in other studies, it has been calculated as a function of the number of utterances. Our analysis showed that, although the children produced more dislocations than the adults, which is consistent with other findings in the literature for these ages, this cannot be solely due to overgeneralization. If it were, the children could be expected to be insensitive to discourse-pragmatic characteristics. In our case, the children obtained a similar distribution for the position in the referential chain (first mentions, second mentions, etc.) to that of the adults; they were also like the adults in the distribution of left dislocations and right dislocations, both as a whole and with regard to the position in the referential chain. These findings all suggest appropriate usage. Furthermore, an additional analysis allowed us to show that the children were sensitive not only to the discourse-pragmatic contexts of left dislocation and right dislocation, but that the type of utterance also played a role,

even for the children: right dislocation seems to be more frequent in interrogative utterances, whereas left dislocation seems to be so in declaratives. This also argues in favor of the hypothesis that interactional features were at play in our results. In our data, the mothers asked more questions than the children did (see De Cat 2007 for comparable considerations; see also Chapter 9, de Weck, Hassan, Heurdier, Klein, & Salagnac, 2021, on the influence of activity type).

Since our analysis of the referential-chain position, as well as our calculation of the distance between dislocations, suggested that the children's productions were not simple repetitions of the adults' productions; and since, as a whole, they appeared in the same structural forms and discursive contexts, we may assume that the children were sensitive to the discursive use of dislocation, in a way quite similar to the adults.

Nevertheless, from an information-structure point of view alone, it is difficult to explain the use of dislocation in all contexts. Studies like Pekarek Doehler's (2001) and Horlacher's (2015) showed that dislocation not only serves the needs of mutual positioning with respect to the conversation, but also indicates the relevance of a turn with regard to some preceding turn and manages the opening and closing of discourse topics as well as alternation of turn-taking. It would be very interesting to look into whether the children's more frequent use of dislocation could be better explained by also taking these factors into account.

As for the results on verb frames, formal characteristics seem to play a role in the choice of referring expressions in the complement function. The use of a particular frame seems to restrict the set of potential categories with which the referent may be realized. In line with our observations on the three frames we selected, some of the potential categories may be found across all frames (e.g., common nouns), while others seem to be specific to particular frames or frame groups (e.g., strong personal pronouns). Furthermore, the verb's lexical nature also appears to grant more or less weight to certain categories. For example, proper nouns were used with both *Vouloir+X* and *C'est+X*, but they were infrequent in the former case while being among the most frequent in the latter. This suggests that some frames (e.g., *C'est+X*) promote the use of certain categories (e.g., proper nouns), while others (e.g., *Vouloir+X*), make that use less probable.

Concerning discourse-pragmatic characteristics, our data suggest that the assumed link between syntax and information structure is more complex than usually stated in the literature. For complements, the proportions of first and subsequent mentions differed from their distribution for all referring expressions for adults. Children showed a significant difference for first mentions, but not for subsequent mentions. The preference for first mentions in complement position might be only partially acquired for the children. Moreover, even for the adults, the difference between the distribution of all referring expressions and the

distribution in complement position was less dramatic than expected. The results on the distribution of clitic pronouns and nouns, by type of frame and position in the referential chain, are less surprising: subsequent mentions appear to favor clitic pronouns, and first mentions to favor nouns. Nevertheless, a large number of nouns (around a third of the overall data) still occurred in subsequent mentions (for further discussion, see Chapter 3, da Silva-Genest et al., 2021).

The comparison between mothers and children in terms of the verb frames showed relatively little variation with respect to both referring-expression categories and their positions in the referential chain. With categories, the main differences observed were, firstly, that the children tended to use some of the mother's most frequent categories, and secondly, that they tended to omit categories that were infrequent in their mothers' data. By contrast, the high preference observed in the mothers' data for nouns in first mentions, and clitic pronouns in subsequent mentions, was not as strong in the children's distributions. Apart from the scarcity of data, and the fact that children this young are known to produce fewer clitic pronouns than adults, French object clitic pronouns being acquired even later than subject clitic pronouns, there seem to be multiple reasons for this difference. A qualitative analysis of the tokens in our data suggests that the specific communicative functions linked to the choice of a verb frame might play a role.

These partial divergences with the results of the literature bring to the fore the complexity of factors impacting the choice of referring expressions. They suggest that the usual model constructed on the basis of the referent's position in the referential chain (or its accessibility) does not fit with all the uses of referring expressions.

In our data, we can see that other specific pragmatic contexts, such as the actions currently being accomplished in the activity, can interact with discourse-pragmatic (accessibility) factors. Moreover, the qualitative observation of the verb frames also suggests that individual frames perform different communicative acts that may entail certain referential statuses for referring expressions.

Finally, for prosody, although we are far from having a precise view of children's prosody in reference, because we only considered referring-expression contours and we only distinguished plateaus and movements while combining all types of movements, we found that prosody varied with the position in the referential chain. We did not observe any significant differences between adults and children as to the proportion of movements versus plateaus across positions in the referential chain. And the adults produced more referring expressions with plateaus in subsequent mentions. Thus, the adults and the children seemed to behave in the same way with respect to the position in the referential chain. Our analysis of dislocated elements suggests that referential-chain position is not the

only parameter affecting the prosodic contour of referring expressions. Other discursive or interactional factors seem to account for some of the contours. Concerning verb frames, the prosodic contours of the referring expressions in the frames under study were comparable with those of the overall complements. Thus, as expected, prosody does not seem to vary with verb frames but rather with the position in the referential chain. More data would enable us to distinguish the different prosodic-movement types such as rising, falling prosodic accentuation, and their specific functions in discourse.

In sum, the quantity of data analyzed in this study does not allow us to draw strong conclusions. However, they seem to point to the following elements: by the young age of 2 years, children appear to be able to learn, from the scaffolding model provided by their parents, both the formal characteristics of referring expressions and the position in the referential chain. At this stage of language acquisition, by their use of dislocations and prosodic contours, they exhibited some form of sensitivity to discourse-pragmatic characteristics and information structure. The great similarity in terms of discursive sensitivity between the children and the adults is in line with a theory of acquisition whereby discursive and pragmatic competence is an early factor of acquisition. In addition, we were able to show that the specific nature of a verb frame can also constrain the choice of a referring expression. Thus, syntax does not appear to be in a one-to-one relationship with discourse, as the transparency postulated by Lambrecht (1994) suggests. Multiple factors may intervene in the production of referring expressions. Consequently, to obtain a full picture of the acquisition of referring expressions, it is important to take into account both the formal and the functional characteristics of the interactional context and the communicative acts accomplished.

In the future, it would be interesting, possibly using statistical models on larger corpora, to systematically investigate the interaction between formal and discourse-pragmatic characteristics and general and specific linguistic elements. This could improve our understanding of how these interactions work. Are these characteristics complementary or in competition, and in the latter case, which one(s) override the other(s)? In the same way, the different levels of functional characteristics could be considered in the use not only of referring expressions but also of syntactic constructions (i.e., what constrains the choice of a particular frame or construction). In this chapter, we only examined certain aspects of discourse-pragmatic characteristics. By taking other aspects into consideration, including those pertaining to interaction management such as the dyadic dynamics, and even aspects like the situation or the activity being carried out by the participants (see Chapter 9, de Weck et al, 2021), we could better grasp how discourse-pragmatic characteristics act and interact with formal characteristics in the acquisition of referring expressions.

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PART 2

The role of communicative experience

CHAPTER 7

The influence of dialogue in young children's uses of referring expressions

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Twenty-four dialogues between French-speaking children aged 1;10 to 2;6 and their more competent interlocutors were analyzed from the point of view of (1) the uses of referring expressions by both children and their interlocutors, according to the attentional and discursive status of the referent, (2) the immediate effect of the interlocutor's discourse on the choice of a referring expression; and (3) the dialogical relations of referring expressions. The main results confirmed the similarity of adults' and children's uses of third-person pronouns and showed that maintaining continuity in dialogue overrode the influence of forms in the interlocutor's discourse. Finally, a qualitative analysis highlighted the role of formats and more generally, patterns of dialogue in the language developmental process.

Keywords: dialogical relations, discursive status, attentional status, third-person clitic pronouns, nouns, demonstrative pronouns, formats, question, repetition, interlocutor's discourse

1. Introduction

This chapter is about the role of dialogue in young children's acquisition of pragmatic skills for using referring expressions, with a special focus on third-person pronouns.[1] After comparing the children's uses of referring expressions according to the referent's attentional and discursive status to their interlocutor's uses, the

1. This chapter deals only with reference to entities. For a discussion on the influence of child-directed speech on the way children refer to participants, see Caët, 2012.

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role of dialogue is considered from three perspectives: (a) Does the interlocutor's discourse have an immediate impact on the children's choice of referring expressions? (b) Do these referring expressions appear preferentially in certain dialogical relations? (c) Can we identify specific dialogical patterns that account for the acquisition of early pragmatic skills.

According to cognitive approaches to reference, the choice of a referring expression strongly depends on the accessibility of the referent (Ariel, 1990) or, in another theoretical perspective, of its givenness (Gundel, Hedberg, & Zacharski, 1993). Accessibility is related to the referent's cognitive status in the addressee's assumed mental model of the situation. The referring expression the speaker uses orients the addressee's interpretation and referent retrieval. Studies in experimental settings have shown that young children have trouble adopting the addressee's viewpoint (Campbell, Brooks, & Tomasello, 2000; Matthews, Lieven, Theakston, & Tomasello, 2006; Wittek & Tomasello, 2005). Yet children as young as age 2 are able to adjust their choice of referring expressions to the referents' status in the conversation. According to studies of various typologically different languages (Allen, 2000; Gundel & Johnson, 2013; Hughes & Allen, 2013; Salazar Orvig et al., 2010a; Skarabela, 2007; Chapter 3, da Silva-Genest, Salazar Orvig, Marcos, Caët, & Heurdier, 2021, and Chapter 4, Rezzonico, Vinel, de Weck, Hassan, & Salagnac, 2021), this ability pertains to the contrast between overt and covert forms, and weak and strong forms (e.g. clitic pronouns and verbal inflections vs. strong personal and demonstrative pronouns). Moreover, children's uses of referring expressions appear to be similar to their caregivers' and to reflect the conventions of their particular language (Guerriero, Oshima-Takane, & Kuriyama, 2006; Huang, 2011; Hughes & Allen, 2013; Paradis & Navarro, 2003).

In spite of this convergence of results, there are divergences as to the explanations given of the developmental process through which children grasp the values and uses of referring expressions. Formal and nativist approaches refer almost exclusively to cognitive development to account for this acquisition (see De Cat, 2015). In contrast, constructivist and interactionist approaches are challenged by this early competence. In this chapter we aim to show that children's participation in dialogue contributes to the acquisition of the ability to use referring expressions in terms of the accessibility or givenness of the referent.

According to some authors, the use of referring expressions partly depends on the interlocutors' immediately preceding utterances, via the questions they ask or via priming or repetition (see Section 3). We will begin by examining our data from this perspective (see § 3.1). However, we contend that even though the models and structures provided by the adults' utterances are undoubtedly at the core of acquisition, their "effectiveness" is explained by the fact they form part of "language games" (Wittgenstein, 1953), whereby the child has the opportunity to grasp not only the forms but also, and essentially, their contexts of use in dialogue.

Our hypothesis is based on the premise that adult-child dialogues are partly organized into "formats" (Bruner, 1975, 1983a) characterized by recurrent patterns in which the reciprocation of participant's roles takes place. Furthermore, in these contexts, adults scaffold children's contributions by adjusting their speech to the children's cognitive and linguistic level. In Section 3.2, this dialogical perspective is compared to the hypothesis of a direct impact of the interlocutor's utterance, via repetitions or answers. We propose a developmental model where children first depend on adult scaffolding and then gradually become increasingly independent from this support in their use of referring expressions.

Before analyzing the relations between the adult's discourse and child's choice of a referring expression, we begin by showing that, as noted for other languages, young French-speaking children and their adult interlocutors use referring expressions in similar ways. As discussed in Chapter 3 (da Silva-Genest et al. 2021), the crucial issue in French is the acquisition of clitic pronouns, in contrast to nouns and strong demonstrative pronouns like *ça ('that', 'this')*, which appear earlier. From a developmental point of view, the first uses of clitic pronouns are in continuity with the uses of omissions and fillers (Veneziano & E. Clark, 2016; Veneziano & Sinclair, 2000). From a cross-linguistic perspective, the use of clitic pronouns is similar to the use of other weak expressions in other languages, including verbal inflection in Spanish or Inuktitut, omission in Japanese, or full pronouns in English (Allen, 2000; Guerriero et al., 2006; Hughes & Allen, 2013; Paradis & Navarro, 2003).[2] From the onset, French-speaking children use third-person clitic pronouns, almost exclusively, to encode a previously mentioned referent, in contrast to nouns and demonstrative pronouns, which can appear in various contexts. In order to analyze this early specialization, we will first compare child and adult uses of third-person clitic pronouns to their uses of nouns and demonstrative pronouns.

2. Distribution and uses of referring expressions

The corpus[3] consisted of dialogues between 24 children aged 1;10 to 2;6 (MLU between 1.3 and 3) and their more skillful interlocutors, usually the mothers or sometimes the fathers. In addition, the study occasionally included siblings, the

2. There is considerable debate among Romanists about the status of subject clitic pronouns (Culbertson & Legendre, 2008; De Cat, 2005). Whether subject clitic pronouns are seen as full pronouns or as morphological inflections is not relevant to our purpose here.

3. The corpus of 24 dyads was drawn from the Paris Corpus, the Standardized Play Corpus, the Childcare corpus, the Nashawati corpus and the Salazar Orvig corpus. See Appendix I for further details.

observer, and other adults present in the verbal interactions, in order to respect the natural conditions of interaction. The dialogues included daily routines, and standardized or non-standardized free play at home and snack time.

2.1 The distribution of third-person pronouns, nouns, and demonstrative pronouns

Table 1 presents the frequencies of third-person clitic pronouns, nouns, and strong demonstrative pronouns among all the referring expressions produced by the children and their interlocutors. The clitic demonstrative pronoun *c'* ('*it*') in the construction *c'est* ('*it is*'), dislocations, fillers and amalgams, null forms and all other pronouns (interrogative, indefinite, relative, and possessive) were grouped together under 'other forms'.[4] A Wilcoxon test was run to compare children and their interlocutors.

Table 1. Distribution (in percentage) of the referring expressions for the children and their interlocutors

	Chi* %	Int %	Total %	W	P
C3PP	9.4	21.5	18.1	104	<. 0001 ***
Nouns	38.1	37.3	37.5	393.5	.3141
SDems	8.7	4.9	5.9	377.5	.4753
Other Forms	43.9	36.4	38.5		
N=	1998	5105	7103		

* Chi: children, Int: the children's interlocutors, C3PP: third-person clitic pronouns, SDems: strong demonstrative pronouns

As expected, the children produced a significantly lower proportion of third-person clitic pronouns than their interlocutors did, but similar proportions of nouns and strong demonstrative pronouns. Possible adjustment of child-directed speech to the children's level of linguistic development was assessed by focusing on pronouns as a particularly sensitive category. A Spearman rank correlation between

4. An inter-coder agreement test was conducted on the total DIAREF Paris corpus. Excerpts of 10% of referring expressions for each session were coded by a different member of the team. For categories of referring expressions the inter-coder agreement score was 95.81 and Cohen's kappa was 0.95

the proportion of third-person clitic pronouns in the interlocutors' speech and the children's MLU was not significant ($r_s = 0.139$, $p = .498$). These results suggest that more competent speakers' (adults and siblings) uses of pronouns or other referring expressions was not affected by children's linguistic development but by pragmatic or discursive factors.

2.2 Uses of referring expressions

Our previous research (Salazar Orvig et al., 2010a, 2010b) and Chapter 3 (da Silva-Genest et al. 2021) has shown that young French-speaking children, like children acquiring other languages, prefer weak expressions for the referents under focus and strong expressions for new discourse referents. This suggests that they use these expressions according to the accessibility of the referent for the interlocutor. The aim of the present section is to compare the children's and their interlocutors' uses of referring expressions. Like da Silva-Genest et al., we classified the attentional and discursive status of referents into four mutually exclusive categories:[5]

- **New**: the referent was totally new in the interaction.
- **Activated**: the referent was part of the ongoing activity or was inferable from the previous discourse but had not yet been mentioned.
- **Discourse-given**: the referent had already been mentioned by either the speaker or the interlocutor.
- **Reintroduced**: a thematic change took place between the targeted mention of the referent and the previous one.

The results are presented in Table 2. For the sake of clarity, we only show the detailed results for third-person clitic pronouns compared to nouns and strong demonstrative pronouns.[6]

5. The inter-coder agreement rate was of 86.97%, and Cohen Kappa was 0.796.

6. Table 2 also shows the percentage of other referring expressions for each category. However, this grouping lumps together a set of expressions (dislocations, clitic demonstrative pronouns, and relative, indefinite, numeral, adverbial, possessive, and interrogative pronouns) that are heterogenous both in their formal and functional aspects. In all of the tables, their total percentage is noted only to show the relative importance of the three types of referring expressions under focus in this chapter.

Table 2. Distribution (in percentage) of referring expressions for each attentional and discursive status of the referents, for the children and their interlocutors

		New %	Activated %	Discourse-Given %	Reintroduced %	Total %
Chi*						
	C3PP	0.9	3.4	13.6	3.4	9.4
	Nouns	60.1	31.2	34.4	47.2	38.1
	SDem	6.1	21.4	5.6	9.0	8.7
	Other RE	32.9	44.0	46.5	40.3	43.9
	Total N =	213	327	1225	233	1998
Int						
	C3PP	2.7	6.2	30.3	8.0	21.5
	Nouns	61.3	46.7	27.7	59.9	37.3
	SDem	2.8	9.4	4.5	2.9	4.9
	Other RE	33.2	37.7	37.5	29.2	36.3
	Total N=	705	743	3318	339	5105

* Chi: children, Int: the children's interlocutors, C3PP: third-person clitic pronouns, SDem: strong demonstrative pronouns, Other RE: Other referring expressions (Fillers, Null forms, Clitic demonstrative pronouns, dislocations and other pronouns, such as relative, indefinite, possessive pronouns)

We carried out binomial mixed-effect regressions fitted using the glmer function of lme4 R-package (Bates, Mächler, Bolker, & Walker, 2015), in order to assess the effect of the attentional and discursive status in the two groups (children and adult interlocutors). For each referring expression (as compared to all others), we assessed the effect of each type of context (as compared to all others). The regressions included two random-effect variables to control for the participant (the childrens' and their interlocutor's identity) and the session. The best fitting models are presented in Table 3. The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance (Hosmer, Lemeshow & Sturdivant, 2013).

Discourse-given was the most frequent context of occurrence for all types of referring expressions. Even though adults produced significantly more third-person clitic pronouns than children did, the children and their interlocutors exhibited similar trends: third-person clitic pronouns were more likely to encode discourse-given referents than other referents. Nouns were positively associated with new and reintroduced referents[7] and strong demonstrative pronouns were

7. Table 3 indicates a rather low C-value (0.66) for nouns. For Hosmer, Lemeshow and Sturdivant (2013) only C-values above .7 are reasonable. This suggests that other factors should be taken into account to accurately explain the choice of nouns.

Table 3. Regression tables for third-person clitic pronouns, nouns, and strong demonstrative pronouns for all referring expressions used by the children and their interlocutors

Fixed Effects	Est.	S.E.	z	p	Random Effects	Var.	S.D.	C-value**
Third-person clitic pronouns								0.78
Intercept	3.58	0.26	13.89	<.001	Participants	0.32	0.57	
Attentional and discursive Status (Discourse-Given)	1.68	0.23	7.06	<.001	Sessions	0.04	0.21	
Speaker (Int*)	0.62	0.29	-2.08	.037				
Discourse-Given: Int	0.44	0.26	-1.67	.095				
Nouns								0.66
Intercept	-0.67	0.09	-7.28	<.001	Participants	0.03	0.13	
Attentional and discursive Status (New)	1.06	0.15	6.93	<.001	Sessions	0.12	0.35	
Attentional and discursive Status (Reintroduced)	0.60	0.15	4.11	<.001				
Speaker (Int)	-0.20	0.08	-2.27	.023				
New: Int	0.22	0.18	1.23	.22				
Reintroduced: Int	0.60	0.18	3.23	.001				
Strong demonstrative pronouns								0.77
*Intercept	-3.31	0.22	-15.0	<.001	Participants	0.36	0.60	
Attentional and discursive Status (Activated)	1.55	0.18	8.52	<.001	Sessions	0.42	0.64	
Speaker (Int)	-0.03	0.23	-0.14	.887				
Activated: Int	-0.72	0.24	-3.05	.002				

* Int: the children's interlocutors

Number of observations: 7103, Grouping factors: Participants (including children and their interlocutors): 61; Sessions: 38.

** The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong.

*** The category in parentheses on fixed-effects rows indicates the category value compared with the intercept (reference level). For binomial factors, the reference level is the other factor.

associated with activated ones. These findings indicate that these French-speaking children were able to link the available referring devices to the dialogical context, and/or to the attentional status of the referent.

3. Towards a dialogical account

How are these early pragmatic skills acquired? Currently there is no unified account of this process. Some studies have put forward the effects and interplay of factors such as linguistic structure, the child's cognitive development, or his/her linguistic experience (see Allen, Hughes, & Skarabela, 2015; De Cat, 2013; Gundel & Johnson, 2013; Hickmann, Schimke, & Colonna, 2015). Setting aside the impact of linguistic structure, which can only be assessed via cross-linguistic studies, one recurrent issue is whether such early pragmatic skills reflect a specific level of socio-cognitive development or are the outcome of linguistic experience.

According to Gundel and her co-workers (Gundel & Johnson, 2013; Gundel, Ntelitheos, & Kowalsky, 2007), children are capable of making "reasonable assumptions about the addressee's memory and attention state [which] involves the attribution of mental states to others" (Gundel & Johnson, 2013, p. 53). This capacity is based on an implicit and relatively mechanical theory of mind, also qualified as "procedural". However, "procedural" knowledge implies communicative experiences with more competent partners.

As mentioned at the beginning of this chapter, the role of linguistic experience can be conceptualized in terms of the direct impact of adult utterances on the child's subsequent utterances, or in terms of referring patterns that children incorporate throughout early childhood. In this section, we address these two standpoints.

3.1 The immediate impact of the interlocutor's discourse

The immediate effects of the interlocutor's discourse can be observed both when children answer questions and when they immediately take up adult forms. The influence of questions on the choice of referring expressions has occasionally been analyzed for naturally occurring dialogues. This issue was first studied from the perspective of informativeness (Allen, 2000; Clancy, 1993). Referents that were replies to questions (i.e. *John* as an answer to *who came?*) were considered informative because the identity of the referent was only partially established by the question. Therefore, children were likely to produce overt or strong expressions when answering questions. In later studies, Allen and her colleagues discarded this feature because it overrides the other accessibility factors (see Hughes & Allen, 2006). In our work, we have shown that subject pronouns are seldom elicited by questions in French (Salazar Orvig et al., 2010b).

However, these earlier studies focused only on referring expressions elicited by questions, without taking into account the fact that questions shape the wording of the answers. The focus of a question frames the form of a referring expression

in several ways. A referent can be the topic of the question in predicate-focused questions (e.g. *what is the boy doing?*). It can be elicited by argument-focused questions (e.g. *who is coming*? *what do you want*?). Or it can be indirectly brought up by general questions (e.g. *what happened?*). Several studies have shown that these features may interact with the prior mention and/or perceptual availability of the referent (Campbell et al., 2000; Wittek & Tomasello, 2005; Matthews et al., 2006; Salomo, Lieven, & Tomasello, 2013). Children as young as 2;6 appear to prefer null or weak forms when the question mentions the referent as the topic as compared to when it solicits utterances or arguments. Salomo et al. (2013) showed that when the target referent was a patient (and not the topic), young children often fail to provide enough information when responding to predicate and general questions. They suggest that children may lack experience as to what is expected for answering these kinds of questions.

Children might also take up the referring expressions used by their adult interlocutor in immediately preceding utterances. Repetition is known to play an important role in the construction of common ground (E. Clark & Bernicot, 2008), and more specifically, as a first form of cohesion (Halliday, 1979; Salazar Orvig, 2000). A quite different view of repetition has been put forward in the account of mechanical alignment through priming (Pickering & Garrod, 2004). For Matthews et al. (2006), this mechanism could account for the fact that 2-year-old children are sensitive to prior mentions of a referent but not, as 3-year-olds are, to perceptual availability. Clancy (2008) ascribes to priming the acquisition of argument marking in Korean. However, although her results support her hypothesis, she insisted on the fact that other factors limit the action of priming, the most important of which "must be whether the reuse fits with the child's communicative goals" (Clancy, 2008: 115).

We explored the hypothesis that the adult's utterances have a direct impact on the child's subsequent use of referring expressions. We considered (a) the similarities in form and category between the expression used by the child and its immediate antecedent in the interlocutor's speech, and (b) the dialogical relations between utterances, in terms of contingency.

3.1.1 *Data analysis*

In this section, we present coding categories and statistical methods.

Form and category of antecedents

A child's use of a referring expression may be influenced by lexical choices and syntactic forms in the interlocutor's utterances. At a formal level, third-person clitic pronouns could be prompted more easily by the interlocutor's uses because alignment with the syntactic structure of the interlocutor's utterance for the child

would involve the same expression in the same syntactic function. For example, *il* (*'he'*) as subject in the interlocutor's utterance would entail the use of *il* as the subject in the child's utterance. In order to assess this effect, we coded each referring expression used by the child according to the form and grammatical category of its antecedent in the interlocutor's discourse.[8] Two possibilities were considered for the correspondence with the antecedent's forms: **same form** and **different form**.

– **Same form** included both total correspondence between the child's and the interlocutor's forms (i.e. *il* for *il*, *l(e)* for *l(e)*, etc.), and partial correspondence whenever the child took up part of a dislocation used by the interlocutor or *vice versa*, as in Example 1 below.

(1) Alice, 2;3, MLU 2.44[9]

Mot70	il est où papa. (i)l est là-bas?	'where is daddy? is he there?'
Ali26	[la] 'là'	'there'
Mot71	***(i)l est*** dehors?	'***is he*** outside?'
Ali27	[***le*** dəɔʁ papa] '***(i)l est*** dehors papa'	***'he is*** outside dad'

If the expression had no antecedent in the interlocutor's discourse, we searched for a non-coreferential occurrence of the same form in the interlocutor's immediately preceding turns (up to 4 turns back). These cases were rare (3%).

– **Different form** included all expressions where the antecedent appeared in a different form from the expression used by the child (e.g. *le* after *il*, a third-person clitic pronoun after a noun, etc.).
– We also looked for two options for grammatical categories, whatever the form: **same category** and **different category**.

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8. Data on the form and category of the interlocutor's antecedents were automatically retrieved in the coding file, so the inter-coder agreement rate was the same as for the list of referring expressions.

9. Example captions indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. The first three letters of the child's first name are given in lowercase (e.g. Ali for Alice), Mot stands for mother and Fat for father. When the children's utterances are transcribed phonetically (between square brackets [ ]), the interpretation in French is given below in inverted commas. An approximate English translation is also given between inverted commas. Braces indicate uncertain transcriptions or alternative interpretations. {X} stands for uninterpretable or inaudible segments. For more details on transcription conventions, see Appendix II.

- **Same category** included cases where the antecedent belonged to the same grammatical category as the child's expression (i.e. *i* for *le*, or *elle* for *il*, all of which are third-person clitic pronouns).
- **Different category** included cases where the antecedent belonged to a different grammatical category than the child's expression (e.g. a noun for a third-person clitic pronoun). Dislocations after single expressions or vice versa were considered different categories.

Dialogical relations: Coding

We also explored a second kind of relation to the interlocutor's discourse: the contingency context in dialogue. Five types of contexts were identified:[10] **Repetition**, **Elicitation**, **Answer Continuity**, **Plain Continuity,** and **Contrast**. In the first three types the children's contributions were induced by their interlocutors' discourse.

- **Repetition** occurred in cases where the referent was mentioned in an utterance that partially or fully repeated the interlocutor's utterance (see Example (1) above.
- **Elicitation** occurred in cases where the referent was the focus of the adult's question, as in Example (2) below.

(2) Margaux, 2;3, MLU 2.62

Mot37	qu'est-ce que tu veux?	'what do you want?'
Mar30	***[gato]***	
	'gâteau'	'***cookie***'

- In **Answer continuity**, the referent was the topic of a question, as in Example (3) below:

(3) Maxime, 2;3, MLU 1;4

Mot8	qu'est-ce qu'***il*** fait ça	'what is ***h***e doing, that'
Max6	[***i***dɔʁ]	
	'***i(l)*** dort'	'***h***e is sleeping'

The last two categories correspond to non-induced mentions of referents, i.e. not constrained by the interlocutor's utterance.

- **Plain continuity**: the utterance added a new predicate to the given referent, without perspective or genre shifting, as in Arn35 Example (4) below:

10. The inter-coder agreement rate for dialogical relations was 87.24%, and Cohen's kappa was 0.843.

(4) Arnaud, 2;3, MLU 2.96

Arn34	[wɛlɛklɛmari?]	
	'où ***elle*** est Clai(re)-Marie?'	'where is Claire-Marie?'
Mot52	***elle*** va revenir dans un petit moment. tu finis ta tarte aux pommes	'***she*** is coming back soon. finish your apple pie'
Arn35	[***l***epati]	
	'***(e)lle*** est pa(r)tie'	'***she*** is gone'

– **Contrast**: the utterances introduced a contrast in the dialogue, including a change in topical status, a perspective shift, an opposition, or a contradiction as in Léa158 in Example (5):

(5) Léa, 2;2, MLU 2.4

Mot179	et ***le prince il*** est beau ***le prince***?	'and ***the prince*** is ***he*** handsome ***the prince***?'
Léa157	[wi]	
	'oui'	'yes'
Mot180	c'est vrai?	'really?'
Léa158	[əpɛ̃ ijepaʒãti ləpɛ̃s dəpuselina]	
	'*F*[11] ***p(r)in(ce) il*** est pas gentil ***le p(r)ince*** de Poucelina'	'***F prince he*** is not nice Thumbelina's ***prince***'

Statistics

We used mixed-effect binomial logistic regression fitted using the glmer function of lme4 R-package (Bates et al., 2015) in order to assess the effect of the following factors: the interlocutor's forms, the interlocutor's category, child's repetition, elicitation,[12] and continuity (both answer continuity + plain continuity). In order to further assess these effects, binary partitioning trees were drawn with the ctree function included in the "party" R package (Hothorn & Zeileis, 2015).

3.1.2 *Results*

In this section, we present the results for the impact of the interlocutor's antecedent on referring expressions use (Tables 4 and 5) and dialogical relations (Table 7),

11. In the interpretations and translations of children's utterances, 'F' stands for a filler syllable.

12. Elicitation was not assessed for third-person clitic pronouns because no pronoun was elicited by a question.

and the interaction between the two (Figures 1 to 3). The best fitted models for these factors are presented in Table 6).

Form and category of the interlocutor's antecedents: Results

Tables 4 and 5 show that formal links, although very frequent, were not the most prevalent in the children's discourse.

Table 4. Distribution (in percentage) of children's referring expressions for discourse-given referents, according to their correspondence with the form used by their interlocutors

	Same Form			Different Form	
	Total Correspondence %	Partial Correspondence %	Total %	%	N=
C3PP*	26.5	18.1	44.6	55.4	166
Nouns	42.6	6.5	49.2	50.8	413
SDem	18.5	12.3	30.8	69.2	65
All RE	28.2	12.5	40.8	59.1	1211

* C3PP: third-person pronouns, SDem: strong demonstrative pronouns, RE: referring expressions

Table 5. Distribution (in percentage) of children's referring expressions for discourse-given referents, according to their correspondence category of interlocutor's antecedents

	Same category %	Different category %	N=
C3PP*	45.8	54.2	166
Nouns	49.9	50.1	413
SDem	20.0	80.0	65
All RE	34.0	66.0	1211

* C3PP: third-person clitic pronouns, SDem: strong demonstrative pronouns, RE: referring expressions

These results can be seen as a glass that is either half full or half empty. As a whole, 40.8 % of the children's referring expressions corresponded partially or totally to the interlocutor's forms (Table 4), but neither the third-person clitic pronoun, nor the nouns or the strong demonstrative pronouns were significantly affected by the form of the antecedent (see Table 6). In contrast, children's third-person clitic pronouns and nouns were likely to be preceded by an antecedent of the same category in the interlocutor's discourse while strong demonstrative pronouns tended not to be preceded by a similar expression (Tables 5 and 6).

Table 6. Regression tables for third-person clitic pronouns, nouns, and strong demonstrative pronouns for discourse-given referring expressions in the children's discourse

Fixed Effects	Est.	S.E.	z	p	Random Effects	Var.	S.D.	C-value*
Third-person Clitic Pronouns								0.84
Intercept	-2.71	0.28	-9.77	<.001	Children	0.37	0.60	
Interlocutor's form (Same)**	-0.13	0.24	-0.56	.056	Sessions	0.84	0.91	
Interlocutor's category (Same)	0.69	0.24	2.90	.004				
Repetition	-0.23	0.29	-0.77	.441				
Continuity	1.23	0.22	5.54	<.001				
Nouns								0.76
Intercept	-1.15	0.15	-7.52	<.001	Children	<.001	<.001	
Interlocutor's form (Same)	0.003	0.19	0.02	.999	Sessions	<.001	<.001	
Interlocutor's category (Same)	1.45	0.18	7.3	<.001				
Repetition	-0.12	0.18	-0.65	.515				
Continuity	-0.78	0.17	-4.42	<.001				
Elicitation	2.03	0.27	7.51	<.001				
Strong demonstrative pronouns								0.80
Intercept	-2.77	0.32	-8.67	<.001	Children	0.35	0.59	
Interlocutor's form (Same)	0.178	0.38	0.473	.636	Sessions	0.26	0.51	
Interlocutor's category (Same)	-0.85	0.41	-2.10	.036				
Repetition	0.05	0.34	0.15	.879				
Continuity	-1.58	0.46	-3.431	<.001				
Elicitation	-0.33	0.51	60.66	.513				

Number of observations: 1211; Grouping factors: children: 24, sessions: 38

* The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas C-values above .7 are reasonable and above .8 are strong.

** The category in parentheses on fixed-effects rows indicates the category value compared with the intercept (reference level). For binomial factors, the reference level is the other factor.

Let us now turn to the use of these referring expressions in dialogue.

Dialogical relations: Results

Table 7 presents the distribution of the children's referring expressions for given referents, according to the type of dialogical relations. We refer also to the models presented in Table 6, which include the assessment of the impact of dialogical relations on the use of these three types of referring expressions.

Table 7. Distribution (in percentages) of the children's referring expressions for given referents, according to the type of dialogical relations

	Induced contribution			Non-induced contribution		
	Repetition %	**Elicitation %**	**Answer-Topic Continuity %**	**Plain Continuity %**	**Contrasted dialogical relations %**	**N=**
C3PP*	13.9	0	18.7	39.8	27.7	166
Nouns	27.6	17.2	2.4	17.4	35.3	413
SDem	26.1	9.2	4.6	4.6	55.4	65
All RE	23.4	8.2	8.7	23.9	35.9	1211

* C3PP: third-person clitic pronouns, SDem: strong demonstrative pronouns, RE: referring expressions

Tables 6 and 7 paint a complex picture. Referring expressions were not evenly distributed across the dialogical contexts. Non-induced contributions (plain continuity and contrasted dialogical relations) were the most frequent (60%), whereas answers (17%) were the least frequent.[13] Nearly 25% of the referring expressions appeared in a context of repetition. However, as shown in Table 6, this factor does not appear to affect the choice of any of these referring expressions.

Third-person clitic pronouns were never elicited by a question, whereas nouns were likely to appear as an answer. The picture was almost the opposite when the referent was the topic of a question. In this case, third-person clitic pronouns were frequent and nouns were clearly less frequent. Similarly, plain continuity in non-induced contributions promoted the use of third-person clitic pronouns but not of nouns or strong demonstrative pronouns. Moreover, the highest percentage of third-person clitic pronouns occurred for continuity, when considering together both plain continuity and answer-topic continuity.

To summarize, the use of third-person clitic pronouns, in contrast to that of nouns and strong demonstrative pronouns, was generally associated with

13. In our corpus, most questions were yes/no questions.

continuity, and rarely occurred in constrained contexts such as questions or repetitions.

3.1.3 *Interaction between interlocutor's antecedents, and dialogical relations*

Figure 1 corresponds to the binary partitioning tree drawn to assess the weight of significant factors in the choice of third-person clitic pronouns. Each final node indicates the contrast between the presence of a third-person clitic pronoun and the presence of any other referring expressions (All Other). As we can see in Figure 1, the proportion of third-person clitic pronouns was always higher in the left nodes (nodes 4, 5, 7 and 8), which correspond to referents in continuity, than in the right nodes (10 and 11). This means that continuity was the factor accounting for most of the uses of third-person clitic pronouns by children. When the referent was in continuity, the category of the antecedent was the second most influential factor (node 2) but it did not necessarily entail the repetition of the form (e.g. *le* after '*il*').

Figure 2 presents the binary partitioning tree for nouns. Nouns, for discourse-given referents, involved a different hierarchy among the relevant factors for which the antecedent category and elicitation prevailed over continuity.

In Figure 3 we can see that continuity was the main factor, but in contrast to third-person clitic pronouns, it was a negative factor in the use of demonstrative pronouns.

The position of continuity as a secondary factor for nouns (Figure 2) or as an excluding factor for demonstrative pronouns (Figure 3), compared to its primary position for third-person clitic pronouns suggests that, for the latter, continuity

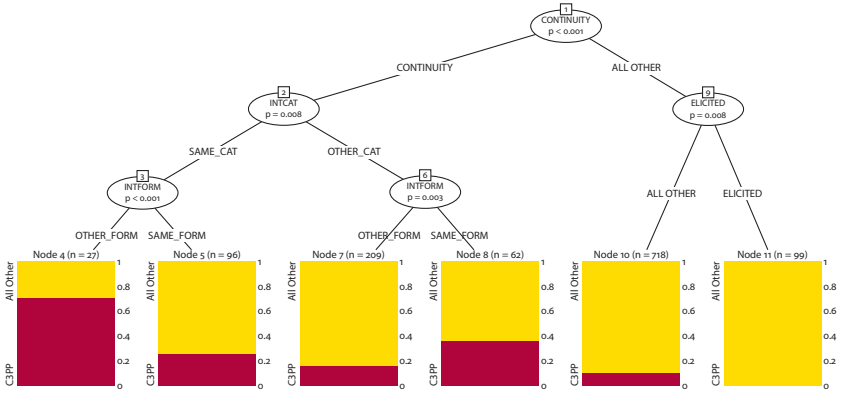

Figure 1. Binary partition tree for third-person pronouns for discourse-given referents

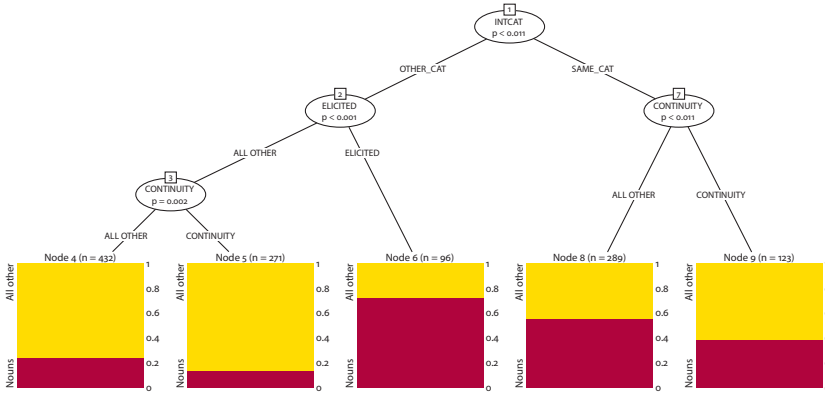

Figure 2. Binary partition tree for nouns for discourse-given referents

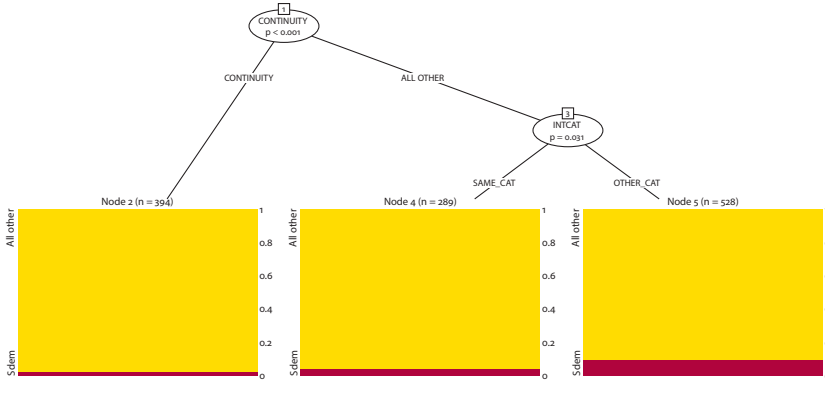

Figure 3. Binary partition tree for strong demonstrative pronouns for discourse-given referents

is a crucial factor. Even though the children often used an expression of the same grammatical category, the frequent difference in form shows that the children's own wording prevailed over their interlocutor's. Let us remind that this predominance of continuity (as defined here) over more constraining contexts concerns specifically the choice of devices for referring to a discourse-given referent. Therefore there is no contradiction with studies showing that questions (e.g. Salomo et al., 2013) or repetitions (e.g. E. Clark & Bernicot, 2008) support children's participation in dialogue, either by prompting or by ratifying their contributions.

These nuanced results argue against the priming hypothesis or other mechanistic analyses based on a synchronic approach to dialogue, which do not completely explain the children's uses of referring expressions. We therefore take up a second hypothesis.

3.2 Patterns in dialogue

Formats help children learn how to participate in dialogue, including how to answer questions. The interlocutor's linguistic forms also provide children with material for building their own utterances. Given that from the very beginnings of linguistic communication, "scaffolded" dialogues are present in adult-child interactions, two-year-olds have already been exposed to many uses of third-person clitic pronouns. They gradually become able to use these forms without adult support.

Levy (1989) showed that in the well-known monologues of Emily (Nelson, 1989), apparently anaphoric uses of pronouns reproduced the referential chains previously produced by the adult. In this context, the child probably learned "ways of doing" (procedural behaviors) before grasping the anaphoric value of pronouns. In the same vein, Levy and Nelson (1994) proposed a theory of word acquisition (more specifically, for causal and temporal words) wherein their use in activities and dialogues provides the basis for the acquisition of meaning.

Beyond the particular context analyzed by Nelson (monologues), the interactionist approach (Bruner, 1983a; Vygotsky, 1933/1962) and the dialogical approach (Bakhtin, 1979/1986) seem particularly helpful in explaining the acquisition of pragmatic skills, because both embed the child's behavior in contextualized models of language use. An example of this perspective appears in Clancy (1996). She proposes that children can abstract acceptable realizations of a predicate across argument structure alternations, "thanks to the juxtaposition of utterances with the same predicate in conversation" (Clancy, 1996, p. 35). The acquisition of argument structure is therefore a jointly achieved co-construction, interpretable, according to this author, in terms of Vygotky's theory of cognitive development. Clancy started from naturally occurring mother-child dialogues and extracted several series of utterances in which the mother included alternations between nominal or pronominal forms, and null forms, depending on discursive factors. The child is thus exposed both to a range of argument structure realizations and to the contextual factors responsible for their selection. This promotes the acquisition of appropriate uses of referring expressions.

We looked in our corpus for sequences that, even if they did not exhibit the strong regularities found in Clancy's data, might contain equivalent phenomena. If this is a possible route for acquisition, we should observe similar traces of the way children might lean on their experiences of alternations between nominal and

pronominal forms. We used a qualitative method to examine the data in order to identify the various possible steps from simple repetition to more autonomous uses of referring expressions. The sequences we discuss are presented in three sets. The first set illustrates immediate or distant uptake of the structure produced by the interlocutor (Examples 6–7). The second illustrates the role of questions (Examples 8–10). The third shows how non-induced, apparently autonomous contributions may in fact depend on utterances the interlocutor had produced in earlier sequences (Examples 11–13).

Immediate or distant uptake

(6) Julien, 2;3, MLU 1.92

Mot422	oh il se roule par terre et il se roule là par terre et ***il chante***	'oh he rolls over on the floor and he rolls over on the floor there and ***he sings***'
Mot423	***i(l) chante***? tu chantes toi aussi? qu'est-ce que tu chantes?	'***is he singing***? do you sing too? what do you sing?'
Jul144	*[iiʃã]* ***'i(l) i(l) chan(te)'***	***'he he sings'***

In Example 6, the immediate uptake of his mother's utterance helps the child to associate, like her, the subject pronoun and the predicate (even if he fails to answer his mother's question). This phenomenon can also be observed when children reuse an utterance in a different context as in Example 7.

(7) Thibault, 1;11, MLU 1.56

Thibault and his father are playing at a table with several toys, including a toy car.

Thi36	[vwaty] 'voiture'	'car'
Fat22	tiens	'take (it)'
((The father hands him the car and the child rolls it. The car falls off the table))		
Fat23	là ***elle est tombé***	'there ***it fell***'
Thi37	***[ɛnetõbe***[14] ***la vwaty]*** ***'elle est tombé la voiture'***	***'it fell the car'***
Fat24	oui elle est tombée.	'yes it fell'
They focus on another referent. Several turns after, the father picks up the car		
Thi42	***[ɛnetõbe]*** ***'elle est tombée'***	***'it fell'*** ((the car fell off the table))

14. The form [ɛn] in this utterance was considered as a pronoun and not as a filler because it is a phonological approximation of the adult target [ɛl]

In Thi36, the child refers to the car with a one-word utterance. In Fat23, the father uses a third-person clitic pronoun to comment on the car's falling. The child (Thi37) relies on his father's wording and adds, in a dislocated position, the noun he had previously used. The father confirms with a single pronoun. Several turns later and after focusing on other topics, the child again comments on his father's action by repeating an earlier utterance. In this context, we can observe both a first, scaffolded, use of a third-person clitic pronoun but in a dislocated structure, and then a not fully induced production, in a different context, still associated with the same referent.

Answering questions

When third-person clitic pronouns appear in the context of answering a question, they encode the topic common to the question and answer. One of the ways children might learn how to answer is by taking up the components of the question:

(8) Clément, 2;3, MLU 2.28

Mot102	un animal. ***i(l) s'appelle*** comment?	'an animal. what ***is it called***?'
Cle98	[***isapɛl*** lə / ima]	
	'***i(l) s'appelle*** le / (an)ima(l)	'***it's called*** the / animal'

In his answer to this argument-focused question, the child takes up both the topic and the predicate, and simultaneously changes the role of the noun *animal* to fill the elicited slot, even though this does not fit his mother's expectations. This tight link between question and answer probably has its roots in early formats where children learn to answer specific questions (Ninio & Snow, 1996). Example 9 presents two distant sequences of question-answer sequences.

(9) Elodie, 2;3, MLU 2.04.

At snack time, Elodie and her mother play at hiding and showing their hands

Mot71	ben où elles sont les mains à Elodie?	'so where are Elodie's hands?
Elo56	[**pati mam**ã / papati mamã]	
	'***partie ma main*** /pas partie' ma main'	'***gone my hand*** / not gone my hand'
Elo57	[pati]	
	'partie'	'gone'
Mot72	elles sont parties? voilà elles sont parties	'they are gone? there they are gone'

In the playing session, the mother and child are playing with a toy truck

Mot122	ben il est où le camion?	'so where is the truck?'
Elo85	[***i pati***]	
	'***il (est) pa(r)ti***'	'***it (is) gone***'
Mot123	il est parti le camion?	'it's gone the truck?'

In the first situation, the mother and child are playing at hiding their hands. Gestures are associated with the question *où elles sont? ('where are they ')*, Mot71) and the answer [*pati*] *'parties'* ('gone', Elo56). During this game, the mother uses dislocations or third-person clitic pronouns and the child uses null forms. During the following play session, the mother again asks the same type of question, *il est où? ('where is it?')* about a new referent. The child relies on the same kind of answer [*i pati*] with the same predicate used in the previous game and the pronoun her mother just used in her question. This type of routine is probably the basis of more general question-answer relations, as in Example 3. Predicate-focused questions provide a frame where children can specify a new predicate while maintaining continuity of topic. This is the case in Example 3 where Maxime takes up the third-person clitic pronoun and substitutes the pro-verb '*fait*' ('*doing*') of his mother's question by a specific verb '*dort' ('sleeping')*. This is why answers appear to be good candidates for first uses of pronouns: children are scaffolded both by the illocutionary force and the form of questions. This gives children the opportunity to participate in the dialogue by reusing the interlocutor's wording to build a new utterance. This double process is clearly visible in Example 10.

(10) Loli, 2;3, MLU 2.94

Lol18	[mamã lɛu papa]	
	'maman (i)l est où papa?'	'mommy. where is daddy?'
Mot21	t(u) as d(é)jà demandé. il est à son ***tra(vail)*** /..?	'you already asked. he is at ***work***'
Lol19	[sõ byʁo]	
	'son bureau'	'his office'
Mot22	il est à son bureau oui. c'est quoi le bureau? qu'est-ce qu'i(l) fait au bureau?	'he is at his office, yes. what is the office? what does he do at the office?'
Lol20	[il kʁava]	
	'il trava(ille)!'	***'he works!'***

Lol20 answers a predicate-focused question by using a previous contribution of her mother (Mot21, the noun *travail, ('work')* in the corresponding verb. At the same time, she takes up the third-person clitic pronoun used by her mother in Mot21 and 22. The interlocutor's utterances appear to offer a resource for building the child's own utterances while being scaffolded by questions.

Autonomous uses are anchored in previous sequences

In the least induced form of continuity, we observed children's production of third-person clitic pronouns with no influence from the interlocutors' earlier utterances.

(11) Cécile, 1;11, MLU 2.83

Mot2	de quelle couleur est cette vache?	'what color is this cow?'
Cec 2	[blã] 'blanc'	'white'
Mot3	oui	'yes'
Cec 3	***[ilamal]*** ***'il*[15] *a mal'***	***'it is hurt'***

In this example, the child initiates a new predication about the referent and uses a third-person clitic pronoun after her mother uses a noun. Because this sequence occurred at the beginning of a session, the child's use of a third-person clitic pronoun may be considered as not induced. At the same time, this use is probably connected to previous conversational experiences and could be the result of the accumulation of a series of past co-constructed experiences. Examples 12 and 13 illustrate, in one particular dialogue, how these processes may evolve on a larger scale.

(12) Julien, 2;3, MLU 1.92

Jul51	[madamipat][16] 'madame i(l) part' ((Mother nods))	'(the) lady she leaves'
Jul52	[lepatiemene] '***elle est partie promener***'	'***she left for a walk***'

Jul52 also seems a good example of an autonomous, monological contribution in which the child first mentions a referent and then adds a further, new predication. However, Jul52 is in fact the outcome of several earlier sequences, reproduced in Example 13:

(13) Julien, 2;3, MLU 1.92

Jul4:	[ladam] 'la dame'	'the lady'
Mot6:	la dame elle est partie	'the lady is gone'
Jul5:	[uladam?] 'où la dame?'	'where (is) the lady?'
Mot7:	elle est partie sur le balcon se promener un peu	'she went out onto the balcony to take a little walk'
(…)		

15. This gender error (*il* for *elle*) does not show up in the English translation.

16. In the Childcare corpus (see also Example 3) we purposely had the observer leave the room after starting up the camera. This protocol elicited numerous questions from the children about the "lady" and her disappearance.

Jul6:	[ilotomadam? ileulœmadam]	
	'il est où madame? 'il est où le madame?' ((il regarde le balcon))	'where is lady? where is the [masculine form] lady?' ((looking towards the balcony))
Mot12:	elle est sur le balcon je t'ai dit	'she is on the balcony I told you'
(…)		
Jul10:	[leumadameur]	
	'l'est où madame est {oùr}?'	'where is the lady {where} is?'
Mot18:	hein?	'what?'
Jul11:	[madamelur]	
	'madame est {XX}'	'lady is {XX}'
Mot19	elle est partie dans le sur le balcon. elle est en train de regarder ce qu'y a dehors et puis elle va revenir te voir, pour te faire coucou d'accord?	'she is gone out onto the balcony. she is looking around outside and then she will be coming back to see you to say hello to you. ok?'
Jul12:	[itasokuku]	
	'{xxxcoucou}'	'{xxx hello}'
(…)		
Jul14:	((pointe le balcon)) [ekakɔ̃]	((he points to the balcony))
	'F balcon'[17]	'F balcony'
Mot28	voilà sur le balcon	'right, on the balcony'
Jul15	[kekuku]	
	'{faire} coucou'	'{say} hello'
After several topic changes		
Jul41:	[madameikako]	
	'madame est F balcon'	'lady is F balcony'
Mot65	oui elle est sur le balcon la dame. elle regarde dehors les arbres. les enfants qui jouent	'yes she is on the balcony the lady. she is looking around outside, the trees, children playing'
(…)		
Jul42:	[dam ie pati]	
	'dame i(l) est pa(r)tie'	'lady he is gone'
Mot70:	oui oui elle est partie oui	'yes yes she is gone yes'
Jul43:	[iekakɔ̃]	
	'i(l) est balcon'	'he is balcony'
Mot71:	sur le balcon	'on the balcony'

17. In this example, [e] before [kakɔ̃](for '*balcon', 'balcony'*) is interpreted as a filler (F), for which we cannot determine whether it corresponds to the verb '*est' ('is')*, an amalgam of the verb and its subject or even a pre-nominal filler.

Let us first consider Julien's predicates. In Jul4 he mentions the referent for the first time without any predicate. Several predicates are introduced by his mother in her successive utterances (*est partie / 'is gone', est sur le balcon / 'is on the balcony', se promener / 'to take a walk', faire coucou / 'to say hello'*). These predicates are either elicited by the child, through several forms of *elle est où* ('*where is she*') or taken up immediately or at distance *(*[*ekakɔ̃*], [*kekuku*] and in Example 12 [*lepatiemene*]). Therefore, the apparently monological construction in Example 12 appears to be the result of the internalization of the predicates the child has just heard during the conversation. A similar pattern can be observed for referring expressions. The child introduced the referent only with a noun *dame ('lady')* and the mother replied with a dislocation, *la dame elle ('the lady she')*, thus offering the child a pronoun associated with the noun. The following contributions from the child consist of several attempts at producing a dislocation, first with only the noun postposed to the verb (Jul5) and then with approximating masculine pronouns (*i(l) / 'he'*). In the meantime, the mother replied with a third-person clitic pronoun, thus providing the following pattern: "after a noun or dislocation follows a third-person clitic pronoun". Jul42 and 43, in Example 13, and Jul51 and 52 in Example 12 replicate this pattern, the first time scaffolded by the mother's confirmation and the second in a more independent way. These sequences clearly show how the association of different predicates and referring expressions, ordered according to a givenness hierarchy, can be gradually built upon throughout a dialogue. Autonomous contributions are the outcome of long-term dialogical contributions where children take up the form, the content, and the sequentiality of adult contributions. Certainly, fuller support of our hypothesis will require more longitudinal follow-ups.

4. Conclusion

The present chapter explored some ways in which verbal interactions contribute to the emergence of an association between third-person clitic pronouns and the givenness of the corresponding referents, in contrast to referential uses of nouns and demonstrative pronouns.

The first step of our research was aimed at determining whether the uses of referential expressions in French-speaking children, as in other languages, are similar to those of adults. The results confirmed this similarity, and more specifically (also in line with the literature) that discourse-given referents are the most prevalent context for using third-person clitic pronouns. This step also provided groundwork for addressing our main question: How are the pragmatic skills for reference acquired? We hypothesized that they are the outcome of children's linguistic experiences with dialogue, which allow them to gradually achieve a

non-induced and then wholly child-initiated use of referring expressions. To test this hypothesis, we analyzed the relations between the children's utterances and their antecedents in the interlocutor's discourse, from three viewpoints: (1) the impact of the form of immediate antecedents, specifically through repetitions, or through the answer's structure, as framed by questions, (2) the various ways in which the child's utterances blend into the continuity of the dialogue, and (3) how children build upon their experiences with dialogical formats, either immediate or distant, and thereby gradually arrive at autonomous uses. We addressed the first and second issues quantitatively and the third, qualitatively.

Our previous research (Salazar Orvig et al., 2010b) already brought forth arguments for the hypothesis that third-person clitic pronoun use is rooted in dialogue, since the results showed that third-person clitic pronouns appeared immediately after mentions of the referent by the interlocutor. The form of the interlocutor's referring expression proved not to have a significant influence, while its category did. Repetitions less frequently included pronouns than the other dialogical links. In other words, the child rarely "chose" a referring expression that reproduced the adult's. As for answers to questions, we noted that third-person clitic pronouns were never directly elicited by questions. At the second level, the analyses revealed that the use of third-person clitic pronouns mainly reflected dialogue continuity.

Does the absence of any significant effects of repetitions, questions, or form uptake occur uniformly throughout linguistic development? In order to answer to this question, it would be necessary to analyze a corpus with a larger MLU span than the one we had here.

Our analysis of examples at the third level, that is, the ways in which the children's utterances leaned on dialogue, suggest that during a first stage, children's referring rely on immediate and then distant models; at the next stage, independent uses appear, albeit anchored in previous sequences; lastly, the production of third-person clitic pronouns becomes more often child-initiated. This kind of sequences can be explained by Bruner's concept of formats. One characteristic that Bruner assigned to formats is particularly relevant here: formats are modular, in the sense that they are amenable as subroutines for incorporation into larger-scale routines (Bruner, 1983b). In other words, they are not simple repetitions of sequences but may involve increased generalization and abstraction. The shift observed in our examples, from more scaffolded to more autonomous uses of third-person clitic pronouns, appears to reflect this evolution of formats. As proposed by Nelson (2007), dialogues provide children with a structure for building their own understanding of a task or concept.

This leads us to rethink the role of child-directed speech and input, at least in regard to referring expressions. As H. Clark (2014) put it, the central matter is not "talking-to" children (which would correspond to the traditional conception of

input) but "talking-with" children, i.e., engaging them in interactive conversation. "They [adult and child] try to establish, as they go along, that they and their partner have understood what each other meant well enough for current purposes" (H. Clark, 2014: 334). It remains, however, that in adult-child conversation one of the participants is still a beginner conversationalist. Some form of "scaffolding" is still necessary.

Any analyses of the role of dialogue in language acquisition, and particularly, in the present case, in the use of referring expressions, would be incomplete if it does not take into account the fact that individualized, sustained, adult-child dialogue is not present in all cultures. As cross-cultural research has shown, children may be immersed from birth in the daily life of an extended social group rather than in a nuclear family. Moreover, in some cultures very little talk is addressed to children before they produce one- or two-word utterances. Despite these characteristics, children are not devoid of support for language acquisition (Brown, 1998; Ochs & Schieffelin, 1995; Rabain-Jamin, Maynard, & Greenfield, 2003). Whatever the culture, language is acquired in the framework of joint activities and conversations with more competent partners. Note also that in many Western countries children attend daycare centers or similar structures, which provide them with opportunities for polyadic verbal exchanges, and thereby contribute to their pragmatic development (Marcos et al., 2004).

Wittgenstein's concept of "language games" encompasses a diversity of existing conditions. For Wittgenstein (1953) "the meaning of a word is its use in the language" (§43), in the framework of language games, that is, "language and the actions into which it is woven" (§7). This concept intends "to bring into prominence the fact that speaking a language is part of an activity" (§ 23). In her chapter on lexical acquisition, Nelson invokes this notion to explain how shared meaning can be attained and points out that "in the child's case, the problem [of meaning] is that of learning the criteria of parents' (and others') use of words in joint activity" (Nelson, 2007, p. 14).

This seems particularly relevant to findings on the way children begin to use referring expressions. They most certainly grasp forms and constructions from the recurrent uses of their interlocutors. Children may even grasp word functions before managing to produce adult-like forms, as suggested by the fact that uses of fillers and null forms resemble those of third-person clitic pronouns uses (see Chapter 3, da Silva-Genest et al., 2021). The first uses of pronouns may therefore be inserted in preexisting functions or already known language games. In sum, children acquire pragmatically meaningful ways of speaking rather than just syntactic or grammatical devices. The dialogical aspect of language games accounts for the fact that, before being able to build a model of his or her interlocutor's knowledge and needs, child's speech is scaffolded both by formats and by the meaning of the whole contextual activity.

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CHAPTER 8

Variations in adult use of referring expressions during storytelling in different interactional settings

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During the language acquisition process children experience language in different interactional settings. In terms of child-directed speech, we argue that children are exposed to different models that vary according to different factors. This chapter aims at grasping some aspects of these models, with a focus on referring expressions. Data consists of narratives in three interactional settings: mother-child interactions (Mother-to-Child context), kindergarten sessions (School context), and adults telling a story to an experimenter (Adult-to-Experimenter context). Children were aged from 3 to 7. We compared the participants' uses of referring expressions in these three contexts and, in the Mother-to-Child context, mothers interacting with a language impaired child or not. Results show that adults' uses of nouns and clitic pronouns vary according to the interactional setting, and that the uses of mothers and teachers when interacting with children at home or in school do not correspond to those of adults in an experimental setting.

Keywords: child-directed speech, interactional settings, joint storytelling, mothers, nouns, developmental language disorders, teachers, third-person pronouns

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1. Why study the uses of referring expressions among adults?

This chapter looks at how different adults use referring expressions in spoken narratives in different interactional settings. The adults whose uses are analyzed have different statuses (mothers vs. teachers), different interlocutors (adults vs. children, children with or without developmental language disorder, DLD), and their language is observed across different social contexts (home vs. school). We argue that these interactional settings influence the uses of referring expressions in specific ways that we strive to explore.

Two general observations were the starting point of these studies. The first one concerns the discrepant results of studies on reference among children (Hickmann, Schimke, & Colonna, 2015). The second is that the productions of young children are often compared to those of adults (or older children) when asked to tell a story to an experimenter (Hickmann, 2003; Jisa, 2000), in which case the adult (or older children) productions are considered as the target model of development that the child must attain.

Concerning the first observation, certain studies, including the original one by Karmiloff-Smith (1985), have shown that it is not until a later age (about 9 years) that children master the anaphoric value of pronouns and the proper use of definite and indefinite noun phrases (for a review, see Hickmann, 2003). Other studies (Allen, Hughes, & Skarabela, 2015; Salazar Orvig, Marcos, Morgenstern, Hassan, Leber-Marin, & Parès, 2010; Serratrice, 2005; Skarabela, 2007) have shown, on the contrary, that in dialogue, children under age four exhibit an early sensitivity to the presence of referents and their accessibility in discourse.

As de Weck and Salazar Orvig (2014) pointed out, these opposing results can be explained essentially in terms of both the authors' diverging theoretical views and conceptions of anaphora, and by the fact that the data analyzed are drawn from very different settings that have a definite impact on children's productions. In one case, the child is asked to produce a narrative in front of an experimenter; in the other, the child is interacting with a familiar person, during activities that are also familiar. The experimental contexts in the former case are thus quite different from what children encounter in their everyday life. This may account for why young children's use of referring expressions in this type of context differs from how they use them in dialogue, where they seem to have better skills.

Therefore, regarding the second finding, the productions of adults and older children in an experimental context must be seen as resulting from a lengthy acculturation to different narrative forms, one of which is written narrative. Such acculturation is strongly linked to schooling. Hence, comparing the younger children

productions to the latter's does not take into consideration the fact that this model is not grounded in the children's initial experience.

As to the diverging theoretical views, and in short, in one case, authors consider that children use referring expressions with a deictic value before mastering their anaphoric value towards the age of 9 (Hickmann, 2003; Karmiloff-Smith, 1985). In the other, authors pose that the acquisition of reference is grounded in dialogue and in the communicative experience of children tightly linked to "language games" (Salazar Orvig et al., 2010; Salazar Orvig, Marcos, Heurdier, & da Silva, 2018).

It follows from these considerations that it is necessary to explore the diversity of usage children actually encounter in narratives, which constitute the models upon which they build their own uses. In order to address this issue and account for this diversity, we need to study how the use of referring expressions by adults differs according to whether they are telling a story to an experimenter or telling a story with a child. Based on the assumption that the models to which children are exposed affect their language productions, the study of adult usage in these two settings is indispensable for understanding the development of reference in children. As brought out by research on the links between a child's acquisition of reference and discursive patterns (Clancy, 1996) or on the types of questions asked by the experimenter (Campbell, Brooks, & Tomasello, 2000; Serratrice, 2008), analyzing adult usage provides insight into the way children acquire and use referring expressions.

Except for Bamberg (1986), and more recently de Weck and Salazar Orvig (2014), de Weck, Salazar Orvig, Rezzonico, Bernasconi & Vinel (2019), Vinel (2014), and Chapter 7, Marcos, Salazar Orvig, da Silva & Heurdier (2021), few researchers have looked into these fundamental questions from a dialogical and interactionist angle. In the research on child-directed speech (CDS), especially for French, there is indeed a gap that needs to be filled. Moreover, among the studies that have dealt with preschool children's conversational partners other than family members, such as teachers, few have focused on reference. Other than Vinel (2014), we know of no studies for French dealing specifically with the construction of reference in narratives by teachers.

Yet, school is an important arena for child socialization in our societies. In France, children go to school at an early age, sometimes attending preschools – which are full-fledged schools in France – at the young age of two and a half. Preschool prepares children for future learning in elementary school by placing priority on language via book reading and narratives. The substantial rise in preschool attendance has allowed the schools to offer new cultural and artistic awareness to children between the ages of two and six, and to develop activities revolving

around books (Grossmann, 1996). Reading-based activities in school are different from those at home, and this most certainly affects the referring expressions used both by adults (teachers in this case) and by children.

2. The diversity of models in child-directed speech

Children experience a range of discourse models, the variety of which depends on numerous factors: the activity being carried out (see Chapter 9, de Weck, Hassan, Heurdier, Klein, & Salagnac, 2021; Rezzonico, de Weck, Salazar Orvig, da Silva, & Rahmati, 2014), the interlocutor (François, 1993; Gallaway & Richards, 1994; Khomsi, 1982; Rondal, 1983, 1978), parental styles of narrative elicitation (Peterson & McCabe, 1992), and sometimes also according to whether or not the child has a developmental language disorder (de Weck, 2010). The verbal scaffolding that mothers provide to their children with developmental language disorder is both similar and different from that given to typically developing children. The similarities mainly pertain to the structural characteristics of the child-directed speech (CDS), at the phonological, lexical, and morphosyntactic levels. The differences concern interactionist aspects (Conti-Ramsden & Friel-Patti, 1983).

Most of the CDS research has focused on children under three years of age (Gallaway & Richards, 1994; Geekie & Raban, 1994; Rondal, 1978). However, children's speaking skills continue to develop well beyond the age of three: with schooling, they acquire discursive skills related to literacy (Dickinson & Smith, 1994; Hoffman, 1993; Morrow, 1985; Sulzby & Teale, 1991). At this point, the child is confronted with other discursive formats. One can even assume that the fact of attending school will have an influence on parental CDS (see the older studies by Snow, 1972 and 1983, on mother-child interaction, the impact of context, and the development of literacy).

Very early in life children are exposed to narratives (Bruner, 1990). At first, it is during spontaneous interactions focused on narratives or exchanges revolving around books that children manipulate the linguistic units enabling them to refer to characters and construct reference. When children start attending preschool, and even before in daycare centers, they gradually begin to experience a greater diversity of meaningful verbal interactions, and become exposed to a diversity of storytelling, in a variety of discursive formats: personal experience narratives, narratives read aloud, picture-based storytelling, and so on. Experiencing these different types constitutes the source from which children learn to construct reference in a narrative framework.

Thus, for children in daycare or preschool, the polyadic context provides opportunities, especially for the older ones, that the dyadic context does not

supply, both in terms of the quantity of heard or overheard speech, and in terms of the monitoring the speech of others (Marcos, Salazar Orvig, Bernicot, Guidetti, Hudelot, & Préneron, 2004). These contexts, which generally contain more question/answer sequences, more references to absent objects, and a wider variety of models and styles, have a positive impact on the productions of younger children.

Hence, it is important to document how adults address school children (after the age of three) regarding specifically the construction of reference in dialogue-based narratives. In this prospect, the questions addressed in this chapter are related to the uses of referring expressions by mothers and preschool teachers while telling a story with a child (or a group of children in the case of teachers), and in which ways these uses differ from those of an adult telling the same story (as the mothers) to an experimenter.

3. Uses of referring expressions by mothers and teachers during joint storytelling

The literature supplies little data on this specific topic. Moreover, there are only a few studies that compare the uses of French referring expressions by mothers and teachers during a joint-storytelling activity. The most recent is Vinel (2014). Regarding mothers, Bamberg (1986), de Weck and Salazar Orvig (2014), and de Weck et al. (2019) proposed a fine-grained description of how mothers introduce and maintain reference when telling stories to their child (with or without DLD). De Weck and collaborators raised the question of whether the mothers' referential strategies could be characterized not only as anaphoric, but also as deictic or thematic as described for chidren's narratives by Karmiloff-Smith (1985). If so, it would mean that these strategies are linked not only to cognitive development but also to discourse-pragmatic factors, and thus, to the child's exposure to narratives and how others tell stories with him/her. In fact, the authors found that the mothers used referring expressions in certain, somewhat unexpected ways in comparison to adults telling the same story to an experimenter. For instance, the mothers mentioned a referent for the first time using a third-person or demonstrative pronoun. They accounted for these uses in terms of pragmatic factors: joint manipulation of a book, which enhances the effect of focusing on a shared activity, but also in terms of interaction strategies: asking questions to involve the child in the narrative, making sure the characters are identified, pointing, enlisting the child, and stressing key moments by employing strong expressions. These results are in line with Bamberg's (1986) findings, which showed that more than 50% of the expressions used by adults when introducing referents were presupposing devices.

Regarding the strategies of mothers of children with DLD in storytelling situations, the research has revealed a variety of profiles (Justice & Kaderavek, 2003; Salazar Orvig & de Weck, 2013; Vander Woude & Barton, 2003). Some mothers play the role of principal narrator as they strive to elicit the child's participation via verbal appeals. However, these profiles do not appear to be radically different from those found in mothers of typical children. More generally, mothers seem to adapt to their child's needs, which in the end often improves the child's participation in the activity, whether or not he/she exhibits DLD (Skibbe, Moody, Justice, & McGinty, 2010).

As far as teachers are concerned, there are many studies dealing with discourse in the classroom, as we have seen above, but few have looked at spoken narrative in school from the standpoint of managing reference in a linguistic perspective. Studies that looked at reading activities in school have focused on reading styles (De Temple & Tabors, 1994; Dickinson & Kleeber, 1989; Frier, Grossmann, & Pons, 2005; Grossmann, 1996; Roser & Martinez, 1985), scaffolding in child-directed questions (Blewitt, Rump, Shealy, & Cook, 2009; Dickinson & Smith, 1994; Florin, 1991; Makdissi, Boisclair, & Sirois, 2010; Zucker, Justice, Piasta, & Kaderavek, 2010), or the cognitive complexity of teacher talk (Aukrust, 2007; Massey, 2004).

These studies showed that the teachers' discourse has different effects on pupils' productions. With the exception of Vinel (2014), the scarce studies comparing adults with different statuses or in different contexts (Geekie & Raban, 1994; Hudelot, 1999, 2007; Rondal, 1978) have pertained to discursive or structural aspects. In short, older studies comparing mothers and teachers (Granowsky & Krossner, 1970, cited by Rondal, 1978) have concluded that preschool teachers' speech differs from mothers' speech by its greater mean length of utterances and greater syntactic complexity, but also its clearly smaller range of vocabulary. In their study, Geekie and Raban (1994) noted that the speech addressed by teachers to small groups of four 5-year-old pupils had features similar to those found among mothers talking to their children during goal-oriented activities like looking for objects.

As far as reference is concerned, a recent exploratory study on reference during storytelling (Hassan, Salagnac, & Vinel, 2012), compared the usage of a female teacher and four mothers. They found that the mothers produced more pronouns (all types pooled) than nouns, and conversely, that the teacher produced more nouns than pronouns. This result was coupled with another that may seem surprising: for the teacher, nouns very often served to maintain a thematic progression (a function generally fulfilled by pronouns) and were used less often to introduce the referents of the story.

4. Aim of the studies

In summary, the findings in the literature indicate a lack of knowledge of CDS for children on the topic of reference, especially for children over three years of age; but also, that teachers and mothers have their own specific usage. In our interactionist approach to language acquisition (Bakhtin, 1979/1986; Bruner, 1983; E. Clark, 2009; François, Hudelot, & Sabeau-Jouannet, 1984; Nelson, 2007; Tomasello, 1999), where verbal interaction constitutes the place where children experience the language categories through the discourse addressed to them, we contend that it is essential to know the usage of the adults – with whom children interact – if we want to better understand how children construct (or rather co-construct reference)[1] and grasp the uses and values of referential linguistic units. Thus, to address the issue of variations in adult referential usage according to the interactional setting in a narrative activity, four different contexts were considered: mothers telling a story in interaction with their child, teachers telling a story in interaction with their pupils, and adults telling the same story as the mothers to another adult, the experimenter. When mothers were telling a story with their child we considered two cases: mothers telling a story with their typically developping children (TD) and mothers telling a story with their children with developmental language disorder (DLD).

The study of de Weck et al. (2019) showed that the usage of the mothers when telling a story to their child differed from that of the adult participants when telling a story to an experimenter. The former were engaged in a dialogue with a child, whereas the latter were engaged in an individually managed narrative directed at another adult. Based on these results, we further developed three hypotheses. First, the usage of the mothers differ from that of the teachers. Notably, as mothers and teachers have different statuses, they do not view their role in the storytelling activity in the same way. Because they have different goals (teachers have didactic intentions, mothers primarily seek to make their child participate), they behave differently (Hassan et al., 2012). Second, teachers' usage is closer to that of the adults telling the story to an experimenter because they should tend more than the mothers to follow the model of monologically managed narratives, as this is the literate model for narratives promoted at school (Canut & Vertalier, 2012). Based on results from de Weck and Salazar

1. See Chapter 7, Marcos et al., 2021, where the authors point out the impact of dialogue on the choice of referring expressions by a child based on the adult's discourse, which the child uses to construct his/her own discourse.

Orvig (2014), the third hypothesis was that mothers' uses of referring expressions when telling a story to their children with DLD is similar to that of mothers telling the same story to their TD children.

5. Method

In order to confirm our hypotheses, we conducted three comparative studies. The first compared mothers telling a story with their child (Mother-to-Child context) and adults telling the same story to the experimenter (Adult-to-Experimenter context) (de Weck et al. 2019).[2] The second compared mothers and teachers in two social contexts, (home vs. school). The third compared mothers of TD children and mothers of children with DLD.[3] Thus, we made use of several corpora taken from different databases and studies, but with points in common and specificities we will describe below.

5.1 Corpora

The first corpus (Adults Narratives Corpus, see Appendix I) was used in de Weck et al.'s study on the impact of interactional settings (2019): 20 women, all of whom were native speakers of French under the age of 40, telling a story to an experimenter. None of the women worked in a field related to childhood but two of them were high-school teachers of French and literature.

The second corpus was compiled from the Mother-Child Interactions corpus, (see Appendix I, see also de Weck & Salazar Orvig, 2014): 43 mothers telling a story with their child (ages 4 to 7 years). Among the 43 mothers, 15 had a child with DLD.

These two corpora were used for comparing the productions of the 20 mothers of typical children (Mother-to-Child context) to the productions of the 20 participants in the Adult-to-Experimenter context (see de Weck et al., 2019), and for comparing the productions of the 15 mothers of children with DLD (ages 5 to 7 years) and the 15 mothers of the TD children, who were matched on age to the children with DLD (difference of no more than one month).

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2. Here, we summarize the main results from de Weck et al. (2019). In that paper, the Mother-to-Child context was named the "CHILD condition" and the Adult-to-Experimenter context was named the "ADULT condition".

3. The mothers are in Mother-to-Child context when they are compared to the participants in the Adult-to-Experimenter context and when the two groups of children interlocutors (with and without DLD) are considered. The mothers are in the Home context when they are compared to the teachers in the School context.

Finally, the third corpus was compiled from the Diaref-Lille Corpus (see Appendix I): 10 mother-child dyads, and four sessions at preschool conducted by four different teachers with the same children and a peer group (several children from the same class). One session was with children in the youngest preschool class (Year 1), two were with children from the intermediate preschool class (Year 2), and one was with children from the oldest preschool class (Year 3). The children were 3 to 6 years old and were attending preschool on a regular basis. This corpus was used to compare the uses of the mothers (Home context) to those of the teachers (School context).

5.2 Situations and materials

Except for the School context, the materials used were the same: a picture book with no text entitled *Ah les belles vacances des petits cochons!*[4] The mothers were instructed to tell the story with their child as they usually do, and to take as much time as they needed. For the participants telling the story to the experimenter, this one handed them the book and asked them to tell the story.

In the School context, a different book without text was used in order to avoid a familiarity effect (since the children in the mother-child dyads also participated in the school sessions). The book chosen here was *Le voleur de poules*.[5] The teachers were instructed to conduct a reading session as they usually do but with a smaller group of 8 to 12 children, rather than the whole class. No time limit was set for telling the story in any of the situations.

There are only very few books without texts adapted for school. We chose the one that was appropriate for use in the different classes (with the younger and older pupils), and presented the strongest similarities with the book used with the mother-child interactions. Both books involve only animal characters. They both revolve around a main character that experiences some incidents involving other characters and who is wrongly attributed a number of intentions. All participants (children and adults) were unfamiliar with the books.

The video and audio recordings were made in a quiet, convenient place for the participants in the Home, Mother-to-Child and Adult-to-Experimenter contexts, and in a classroom for the School context. The corpora were transcribed (in written French) and any expressions that corresponded to the referents we were

4. Goodall, J.S. (1980). *Ah les belles vacances des petits cochons!* Paris: Gallimard. Original edition: *Paddy Pork's Holiday*. Macmillan Children's Books (1975). See Appendix III.A for a summary of the story.

5. Rodriguez, B. (2005/2010). *Le voleur de poules (The Chicken Thief)*. Paris: Autrement. See Appendix III.B for a summary of the story.

analyzing were coded in terms of their grammatical and discursive characteristics (see below).

5.3 Referents and axes of analysis

To make our comparisons, we drew up a list of referents for each of the two books. Twenty-one referents for *Ah les belles vacances des petits cochons!* and 19 for *Le voleur de poules*. The referents included ones pertaining to the main and secondary characters, and some inanimate entities that were important to the unfolding of the plot.

We analyzed the productions of the different adult groups described above along two axes: the types of referring expressions used in the narrative, and their position in the referential chain. Depending on what groups were being compared, other aspects were also analyzed. These aspects will be presented in the section specific to the comparison in question.

The referring expressions fell into one of six categories: (1) nouns (common nouns, proper nouns, and adjectives used as nouns), (2) third-person pronouns (clitic and strong), (3) right and left dislocations (noun dislocations and pronoun dislocations), (4) demonstrative pronouns, such as *ça* (this/that), (5) null forms, which correspond to omissions, zero anaphora, or prompts (e.g., when the adult verbalizes the determiner alone to allow the child to fill in with the noun), and (6) other pronouns (interrogative, possessive, relative, indefinite, numerical, adverbial).

The position in the referential chain fell into one of four categories: (1) first mentions, which correspond to the first mention of a referent, (2) subsequent mentions of a referent, which include all mentions of an already mentioned referent (except repetitions) located at less than four full speech turns away in a dyadic context, and eight turns away in a polyadic context, (3) reactivations, which occur when a referent is reintroduced at least four full speech turns away from the preceding mention of the same referent, and (4) repetitions, which are utterances repeated verbatim, reformulated with syntactic rephrasing, or phonological correction. Repetitions immediately follow the repeated utterance. This category was only taken into account in the mother-teacher comparison.

As reported in de Weck et al. (2019) for adults telling the story to the experimenter, 20% interrater agreement yielded 97.42% agreement (Cohen's kappa: 0.95) for the types of referring expressions and 92.07% (Cohen's kappa: 0.79) for the position in the referential chain.

With regard to the comparisons of mother of children with or without DLD and the comparisons between mothers and teachers, the interactions were coded by a first coder and 100% of the coding was reviewed by a second coder. To further

ensure coding stability, 10% of each interaction was recoded blind from the original coding. Interrater agreement yielded, respectively, 94.53% (Cohen's kappa: 0.92) and 96.47% (Cohen's kappa: 0.95) for the types of referring expressions and 91.80% (Cohen's kappa: 0.85) and 86.8% (Cohen's kappa: 0.82) for the position in the referential chain.

5.4 Statistical processing

Statistical processing was done for the comparison of the Mother-to-Child and Adult-to-Experimenter contexts and for the comparison of the mothers with children with or without DLD. Mann-Whitney U tests were performed because the data did not satisfy the minimal assumptions for a parametric test (normal distribution, homoscedasticity, and variance equality). Methods for normalizing the variables (e.g., logarithmic transformation, arcsin of the square root, etc.) did not allow us to approach the normal distribution for many of the variables.

Given the relatively small number of participants in the mother-teacher comparison, no statistical tests were carried out.

6. Variations according to the interactional setting and the status of the adult

We noted above that the use of referring expressions among mothers in a joint-storytelling activity with their child is diversified. We think that, unlike the mothers (whether they are interacting with a typical child or one with DLD), the teachers use of referring expressions, due to their educational role, will be more prototypical, particularly when it comes to introducing referents. At the same time, insofar as the teachers are in a dialogue situation with their pupils, they may also exhibit behavior that is close to that of the mothers. By situating the teachers' behavior in the School context with respect to the participants in the Adult-to-Experimenter context on one side and in the Mother-to-Child context on the other side, we should be able to determine to which extent the interactional setting impacts the adults' referential strategies.

Let us now present the results of the comparisons between the interactional settings. We will begin by summarizing the results of a previous study (de Weck et al., 2019) reporting the usage in the Mother-to-Child context to that in the Adult-to-Experimenter context (5.1); next we will compare the Home context to the School context (5.2); finally, we will see how the mothers telling the story to their child compare with each other according to whether their child has or does not have a DLD (5.3).

6.1 Comparison of Mother-to-Child context to Adult-to-Experimenter context

The main goal of this comparison was to apprehend the model of reference children are exposed to during joint storytelling (de Weck et al., 2019). The stories generated narratives that exhibit a number of specificities (de Weck & Salazar Orvig, 2014) which were confirmed by the present study.

Even though we noted some shared aspects between both contexts related to the constraints of the narrative genre (Tables 1 and 2), two reference styles stood out. The first style was found in the discourse of participants in the Adult-to-Experimenter context, which presented some of the characteristics typical of narratives produced by adults in experimental setting (Hickmann, 2003; Jisa, 2000; Kern & Raffara, 2012; Fossard et al., 2018), namely, first mentions of referents produced a noun phrase (88.89%), most of which included an indefinite determiner (55.56% of the NPs); subsequent mentions, which were predominantly third-person pronouns (65.06%); and also some rare nouns (19.37%). The nouns were usually associated with inanimate referents or shifts between characters. Reactivations of referents were frequently realized using nouns (85.43%).

The second style was found in the mothers' discourse. Compared to the participants in the Adult-to-Experimenter context, when telling the story with their children, mothers produced a wider range of referring expressions (Tables 1 and 2) at every position in the referential chain. So, for first mentions and reactivations, they used significantly fewer NPs (52.29% and 41.42%, respectively) and significantly more third-person pronouns (14.68% and 25.94%, respectively). To introduce a referent, the mothers used more presupposing devices (definite NPs: 35.25%, and even third-person pronouns, see Table 1) based on a common ground, which is something that the participants in the Adult-to-Experimenter context rarely did.

Table 1. Distribution (in percentage) of the referring expression categories in the Adult-to-Experimenter and Mother-to-Child contexts, by position in the referential chain[6]

		A-to-E context%	M-to-C context%	Total%	U	p
Total	Nouns	31.10	19.15	25.07	45.00	<.001
	Disl*	2.63	11.46	7.08	30.50	<.001
	3PP	54.81	58.44	56.64	147.00	.157
	NF	2.63	0.39	1.50	87.00	.002

6. This table presents the total distribution of referring expressions and gathers the main content of Tables 1, 3 and 4 from de Weck et al. (2019: 304–307).

Table 1. (*Continued*)

		A-to-E context%	M-to-C context%	Total%	U	p
	OtherP	8.82	10.56	9.70	159.00	.277
	N=	2505	2548	5053		
FM	Nouns	88.89	52.29	72.84	35.50	<.001
	Disl	0.72	16.97	7.85	57.00	<.001
	3PP	5.38	14.68	9.46	118.00	.026
	NF	0.00	1.38	0.60	180.00	.602
	OtherP	5.02	14.68	9.26	92.50	.003
	N=	279	218	497		
Rea	Nouns	85.43	41.42	58.46	29.50	<.001
	Disl	5.30	18.83	13.59	43.00	<.001
	3PP	5.30	25.94	17.95	76.50	.001
	NF	0.00	1.26	0.77	170.00	.429
	OtherP	3.97	12.55	9.23	123.00	.038
	N=	151	239	390		
SM	Nouns	19.37	13.15	16.25	105.00	.009
	Disl	2.70	10.04	6.39	48.50	<.001
	3PP	65.06	66.71	65.89	181.50	.62
	NF	3.18	0.19	1.68	68.00	<.001
	OtherP	9.69	9.90	9.79	199.50	.989
	N=	2075	2091	4166		

* Disl: dislocations, 3PP: third-person pronouns, NF: null forms, OtherP: other pronouns, FM: first mentions, Rea: reactivations, SM: subsequent mentions

Table 2. Overall distribution (in percentage) of NPs (simple and dislocated) in first mentions, in the Adult-to-Experimenter and Mother-to-Child contexts

	A-to-E context%	M-to-C context%	Total%	U	p
Indefinite	55.56	42.62	51.12	106.00	.018
Definite	22.65	35.25	26.97	100.50	.012
Possessive	16.67	13.11	15.45	160.00	.397
Other	5.13	9.02	6.46	167.00	.475
N	**234**	**122**	**356**		

These expressions occurred in three different contexts: the new referent could be retrieved as part of a set of referents mentioned earlier (Example (1)); it could also be retrieved through a bridging inference (H. Clark, 1977) based on

previously mentioned referents (Example (2)); or through its presence in a picture (Example (3)). These NPs or pronouns were often accompanied by pointing.

(1) Mother (Elouan)[7]
The main character arrives at the artists' exit of a theater

Mot83	**i**(l) rencontre des cochons qu'il a l'air de connaître	'he meets some pigs he seems to know'
(…)	(…)	
Mot90	mais ***il*** <l'un de ces cochons> le [personnage principal] présente comme le pianiste. ((pointe en direction d'un des cochons responsables du concert))	'but ***he*** <one of these pigs> presents him [main character] as the pianist ((she points to one of the pigs responsible for the concert))'

(2) Mother (Emma)
The main character falls on a moving train car

Mot23	où est-c(e) que ce train va s'arrêter? ((tourne la page)) / (…) à la gare?	'where is this train going to stop? ((turns the page)) / (…) at the train station?'
Emm30	((hoche la tête et hausse les épaules))	'((shakes head and shrugs shoulders))'
Mot24	mais ouais alors tu vois là le p(e)tit cochon ((pointe le cochon voyageur)) il est en train d'expliquer ***au contrôleur*** ((montre le contrôleur dans le train))	'yeah so you see the little pig ((points to the traveling pig)) he is explaining to ***the train inspector*** ((points to the inspector in the train))'

(3) Mother (Julie2)
The mother begins to tell the story

Mot5	(e) pense que là tu vois? i s(e) promène = ((revient en arrière dans le livre))	'I think that there you see? ***he*** is wandering =((comes back to the beginning of the book))'

Participants in the Adult-to-Experimenter context mostly relied on these presupposing devices in the bridging context (Example (4)), and without gestures.

7. Example captions indicate the status of the participants: in the Mother-to-Child context, the mothers (Mot are identified by the name of their child), in the School context the teachers (Tea are identified by the type of preschool class) and in the Adult-to-Experimenter context the participants are identified by their name. When the productions of a child is given, the first three letters of his/her first name are given in lowercase (e.g., Emm for Emma). An approximate English translation is given between inverted commas. For more details on transcription conventions, see Appendix II.

(4) Adult (Audrey)
The main character has been taken by a carriage.

Aud24	sur la route humhum comme par hasard ils croisèrent ou et même ils doublèrent la voiture ((tourne la page))	'on the road hum hum as if by chance they crossed or even they passed the car ((turns the page))'
Aud25	la voiture qui avait tant pollué le petit cochon	'the car that had so much polluted the little pig'
Aud26	il **leur** fit des grands signes	'he waved **them** big signs'

For introductions (Example (5)) and reactivations (Example (6)), the mothers also used interrogative pronouns.

(5) Mother (Emma)
The main character has lost his clothes

Mot86	pis qu'est-ce **qu'**i(l) voit là? = ((pointe l'épouvantail))	'then ***what*** does he see there? =((she points to the scarecrow))'

(6) Mother (Sacha)
A car passes with a rich person inside

Mot34	il a t(ou)jours son cigare au bec	'he still has his cigar in his mouth.'
(…)	(…)	

The main character is mistaken for the pianist expected at the concert

Mot83	j(e) pense qu'il a jamais joué d(e) piano / c(e) pauvre monsieur cochon	'I think he's never played the piano / this poor Mister pig'
(…)	(…)	(…)
Mot87	oh regarde ¡ ***qui*** c'est qui arrive?	'oh look ¡ ***who***'s coming?'
Sac94	((tourne la petite page))	((turns the little page))
Mot88	on l(e) connaît c(el)ui là? ((lève son bras pour aller pointer))	'do we know him, that one here? ((raises his arm to go and point))'

In addition, the mothers used dislocations quite frequently for first mentions (16.97%), reactivations (18.83%), and subsequent mentions too (10.04%). The dislocations are used to identify a referent (Example (7)), reintroduce it after a topic change (Example (8)), or highlight it during an immediate repetition.

(7) Mother (Tom)
The main character has lost his clothes

Mot25	**ça** tu sais c(e) que **c**'est? ((pointe l'épouvantail))	'**that** you know what **it** is? ((points to the scarecrow))'

(8) Mother (Sophie)
Running away, the main character comes across a caravan

Mot6	***c'***est pas ses petits amis ***ça***?	'Isn't ***that*** his little friends?
	il a pas retrouvé ses amis?	Didn't he meet up with his
	((montre l'image du doigt))	friends again? ((points to the picture))'

This comparison brought out a referential style specific to the Mother-to-Child context that differed both from that of the other women called upon to participate in this experimental context (Adult-to-Experimenter context), and from that of written narratives. The interactional setting proved to have a significant impact in the participants' referential strategies. The use of referring expressions observed here is consistent with the fact that mothers were striving to engage their children in the activity (one of the dimensions of scaffolding: Wood, Bruner, & Ross, 1976) by asking them questions (see interrogative pronouns), attracting their attention to one of the entities in the story (presupposing devices accompanied by pointing), establishing and ensuring a shared understanding of the story (see dislocations serving to identify or emphasize a referent). The mothers' productions also served different purposes: (co)constructing a narrative and getting the child involved. This task, which we asked them to perform, is probably far closer to the ordinary activity of a mother than telling a story to another adult.

6.2 Comparison of Home context to School context

The purpose of second comparison was to determine the specificities of teachers' usage (School context) with respect to that of mothers (in Mother-to-Child context), in order to show how the experience that children have of reference in school dialogues (focused on storytelling) differs from that they are accustomed to at home, in particular with their mothers.

The preceding comparison showed that, beyond the common points linked to the constraints of the narrative genre, the referential strategies in the Adult-to-Experimenter context were prototypical (see 5.1), whereas that of the mothers in the Mother-to-Child context were more diversified, regardless of the position in the referential chain. In the light of this finding, we wondered whether the behavior of teachers would conform more to the expected usage for narrating to an experimenter or, on the contrary, whether it would share some features with that of the mothers in the Mother-to-Child context.

The group of mothers in the Home context were interacting with younger children than those in the preceding comparison. This could explain the differences in the percentages observed, although the tendencies were the same. Contrary to what we did in the preceding section, we took the interrogative pronouns out of the other-pronoun category because there were twice as many in the School context.

Table 3. Distribution (in percentage) of the referring expressions categories in Home and School contexts, by position in the referential chain

	Nouns %	Disl* %	3PP %	Dem %	Int %	NF %	OtherP %	Total %	N=
Home context	19.42	10.69	55.63	7.08	2.94	1.24	3.00		1936
FM	32.20	14.41	22.03	5.93	15.25	2.54	7.63	6.10	118
Rea	40.00	21.30	26.96	1.74	6.09	1.74	2.17	11.89	230
SM	15.34	8.96	62.54	7.63	1.61	1.19	2.73	73.80	1429
Rep	16.98	8.18	59.75	10.69	1.26	0.00	3.14	8.22	159
School context	38.51	11.53	38.51	2.86	6.62	0.98	0.98		1222
FM	36.36	9.09	0.00	0.00	45.45	9.09	0.00	0.90	11
Rea	48.54	16.50	10.68	0.97	21.36	1.94	0.00	8.43	103
SM	29.23	15.32	41.86	3.95	6.79	1.26	1.58	51.80	633
Rep	48.84	5.47	40.84	1.89	2.32	0.21	0.42	38.87	475

* Disl: dislocations, 3PP: third-person pronouns, Dem: demonstrative pronouns, Int: interrogative pronouns, Other P: other pronouns, FM: first mentions, Rea: reactivations, SM: subsequent mentions, Rep: repetitions

The distribution of the referring expressions shows (Table 3) that the participants in the Home context (mothers) and in the School context (teachers) had quite different styles. The mothers preferentially introduced new referents with nouns (32.2%), whereas the teachers hardly introduced any referents at all (only 11 introductions), and when they did, they mainly used interrogative pronouns (5) and nouns (4). On the other hand, they used many nouns for reactivations (48.54%), and repetitions (48.84%). They also used interrogative pronouns for reactivations, but to a lesser extent (21.36%). In one introduction, teachers used a dislocated presupposing expression with a third-person pronoun (Example (9)).

(9) Teacher (Year 2)
First picture in the book identifying the characters

Tea71	mais vous m'avez toujours pas dit qu'est-ce qu'il se passait dans cette image.	'but, you didn't tell me what is happening in this picture?'
Vio11	moi ((lève la main))	'me ((raises her hand))'
Vio12	en fait y a un renard et il voit // et il les voit toutes les poules.	'there is a fox, and he sees // and he sees all the chickens'
Tea72	un renard qui voit les poules de loin ((pointe le renard avec la tête))	'a fox that sees the chickens from far away ((points to the fox with her head))'

Jul6	et qui a mangé // et qui a pris les poules.	'and who ate // and who took he chickens'
Tea74	qui a pris les poules?	'who took the chickens?'
Vio14	qui a pris une poule!	'who took a chicken!'
Tea75	ah il en a pris une.	'oh, he took one.'
The teacher asks questions in order to identify which of the chickens was taken by the fox, then she asks:		
Tea79	et qu'est-ce qu'***ils*** font ***les autres***?	'and what are ***they*** doing ***the others?***'

As expected, in accordance with the constraints of the interlocution in the classroom (materials shared by several interlocutors but at a distance), and the necessity of explaining and verbalizing (which took precedence over pointing), the teachers employed very few demonstrative pronouns, which were never used to introduce a referent. The fact that the teachers produced far more nouns than the mothers did could be related to the importance at this age of acquiring the lexicon in school.

As expected once again, third-person pronouns predominated for subsequent mentions, but much more so among the mothers (62.54%) than among the teachers (41.86%). Indeed, we can see a large proportion of nouns in subsequent mentions by the teachers (29.23% vs. 15.34% for the mothers). Nouns are almost as frequent in subsequent mentions as in first mentions for the teachers. This usage seems to be teacher-specific in comparison to the mothers who used nouns the most to introduce and reactivate referents. Note (Table 3) the large number of repetitions in the teachers' discourse (38.87% vs. 8.22% for the mothers) and the abundance of nouns in this position (48.84%).

Both the mothers and the teachers used a non-negligible proportion of dislocations, as found in spoken French (Blanche-Benveniste, 2006). These dislocations served to reactivate a referent. However, as Table 4 shows, the teachers employed almost solely noun dislocations (Example (10)), whereas the mothers' usage was more varied, exhibiting either demonstrative or strong third-person dislocated pronouns (respectively Example (7) and Example (11)).

Table 4. Distribution (in percentage) of dislocations in Home and School contexts

	DDisl*%	StDisl%	NDisl%	N=
Home context	19.32	26.09	54.59	207
School context	4.96	2.13	92.91	141

* DDisl: demonstrative pronoun dislocations, StDisl: strong third-person pronoun dislocations, NDisl: noun dislocations

(10) Teacher (Year 2)
End of the story: the hen decides to stay with the fox

Tea212	et qu'est-ce qu'***elle*** a décidé de faire alors ***la poule ?***	'And what did ***she*** decide to do then ***the hen***?'

(11) Mother (Romain)
One of the pigs jumps up on a ladder to pick apples

Mot275	qu'est-ce qu'***il*** fait ***lui*** là ((pointe le cochon)) ?	'what's ***he*** doing, ***him*** there? ((points to the pig))?'

In short, teachers differed from the mothers in terms of the linguistic units chosen to introduce and maintain reference, and in terms of the number of repetitions and nouns in subsequent mentions. These results corroborate Hassan, Salagnac, & Vinel's (2012) preliminary results reported above, suggesting a certain consistency in teachers' use. Their study dealt with a smaller number of subjects (four mothers and one teacher) but examined all of the story and dialogue referents.

Vinel, Salagnac, & Hassan (2014) showed that the referring expressions in the utterances repeated by the mothers were mostly pronouns, a finding that was confirmed here by the large proportion of third-person pronouns in subsequent mentions and in repetitions. This is consistent with the fact that the mothers produced a larger proportion of pronouns than nouns, and relied especially on self-repetitions. By contrast, the referring expressions in the utterances repeated by the teachers consisted mainly of nouns. This is due to the fact that teachers frequently make other-repetitions and the referring expressions of children in school are mostly nouns (see Chapter 9, de Weck, Hassan, Heurdier, Klein, & Salagnac, 2021). Thus, the high proportion of nouns in the teachers' usage in subsequent mentions seems to be characteristic of teaching practices and the interactive dynamics of dialogue-based narratives in school. This aligns with our hypothesized impact of the interactional setting and namely the interlocutors' status on discursive productions. Moreover, some of our research has shown that the type of utterance (question vs. assertion or demands) plays a different role for teachers and mothers (Vinel, Salagnac, & Hassan, 2013). Accordingly, teachers use most often questions to introduce referents whereas mothers do so via assertions.

The nature of didactic interaction is such that it requires teachers to ratify the ideas proposed by their pupils, share them with the class (make sure that everyone hears and understands what each pupil says; Example (12)), and validate them.

These functions are fulfilled by repetitions (E. Clark & Bernicot, 2008), which also ensure discourse coherence. Often, the teacher also repeats a pupil's remark (Kil1, Example (13)), which allows him/her to make an inference (Tea2, Example (13)) focusing on the character (the "fox") that incites the pupil to go on with the narrative.

(12) Teacher (Year 1)

Jul87	peut-être le renard il va rentrer dans le bateau	'maybe the fox he's going to go into the boat'
Tea282	***peut-être le renard il va monter dans le bateau***	***'maybe the fox he's going to go up onto the boat'***

(13) Teacher (Year 2)

Beginning of the story: identification of the characters

Tea1	ça va aussi parler d'un lapin ((montre le livre aux enfants))	'It's also going to talk about a rabbit ((shows the book to the children))'
Kil1	(il) y a une tête de de du du renard	'there's a head of of of the of the fox'
Tea2	***y a la tête du renard donc ça va parler d'un renard***	***'there's the head of the fox* so it's going to talk about a fox'**

6.3 Comparison of mothers of children with and without developmental language disorder

As de Weck and Salazar Orvig (2014) already noted in a preliminary study with fewer participants, our two groups of mothers, as a whole, had very similar profiles. They mainly used third-person pronouns (both clitic and strong), nouns, and dislocations. Both groups of mothers also had relatively small proportions of other pronoun forms (demonstrative, interrogative, and other; see Table 5). Mann-Whitney tests were conducted to test for significant differences between the two groups. Likewise, no significant difference between the two mother groups was found when we analyzed the three reference-chain positions separately (Table 5).

The 15 mothers of children with DLD confirmed the tendencies reported in Section 5.1. Contrary to the comparison of the Adult-to-Experimenter and the Mother-to-Child contexts, in this study, we separated the interrogative pronouns from the category of other pronouns in order to find out how often the mothers used this type of pronoun. This category turned out to be rather marginal, however (1.94% of the total).

Table 5. Distribution (in percentage) of the referring expressions categories for mothers of typically developing children and mothers of children with DLD, by position in the referential chain

		Mothers TD children %	Mothers children with DLD %	Total %	U	P
Total	**Nouns**	**17.46**	**18.35**	**17.94**	102.00	.663
	Disl*	11.26	13.16	12.29	77.00	.141
	3PP	59.39	56.63	57.89	81.00	.191
	Dem	5.17	6.39	5.83	80.50	.184
	Int	2.13	1.78	1.94	101.00	.633
	NF	0.92	1.01	0.97	100.00	.584
	OtherP	3.68	2.69	3.14	85.00	.254
	N=	1741	2082	3823		
FM	Nouns	51.83	51.52	51.66	107.00	.819
	Disl	15.24	19.70	17.68	81.00	.187
	3PP	15.85	10.10	12.71	75.50	.124
	Dem	4.27	7.07	5.80	89.50	.314
	Int	8.54	8.08	8.29	104.50	.731
	NF	3.05	2.53	2.76	104.50	.654
	OtherP	1.22	1.01	1.10	110.50	.888
	N=	164	198	362		
Rea	Nouns	34.55	39.23	37.41	104.00	.724
	Disl	19.39	21.15	20.47	103.50	.708
	3PP	31.52	28.85	29.88	112	.983
	Dem	4.24	3.85	4.00	107.00	.797
	Int	6.67	4.62	5.41	109.50	.893
	NF	2.42	1.54	1.88	106.50	.701
	OtherP	1.21	0.77	0.94	112.50	1
	N=	165	260	425		
SM	Nouns	11.47	10.96	11.20	96.00	.494
	Disl	9.84	11.08	10.51	80.00	.178
	3PP	67.71	66.75	67.19	94.00	.443
	Dem	5.38	6.71	6.09	66.50	.056
	Int	0.85	0.55	0.69	100.00	.494
	NF	0.50	0.74	0.63	91.50	.313
	OtherP	4.25	3.20	3.69	92.00	.395
	N=	1412	1624	3036		

* Disl: dislocations, 3PP: third-person pronouns, Dem: demonstrative pronouns, Int: interrogative pronouns, NF: null forms, OtherP: other pronouns, FM: first mentions, Rea: reactivations, SM: subsequent mentions

As noted above, dislocation in French is an important element of child-directed speech (see De Cat, 2007 and Chapter 6, Klein, Jullien, & Fox, 2021). Among the functions of dislocations reported above (see Examples (7) and (8)), another function is that they can act as a referential clarification or afterthought (see Example (14)) in contexts where the speaker judges a pronoun to be insufficiently informative.

(14) Mother (Eva TD)

Mot34	il a beaucoup marché	'he walked a lot'
Eva23	m // le pauvre ((regarde brièvement la page précédente)) le p(e)tit lapin qui le surveille. tu le vois le lapin? ((soulève la page suivante))	'm // the poor one ((looks briefly to the previous page)) the little rabbit is watching him. you see the rabbit? ((starts turning the next page))'
Mot35	((regarde la page suivante))	'((looks at the next page))'
Eva24	ouais. il est là ((pointe le lapin))	'yeah. he is here ((points to the rabbit))'
Mot36	ouais. ((regarde ce que sa fille lui montre)) alors après qu'est-c(e) qu'***i*** va faire ?((tourne la page)) / ***monsieur cochon***	'yeah ((looks at what her daughter is showing her)) so what is ***he*** going to do next? ((turns the page)) / ***Mr Pig***'

For this reason, although the two groups of mothers did not differ significantly as to the proportion of dislocations employed in the activity examined here, it is nevertheless interesting to relate the mothers' use of dislocations to the children's comprehension level. To do this, we calculated the correlation between the dislocation rate of each mother with the raw score of her children on the lexical comprehension test, taken from the N-EEL (Chevrie-Muller & Plaza, 2001). This measure was selected in the light of the fact that the older children and the younger children took different morphosyntactic comprehension tests. The two measures yielded a significant negative correlation (Spearman's *rho*: –.396, $p = .030$), but one that is weak (Grosjean & Dommergues, 2011). This correlation indicates that the higher the child's raw score was on the comprehension test, the less the mother used dislocations. It is important to note here that all of the children with DLD who participated in this study had an expressive disorder, whereas their comprehension level varied in a way similar to that of typical children. This could mean that the mothers adapted to the comprehension level of their child by using dislocations when they thought that the child had trouble following the progression of the story.

7. Conclusion

The aim of this chapter was to describe how adults use referring expressions in storytelling activity in different interactional settings, in other words to account

for the various uses of referring expressions experienced by children. This was made necessary by the assumption that in order to be able to better account for the children's use, we need to better know the adults'.

We did this by examining the usage of adults with different statuses in different settings. The observed uses in Home and Mother-to-Child contexts were found to differ from those of monological narratives in experimental contexts. The results of our comparisons of the forms produced and their distributions, as a function of the position of the referring expression in the referential chain, indicated substantial differences in the way the expressions were used. The factors of variation that entered into the choice of the referring expression depended not only upon the general contrast between dialogue or monologue, but also on the implications of the social context (home vs. school) and on the way in which the adult led the activity. In the case of mothers telling the story with their child with or without DLD – as no significant differences were found – as de Weck and Salazar Orvig (2014) showed, mothers and their children share a discursive and situational space. Definite determiners as well as clitic pronouns for first mentions or reactivations are a manifestation of this shared intersubjective representation.

At home, the experience a child has of spoken narratives is one in which reference is anchored in dialogue, with attention getters and interlocutors that rely on a common ground. One can therefore assume that the characteristics often deemed typical of young children – (e.g., introduction of referents by presupposing devices, dislocations, gestures and reliance on shared knowledge; Hickmann, 2003; Karmiloff-Smith, 1985; Jisa, 2000) – could reflect their picking up on the adult model rather than only their difficulty managing reference. As Peterson and McCabe (1992) showed, taking a Vygotskian standpoint, children internalize the interactional patterns of narrative elicitation and structure their own narratives in a way that reflects these patterns.

Granted, at the age of four or older, children's experience of spoken and written narratives and book-based discourse is probably quite varied. And yet, despite this acculturation, their mothers do not adopt the decontextualized model of narratives when interacting with them. This is a clear indication of the strong impact of dialogue and the joint construction of a common ground in the acquisition of reference.

We also observed this impact in the School context, even though didactic interaction imposes its own usage constraints and requirements on teachers, ones that differ not only from those of mothers but also from those observed in decontextualized narratives. As we have seen, the teachers introduced few referents (introductions were mainly done by the children). When they introduced referents, teachers employed mostly interrogative pronouns. Thus, the usage of adults in a situation where they are telling a story to another adult (an experimenter) does not appear to be comparable to what children hear in exchanges at home or in school.

In conclusion, these results suggest that throughout childhood, children are confronted with interactive-discursive models of narratives that vary according to the social context. The purpose of this chapter was to improve our knowledge of these models. It seemed essential in our dialogical perspective, firstly, to describe the different usage styles of adults interacting with a child, in order to better account for the diversity of children's communicative and discursive experiences, and secondly, to show that these styles differ from those observed when an adult tells a story to another adult. These specific aims should further our general knowledge of child usage, in view of gaining insight into developmental processes.

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CHAPTER 9

Activities and social settings

Their roles in the use of referring expressions

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We investigated the influence of activity and social setting on the use of referring expressions in French-speaking children. Three groups were observed: 25 children ages 1;7 to 2;6 in three activities with their mother (picture-based, play, and daily routines), 15 children ages 3;9 to 7;4 in joint picture-book storytelling and symbolic play with their mother, and 10 children ages 3;9 to 7;4 in joint storytelling at home and at school. The type of referring expression and its position in the referential chain were coded. The results demonstrated the impact of the activity on the use of referring expressions in the first two groups, whereas the position in the referential chain affected the use of referring expressions only in the second group. In the home-school comparison, social setting influenced the use of referring expressions in interaction with the position in the referential chain.

Keywords: activity, social setting, referring expression, mother-child interaction, teacher-child interaction

1. Introduction

Taking a dialogical approach, the preceding chapters showed that young children exhibit a variety of skills for using referring expressions during interaction with an adult. Several factors (notably, referent accessibility and position in the referential chain) appear to have an impact on how children and their interlocutors use referring expressions. Based on the general hypothesis that the language productions

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of speakers are also influenced by social factors, this chapter looks at how the use of referring expressions by children of different ages is affected, firstly, by the types of activity being carried out during family interactions, and secondly, by the social setting (home vs. school) of that activity. We want to find out if these two variables – activity and setting – determine which referring expressions are used at different positions in the referential chain. In other words does the impact of these two variables vary according to whether the child is introducing, maintaining, reactivating, or repeating a referent?

We will begin by examining the literature on how the current activity can affect various aspects of children's language productions, knowing that studies of this impact on the use of referring expressions are scarce. We will then examine the influence of the social setting, and in particular, how children's productions differ at home and at school.

1.1 Role of activity type in language production

In the interactional approach (Bruner, 1983; Vygotsky, 1933/1962), activities carried out by human beings are intrinsically social in nature; they are regulated by verbal interactions and are thus negotiated. This means that each interacting participant must not only build mental representations of the goals and knowledge of the other participants in order to carry out the activity, but must also use tools, particularly semiotic ones (Bronckart, 1996). Language plays this crucial role. In line with Levinson (1979), we see activities as forming "a fuzzy category whose focal members are goal-defined, socially constituted, bounded, events with constraints on participants, setting, and so on, but above all on the kinds of allowable contributions" (p. 368). Viewed from this angle, and as mentioned above, the type of activity appears as a determinant of language-based interactions, themselves situated in a larger social setting whose characteristics (place, time, interlocutors' statuses) have repercussions on the unfolding of the interaction.

"Context-based activity theories" (borrowing Levinson's expression, 1979) contend that, by a very early age, a child's utterances are interpreted/interpretable from the standpoint of their situatedness in a broader context (Ervin-Tripp, 2005). Accordingly, learning to speak involves acquiring both linguistic skills (the forms of one's first language) and discursive skills that are suited to the situation of interaction (Dolz, Pasquier, & Bronckart, 1993; Salazar Orvig, 2002; Veneziano, 2000), which itself involves a variety of activities.

Research has shown that the current activity has an impact on the syntactic structure of verbal productions, lexical resources, and pragmatic aspects of the interaction taking place, both for adults and for children of all ages (Altinkamis, Kern, & Sofu, 2014; Berman & Nir-Sagiv, 2004; Gee & Savasir, 1985; Gerhardt, 1990; Heurdier, 2015, 2018; Kern & Chenu, 2010; Leaper & Gleason, 1996). This

suggests that during a dialogue, dyads co-elaborate their utterances in relation to the activity being carried out, with adults adapting to the children's behaviors and to the outcome of the interaction that ensues. However, we will look solely at how the activity affects the language productions of the children.

Sensitivity to a variety of settings appears rather early in life. Hoff (2010) observed young children (ages 1;5 to 2;2 years) in three family activities (mealtime, book reading, and playing with toys) and showed that, during book reading as compared to the other two activities, the children used a more diversified vocabulary and made more contributions that maintained thematic continuity with the mother's previous utterance. In their study, Gee & Savasir (1985) observed contrasted uses of the modals *will* and *gonna* by English-speaking 3-year-olds, suggesting a strong effect of setting: *gonna* was more frequent when the children were setting up, planning, or organizing the current activity, whereas *will* was preferentially used in collaborative play to refer to the speaker's immediate intention. More recently, Heurdier (2015, 2018) noted different types of syntax in the utterances of 3- and 4-year-old children and their parents during two activities (symbolic play and games with picture cards). The speakers tended to produce more verbless utterances in the picture-card situation, and more utterances with a verbal predicate in the symbolic-play situation. Leaper and Gleason (1996) analyzed the verbal behaviors of 25- to 62-month-old children interacting with their parents during pretend play and in a construction game with a car. Like their parents, the children produced more speech acts during pretend play. The nature of these acts also varied: there were more informing acts and avoiding acts in pretend play and more request acts in the construction game. Finally, de Weck & Rosat (2003) found a substantial difference in the verbal participation of 4- to 6-year-old children interacting with an unfamiliar adult in four activities (in decreasing order of child participation): storytelling, relating personal experiences, instructions for fixing something (injunctive dialogue), and symbolic play. These variations were explained in terms of the different interlocutionary roles the children assumed in these activities.

Concerning referring expressions in particular, Salazar Orvig, Marcos, Heurdier, & da Silva-Genest (2018) showed that the use of third-person pronouns by young children was only slightly influenced by the activity, whereas other referring expressions (such as demonstrative pronouns) were strongly affected. In a study by Kern and Raffara (2012), the authors found that different conditions for carrying out the same activity could lead to different referring expression uses. For instance, the self-managed production of two picture-based narratives by children ages 3;6, 5;6, 11 years, and adults was influenced by the structuring of the characters in each story (character alternation, background vs. foreground). This difference led to variations in both the quality of the story line and the use of referring expressions (percentage of correct forms for introducing and reintroducing characters). Lastly, several

studies on storytelling (e.g., de Weck & Jullien, 2013; Kail & Hickmann, 1992) have shown that the type of interlocutor has an impact on the use of referring expressions. When the interlocutor had no shared knowledge of the story, the children used referring expressions in greater conformity with standard adult models, both for introducing and for maintaining referents. In contrast, when the interlocutor did share knowledge with the child, more deictic expressions were observed.

1.2 Role of social setting in language production

In addition to the activity being carried out, the social setting – which determines the respective statuses of the participants and their relation to the current activity – also plays an important role. In this respect, even when the "same" activity is involved, joint storytelling at school and joint storytelling at home can be regarded as two different situations. Because the social setting in these situations changes the implications of the activity and the interlocutors' verbal behavior, the activity itself will end up changing too.

For children, home and school are the two principal loci of socialization, the places where they will acquire communicative experience through various speech-based activities. In preschool, these activities will expose the child to new language practices revolving around books and storytelling, which require the construction of a rapport with this more distant and "reflective" cultural object (Boiron, 2010). The polyadic context found in school (Barton & Tomasello, 1994) and the interactional styles of teachers (Grossman, 1996) provide children with opportunities and discursive formats that necessarily affect not only their verbal productions at a general level, but also – and this is our hypothesis – the way in which their use of referring expressions unfolds in a dialogue. In her work, Vinel (2014) showed that, depending on the social setting, adults (mothers and teachers) and children exhibit contrasted ways of using nouns and pronouns. Moreover, studies on child-directed speech have shown that a child's partners (mother, father, siblings, and sometimes teachers) have different interaction styles (Gallaway & Richards, 1994) that have an impact on the child's productions. Research on classroom interactions, especially studies on scaffolding provided by teachers in *shared reading* activities (e.g., Blewitt, Rump, Shealy, & Cook, 2009; Gerde & Powell, 2009; Hudelot, 2007; Vinel, 2014) has shown that the types of questions asked (notably, inferential questions) and the kind of scaffolding offered by the teacher have effects on story comprehension and vocabulary development among pupils (Zucker, Justice, Piasta, & Kaderavek, 2010).

More specifically concerning referring expressions in French, recent studies (Hassan, Vinel, & Salagnac, 2013; Vinel, 2014; Vinel, Salagnac, & Hassan, 2014) have shown that the way children use nouns and pronouns during the joint storytelling of a picture book without words differs according to whether the children are at school or at home with their mother: the children were found to produce

more noun phrases and fewer pronouns at school. This tendency among the children aligned with that of their teachers, who produced more noun phrases and fewer pronouns than the mothers did (see Chapter 8, Hassan, de Weck, Rezzonico, Salazar Orvig, & Vinel, 2021).

What stands out from the above studies is a general consensus that not only the activity being carried out in an interaction, but also the social setting in which that interaction unfolds, have an effect on several aspects of language production. Continuing in this line of research, we set forth three main hypotheses. Our first hypothesis was that the activity being carried out by mothers and their children has an impact on the referring expressions the participants produce; in other words, we expected referring-expression use to differ across activities. Our second hypothesis was that children engaged in the same activity would use different referring expressions in different social settings; for instance, at home with their mothers or at school with their teachers. Comparing the same activity in two social settings makes it possible to study how the setting can structure the activity and thereby lead to partial differences in referring-expression use. Our third hypothesis was that, insofar as referring-expression position in a referential chain largely determines which referring expression is used, both of these variables (activity and setting) should modulate the effect of the position in the referential chain on the children's use of referring expressions.

2. Method

2.1 Participants

The participants consisted of a total of 44 children. The toddler group contained 25 children between the ages of 1;7 and 2;6 years. Five of these children were videotaped several times at different ages, making for a total of 37 observations. These children fell into three subgroups[1] in terms of their mean length of utterance (MLU): ten children in MLU1 (1.03–2.0), nine in MLU2 (2.04–2.5), and ten in MLU3 (2.52–3.5). The older group consisted of 19 children: six 4-year-olds (ages 3;9–4;5 years), four 5-year-olds (ages 4;6–5;4 years), six 6-year-olds (ages 5;6–6;4 years), and three 7-year-olds (ages 7;3–7;4 years).[2]

1. Children from longitudinal follow up can appear several times in the same MLU Group.

2. The data for the toddler group were taken from the Anaé and Madeleine from the Paris corpus, the Childcare, Marcos, Nashawati and Salazar Orvig corpora; the data for the older group were taken from the Mother-Child Interaction and DIAREF-Lille corpora (see Appendix I for more details).

2.2 Data collection

To test our hypotheses, we conducted three studies, two of which addressed the impact of the activity. The first involved observing family interactions in natural everyday situations chosen by the participants (see (a) below); the second involved a more controlled observation of mother-child interactions during two activities (see (b) below). The third study concerned the impact of the social setting during the same activity carried out at home and at preschool (see (c) below).

a. The children in the *toddler group* were observed in three types of activities (Salazar Orvig & al., 2018): activities based on pictorial material (lotto, puzzles, picture books), playing with toys (building blocks or symbolic play), and daily routines (snack time, diaper changing, washing, etc.). No particular instructions were given. The interactions lasted between 10 and 20 minutes.
b. Fifteen children from the *older group* were observed in two activities. The first was the joint storytelling of a picture book without words entitled *"Ah, les belles vacances des petits cochons!"*.[3] The participants were asked to tell the story as they were accustomed to doing. The second activity was symbolic play with a set of toy materials (a house, a farm, characters, animals, etc.). The participants had to "act out" a story using the materials.
c. Ten children from the *older group* were observed during the joint storytelling of a book at school and at home. Three of these children were in their first year of preschool (YR1; 2 and 3 year olds), four were in their second year (YR2; 3 and 4 year olds), and three were in their third year (YR3; 5 and 6 year olds). To ensure that the children observed with their mother would not find the same story at their preschool, two books of the same type were proposed: *"Ah, les belles vacances des petits cochons!"* at home (see above) and *"Le voleur de poule"*[4] at school. The teachers were asked to tell the story as they were accustomed to doing, while encouraging the children to participate, especially the target children (i.e., those who were also observed in the mother-child interactions). To encourage target-child participation, we asked the teachers to conduct the storytelling session with a small number of pupils. The groups (target children

3. Goodall, J. S. (1980). *Ah les belles vacances des petits cochons!* Paris: Gallimard. Original title: *Paddy Pork's Holiday*, Macmillan Children's Books (1975). See Appendix III.A for the summary of the story.

4. Rodriguez, B. (2005/2010). *Le voleur de poules*. Paris: Autrement. (English title: The Chicken Thief). See Appendix III.B for the summary of the story.

included) contained 11 pupils in their first year of preschool, 10 in their second year, and 14 in their third year.

2.3 Coding system

The present section gives our selection of referents (2.3.1), the referring expressions retained (2.3.2), and the positions of the referring expression in the referential chain (2.3.3). It also presents the inter-coder agreement rates and statistics (2.3.4).

2.3.1 *Selection of referents*

Different referents were chosen for each study.

a. For the three activities performed by the toddler group, every referent mentioned by the participants was included.
b. For the two activities performed by the older group, a list of 80 referents was drawn up in advance for joint storytelling: the main character, 19 secondary animate characters, and 60 inanimate objects taken from the picture book. For symbolic play, all referents mentioned by the participants were retained. A list of referents could not be drawn up in advance here, despite the shared materials, due to the diversity of the scenarios elaborated by the dyads.
c. For the comparison of the two social settings, we used the list of referents drawn up for the joint storytelling (see above). The list for *Le voleur de poule* contained 76 referents, with one main character (the fox), four secondary characters (animals), and 71 inanimate objects.

2.3.2 *Categories of referring expressions*

The analyses were done on the referential uses of various linguistic units. Eight categories of referring expressions were considered:

– Nouns: common, proper, and adjectives used as nouns
– Clitic and strong third-person pronouns: *il(s), elle(s), lui, leur, eux, le, la, and les* (he, she, it, they, him, her, and them)
– Clitic demonstrative pronouns, such as the "*c*" in "*c'est*" (it's)
– Strong demonstrative pronouns: *ce* (this) and *ça* (that one)
– Noun and pronoun dislocations to the right or left: *la femme elle …* (the lady, she …), *il … le garçon* (he …, the boy …), *lui il…* (him, he …)
– Other pronouns: interrogative, relative, indefinite, possessive, numeral, and adverbial
– Null forms: omissions, zero anaphora
– Fillers

2.3.3 *Position in the referential chain*

Four positions in the referential chain were retained:

- First mentions of a referent
- Subsequent mentions: later mentions of a referent within four speaking turns.
- Reactivations: subsequent mentions beyond four speaking turns
- Immediate repetitions occurring between one speaking turn and the next (self- and other-repetitions)

2.4 Inter-coder agreement and statistics

Data coding was checked for coder agreement. For each dyad, 10% of the corpus was coded independently by a different member of the team. The results for the toddler group were as follows: referring expression categories (inter-coder agreement rate: 95.81%; Cohen's Kappa: $k = 0.95$) and position in the referential chain (inter-coder agreement rate: 87.24%; Cohen's Kappa: $k = 0.843$). For the older group, the results were as follows: referring expression categories (inter-coder agreement rate: 99.14%; $k = 0.99$) and position in the referential chain (inter-coder agreement rate: 80.73%; $k = 0.69$).

The statistics included two nonparametric tests (see Siegel & Castellan, 1988; Spurrier, 2003): the *Mann-Whitney U test* for the older group of children and the *Wilcoxon rank-sum test* for the toddler group. The *Kruskal-Wallis test* was applied to k independent groups, where $k \geq 3$. When $k = 2$, we resorted to the *Mann-Whitney U test*.

For the social-setting comparison (3.1.3, 3.2.3), we were unable to compute the statistics for two reasons: the number of children was too small, and the individuals being compared were not strictly the same because the analyses included the productions of the target children's peers at school.

3. Results

This section will highlight the main results of our analyses. It begins with a presentation of the observed differences in the use of referring expressions (first for the toddlers and then for the older children) as a function of the activity and the social setting (3.1). It ends with a discussion of the impact of position in the referential chain on these variations (3.2).

3.1 Differences in referring-expression use, by activity and social setting

3.1.1 *Daily routines, play, and picture-based activities among the toddlers*

Table 1 presents the distribution of the referring expressions used by the toddlers, in the three types of activities.

Table 1. Distribution (in percentage) of referring expressions used by the toddlers, in each activity and for all activities pooled

Activity	Nouns %	3PP* %	Disl %	SDem %	CDem %	Fillers %	Null forms %	OthP %	N=
Pictorial	32.85	10.47	14.27	9.55	13.48	5.37	8.12	5.89	764
Toys	32.43	11.86	8.47	9.49	7.91	5.54	19.10	5.20	885
Daily	43.38	6.10	12.08	6.75	8.44	3.25	14.03	5.97	770
Total	**36.05**	**9.59**	**11.45**	**8.64**	**9.84**	**4.75**	**14.01**	**5.66**	**2419**

* 3PP: third-person pronouns, Disl: dislocations, SDem: Strong demonstrative pronouns, CDem: clitic demonstrative pronouns, OthP: other pronouns.

In general, the toddlers used the following referring expressions (in decreasing order of frequency): nouns, null forms, dislocations, clitic demonstrative pronouns, third-person pronouns, strong demonstrative pronouns, and residual proportions of other pronouns and fillers. However, this overall distribution varied across activities for four of the referring expression categories. *Nouns*, although in the majority for all three activities, were more common in daily routines than in the other two activities ($Z = 8.16$, $p = .017$). The opposite pattern occurred for *third-person pronouns*, which were less frequent in daily than in pictorial ($U = 107$, $p = .084$) and toys ($U = 129$, $p = .064$) activities. *Strong demonstrative pronouns* tended to be more numerous in pictorial ($U = 111$, $p = .054$) and in toys ($U = 122.5$, $p = .097$) than in daily activities. Lastly, there were more *null forms* in toys and in daily activities than in pictorial ones ($Z = 6.96$, $p = .031$).

The frequent use of demonstrative pronouns in the pictorial activity was linked to the many labelling utterances (Hickmann, 2003; Salazar Orvig et al., 2018; see also Chapter 10, Vinel, Salazar Orvig, de Weck, Nashawati, & Rahmati, 2021), with the clitic demonstrative pronoun *c' ('this')* (Example (1)) or the strong demonstrative pronoun *ça ('that')* (Example (2)) acting as the referential part of the labelling (the object).

(1) Julien,[5] 2;3, MLU1, pictorial
Jul3 [o ***s***e yn bwat]
'oh **c**'est une boîte.' 'oh ***it's*** a box.'

5. Example captions indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. The first three letters of the child's first name are given in lowercase (e.g., Jul for Julien). Mot stands for mother; Tea for teacher. When the children's utterances are transcribed phonetically (between square brackets [ ]), the interpretation in French is given below in inverted commas. An approximate English translation is also given between inverted commas. Braces indicate uncertain transcriptions or alternative interpretations. {X} stands for uninterpretable or inaudible segments. In the interpretations and translations, 'F' stands for a filler syllable. For more informations on transcription conventions, see Appendix II.

(2) Clément, 2;3, MLU2, pictorial

Clé44	et ***ça***? ((essaye de mettre une nouvelle pièce et la déplace à plusieurs endroits))	'and ***that***?' ((child tries to put in a new piece and moves it to several places))

Usually, the pictorial activity triggered picture-based descriptions, comments, and narrations. The interlocutors' discourse was usually centered on the pictorial medium and concerns the referents upon which the speakers were focusing. Labelling utterances often take on the form of a simple presentative, as in *c'est X* ('*it's X*'), or a dislocated presentative, as in *ça c'est X* ('*that, it's X*') or *c'est X ça* ('*it's X, that*'). We thus expected to find more demonstrative pronoun dislocations in pictorial than in other activities. Our analysis revealed that while noun dislocations were in the majority (64.49%) in the pooled data, the proportion of demonstrative pronoun dislocations in the pictorial activity was indeed greater (41.67%) than in the other two activities (34.67% in toys and 24.73% in daily).[6]

3.1.2 *Joint storytelling and symbolic play in the older group*

As shown in Table 2, the older children used many nouns and third-person pronouns in both activities. They also produced other pronouns, demonstrative pronouns (clitic and strong),[7] and dislocations, but only a residual number of null forms.

Table 2. Distribution (in percentage) of referring expressions used by the older group, for each activity and for all activities pooled

Activity	Nouns %	3PP* %	Disl %	Dem %	Null forms %	OthP %	N=
Symbolic Play	40.24	16.53	12.70	14.29	3.36	12.89	1071
Joint Storytelling	30.88	44.74	4.91	5.70	3.33	10.44	1140
Total	**35.41**	**31.07**	**8.68**	**9.86**	**3.35**	**11.62**	**2211**

* 3PP: third-person pronouns, Disl: dislocations, Dem: demonstrative pronouns, OthP: other pronouns.

However, significant activity-based differences were noted for four referring expressions: nouns ($Z = -2.39$, $p = .017$), dislocations ($Z = -3.35$, $p = .001$), and demonstrative pronouns ($Z = -2.78$, $p = .005$) were used more in symbolic play, whereas third-person pronouns ($Z = -3.41$, $p = .001$) were more frequent in joint storytelling.

6. Dislocations of a third-person pronoun were extremely rare among the toddlers, representing only 1.45% of the dislocations for all activities taken together.

7. Clitic and strong demonstrative pronouns were grouped together for the older group (unlike the toddler group) because they did not exhibit any particularities.

In short, two relatively different distributions were observed. In symbolic play, the children used many nouns, and to a lesser degree third-person pronouns, demonstrative pronouns, and dislocations. During joint storytelling, third-person pronouns were prevalent, followed by nouns. Demonstrative pronouns and dislocations were among the least frequent.

Let us look briefly at a few specificities of the symbolic play sessions, as they exhibited the greatest diversity of referring expressions. Demonstrative pronouns were usually accompanied by manipulation of the object referred to by the pronoun (Example (3)).

(3) Eva, 4;9, symbolic play

Eva51	(il) y a encore ***ça*** pour le cheval? **((dépose l'abreuvoir sur le sol, devant le cheval))**	'there's ***that*** too for the horse?' **((lays water through on floor, in front of horse))**

Secondly, the dislocations (137 occurrences) contained more dislocated pronouns (83 occurrences, 60.6%) than dislocated nouns (54 occurrences, 39.4%). Among the pronoun dislocations, two main cases stand out: ones with a dislocated demonstrative pronoun, as in *ça c'est ('that, it's')* (50 occurrences, 36.5%) and ones with a dislocated strong third-person pronoun, as in *lui il ('him, he')* (27 occurrences, 19.7%). The demonstrative pronoun dislocations were used to mention a referent in labelling utterances (Example (4)), all the while being contrasted to a referent mentioned in the previous utterance.

(4) Damien, 7;4, symbolic play

Dam13	coincoin je pense que ***ça c'est*** une oie? ((pose l'animal dans l'enclos))	'honk honk I think that ***that, it's*** a goose?' ((lays animal down in pen))

In contrast, dislocations of a strong third-person pronoun (Example (5)) often marked a contrast between different referents present in the symbolic play.

(5) James, 4;6, symbolic play

Jam4	c'est l(e) petit c(el)ui-là? ouais	'it's the little one, him? yeah'
Mot4	bon.	'good.'
Jam5	mais il va aller à côté d(e) son papa.	'but he's going to go next to his daddy.'
Mot5	((prend la moto qui est sur la table))	((takes motorcycle that's on the playing table))
Jam6	***il*** va pas conduire ***lui***.	'***he's*** not gonna drive, ***him***.'

In Jam6, a contrast is thus introduced between the two characters mentioned by the child and his mother regarding the actions that they can or cannot carry out.

3.1.3 *Joint storytelling at home and at school*

As a whole, as shown in Table 3,[8,9] nouns and third-person pronouns prevailed in both social settings, but in different proportions: there were many more nouns in the preschool setting than at home and a few more pronouns at home than at school.

Table 3. Distribution (in percentage) of referring expressions produced by the older children, for each social setting and for both settings taken together

Social Setting	Nouns %	3PP* %	Disl %	Dem %	Null forms %	OthP %	N=
Home	29.40	45.77	5.80	6.95	3.24	8.85	1051
School	48.09	39.38	6.77	2.10	1.01	2.65	1285
Total	39.68	42.25	6.34	4.28	2.01	5.44	2336

* 3PP: third-person pronouns, Disl: dislocations, Dem: demonstrative pronouns, OthP: other pronouns.

There were equally many dislocations in the two settings. The other types of referring expressions (demonstrative pronouns, other pronouns, and null forms) were comparatively infrequent, but there were three times as many at home than at school. Demonstrative pronouns, like other types of pronouns, were hardly ever employed in the preschool setting (27 occurrences, 23 of which were used by YR1 and YR2 children). Taking a close look at these units, we can see that the clitic form *c'* dominated for speaking about just-mentioned referents (21 occurrences).

The only two occurrences of the strong demonstrative pronoun *ça* (*'that'*) at school were accompanied by pointing (for the first occurrence; Example (6)) and by a forward body movement (for the second), both of which were produced by children in the youngest class.

(6) Tanguy, school, YR1

Tea244	on voit qu'il y a la lune avec?	'we can see that there's the moon with?'
Tan54	soleil!	'sun!'
Sam10	avec les étoiles ((se lève et pointe l'image))	'with the stars' ((gets up and points to the picture))
Lil38	étoiles	'stars'
Tea245	les étoiles	'the stars'
Tan55	et aussi y a ***ça*** qui est jaune ((**va pointer le feu dans le livre**))	'and there's ***that*** too, that's yellow' ((**goes to point to the fire in the book**))

8. Recall that we could not compute statistics for this comparison (see 2.4).

9. The percentages for the home interactions in this table differ from those in Table 2 because they pertain only to some of the children included in the symbolic play – joint storytelling comparison, but the same tendencies were observed.

The general pattern was similar for the interactions at home, where the clitic form of the demonstrative pronoun dominated (59 out of 73 occurrences), and the strong demonstrative pronoun was accompanied by pointing. However, the strong was used more often by older children (YR2 and especially YR3, with only 2 occurrences for YR1). At school, it was the younger children who employed strong demonstrative pronouns. This home-school difference might be related to the dynamics of dialogue. There were too few occurrences to draw this conclusion with certainty, but it nevertheless seemed interesting to point them out.

3.2 Position in the referential chain

This section assesses the ways in which referring expressions were used in relation to their position in the referential chain. As in the preceding chapters of this book, the position factor played a relatively important role here too: first mentions were generally realized by noun phrases, whereas subsequent mentions were mostly third-person pronouns. We will attempt to better understand this phenomenon by crossing this factor with the activity variable (3.2.1 for the toddler group and 3.2.2 for the older group) and the social-setting variable (3.2.3).

3.2.1 *Daily routines, play, and picture-based activities among the toddlers*

Table 4 gives a breakdown of referring-expression use at the different positions in the referential chain.

Table 4. Distribution (in percentage) of the referring expressions used by the toddler group at each position in the referential chain, for all activities pooled and for each activity taken separately

Activity	Position	Nouns %	3PP* %	Disl %	SDem %	CDem %	Fillers %	Null forms %	OthP %	N=
All activities	FM	41.68	2.50	11.27	14.13	11.27	3.76	7.33	8.05	559
	SM	30.74	15.27	10.70	6.71	9.53	5.25	17.41	4.38	1028
	REA	42.86	3.48	17.07	7.67	8.01	4.18	11.15	5.57	287
	REP	36.85	9.02	10.17	6.72	9.98	5.18	16.31	5.76	521
	Total	**36.08**	**9.52**	**11.48**	**8.56**	**9.85**	**4.76**	**14.07**	**5.68**	**2395**
Pictorial	FM	35.42	3.13	15.10	13.54	17.19	2.08	3.65	9.90	192
	SM	31.02	15.06	13.86	8.73	11.75	6.02	9.64	3.92	332
	REA	28.13	4.69	26.56	12.50	9.38	9.38	7.81	1.56	64
	REP	36.02	11.18	9.32	5.59	14.29	6.21	10.56	6.83	161
	Total	**32.98**	**10.28**	**14.29**	**9.61**	**13.48**	**5.34**	**8.14**	**5.87**	**749**

(*Continued*)

Table 4 (*Continued*)

Activity	Position	Nouns %	3PP* %	Disl %	SDem %	CDem %	Fillers %	Null forms %	OthP %	N=
Toys	FM	40.00	3.50	9.50	17.00	6.00	6.00	9.50	8.50	200
	SM	24.68	18.18	7.53	6.23	10.65	5.45	22.60	4.68	385
	REA	47.27	5.45	14.55	6.36	5.45	3.64	14.55	2.73	110
	REP	30.98	11.96	5.98	8.70	5.98	6.52	25.54	4.35	184
	Total	**32.31**	**11.95**	**8.53**	**9.22**	**7.96**	**5.57**	**19.23**	**5.23**	**879**
Daily	FM	50.90	0.60	8.98	11.38	10.78	2.99	8.98	5.39	167
	SM	37.94	11.90	11.25	5.14	5.79	4.18	19.29	4.50	311
	REA	46.90	0.88	14.16	6.19	9.73	1.77	9.73	10.62	113
	REP	43.75	3.98	15.34	5.68	10.23	2.84	11.93	6.25	176
	Total	**43.42**	**6.00**	**12.13**	**6.78**	**8.47**	**3.26**	**13.95**	**6.00**	**767**

* 3PP: third-person pronouns, Disl: dislocations, SDem/CDem: strong/clitic demonstrative pronouns, OthP: other pronouns, FM: first mention, SM: subsequent mention, REA: reactivation, REP: repetition.

First mentions were mostly realized using nouns, with no effect of the activity ($Z = 2.43$, $p>0.1$). In *subsequent mentions* the children still employed many nouns, but we can see a higher proportion of third-person pronouns, as expected (see Chapter 3, da Silva-Genest, Marcos, Salazar Orvig, Caët & Heurdier, 2021). However, for the production of pronouns, the difference between the three activities was not significant ($Z = 0.34$, $p>0.1$). The activity effect on this referential position pertained to the use of *null forms*, as in Example (7), which were more frequent in the toys and daily activities than in the pictorial activity ($Z = 7.56$, $p = .023$).

(7) Maxime, 2;3, MLU1, pictorial

Mot58	le lapin faudrait que tu lui mettes son pyjama	'the rabbit, you should put his pyjamas on him'
Mot59	tu sais / tu sais lequel c'est son pyjama?	'do you know / do you know which ones are his pyjamas?'
Max52	[a?]	'a?'
Max53	[bø] 'b(l)eu'	'blue'
Mot60	montre-moi	'show me'
Max54	[byl] 'X'	'X'
Mot61	et voilà faut le mettre en pyjama il va aller au lit	'ok then' 'got to put his pyjamas on he's going to go to bed'
Max55	[nɔ̃] 'non'	'no'
Mot62	non?	'no?'
Max56	***[vapaoli]*** ***'va pas au lit'***	***'not going to bed'***

In this excerpt, Max and his mother are putting together a puzzle. After multiple mentions of the referent 'lapin' (rabbit), as a dislocation (Mot58), as a possessive determiner (Mot59), and as a personal pronoun (Mot61), the child (Max56) adds a negative predication without verbalizing the referent 'lapin' (*null form*).

3.2.2 *Joint storytelling and symbolic play among the older children*

Table 5 gives a breakdown of the use of referring expressions by the older children at the different positions in the referential chain. Statistics could not be computed for reactivations and repetitions because the number of occurrences in these positions was small in both activities. For this reason, we will not discuss the use of referring expressions in these positions.

Table 5. Distribution (in percentage) of the referring expressions used by the older children in the two acitvities, and at each position in the referential chain

Activity	Position	Nouns %	3PP* %	Disl %	Dem %	Null forms %	OthP %	N=
Symbolic Play	FM	47.78	3.39	12.01	13.32	3.13	20.37	383
	SM	31.47	28.23	12.72	16.38	2.37	8.84	464
	REA	54.70	11.97	14.53	5.98	6.84	5.98	117
	REP	41.57	10.11	16.85	19.10	1.12	11.24	89
	Total	**40.84**	**15.86**	**13.01**	**14.34**	**3.04**	**12.92**	**1053**
Joint Storytelling	FM	75.86	4.60	7.47	2.30	7.47	2.30	174
	SM	19.41	54.63	3.86	6.56	2.70	12.85	778
	REA	39.29	29.76	15.48	2.38	4.76	8.33	84
	REP	34.95	49.51	0.97	7.77	0.00	6.80	103
	Total	**30.90**	**44.69**	**5.00**	**5.71**	**3.34**	**10.36**	**1140**

* 3PP: third-person pronouns, Disl: dislocations, Dem: demonstrative pronouns, OthP: other pronouns, FM: first mention, SM: subsequent mention, REA: reactivation, REP: repetition.

Concerning *first mentions*, the expected result was obtained for *joint storytelling*, namely, noun phrases prevailed over all other categories. In *symbolic play*, on the other hand, there was a great deal more diversity of forms: nouns were significantly less common than in joint storytelling ($Z = -3.17$, $p = .002$) and represented about half of the first mentions, with other pronouns and demonstrative pronouns being used in significantly higher proportions than in joint storytelling (other pronouns: $Z = -2.90$, $p = .004$; demonstrative pronouns: $Z = -2.45$, $p = .014$).

Let us look now at some specificities of the use of other-pronouns[10] in *symbolic play*. The first-mention occurrences of other pronouns were primarily interrogative pronouns and numerals. Most of the interrogatives were used by the children to ask their mother where an object or area was, during setup for play (see Example (8)).

(8) Samuel, 7;4, symbolic play

Sam20	la cuisine ***où*** est-ce que on va la mettre?	'the kitchen, ***where*** are we going to put it?'

Subsequent mentions were also activity-dependent, since all of the differences between the two activities were significant except for null forms (nouns: $Z = -2.61$, $p = .009$; third-person pronouns: $Z = -3.27$, $p = .001$; demonstrative pronouns: $Z = -2.61$, $p = .009$; dislocations: $Z = -3.04$, $p = .002$; other pronouns: $Z = -2.17$, $p = .030$). Two patterns were observed. In *joint storytelling*, third-person pronouns (54.63%) represented a majority of the occurrences, as expected. In fact, they were used to realize one out of two subsequent mentions. In addition to third-person pronouns, we found nouns (19.41%) and also other pronouns (12.85%), along with a few demonstrative pronouns (6.56%) and dislocations (3.86%). In *symbolic play*, on the other hand, third-person pronouns were no longer in the majority (29.21%) and nouns outnumbered all other units (31.47%). Next to them, we noted demonstrative pronouns (16.38%), dislocations (12.72%), and a few other types of pronouns (8.84%).

Demonstrative pronouns and dislocations in symbolic play functioned in the same way as described above for the whole set of dialogues (see Examples (3) and (4) in 3.1.2). In Example (9), the demonstrative pronoun *ça* (*'that'*) was used to refer back to an already-mentioned referent (a ladder).

(9) Eva, 4;9, symbolic play

Eva31	maman ***ça*** j(e) mets où?	'Mommy, ***this***, where do I put?'
	((montre l'échelle à sa maman))	((shows ladder to mother))

In sum, for first mentions and subsequent mentions alike, we found differences between the two activities. Firstly, the proportions of nouns and third-person pronouns differed, and in some cases the patterns were opposite. Secondly, dislocations and demonstrative pronouns were used more in symbolic play than in joint storytelling. Thus, nouns and third-person pronouns varied in frequency according to their position in the referential chain.

However, the percentage of nouns used at a given position was also activity-dependent (Table 5 above). It is therefore legitimate to wonder about the respective weights of these two factors. Due to a lack of space in this chapter, we will discuss

10. Although demonstrative pronouns in first mentions occurred in non-negligible proportions, we do not discuss them here because their use was similar to that of the set of referring expressions as a whole (see 3.1.2).

nouns only because they exhibited more activity-related and position-related variations than third-person pronouns did. Was the use of a noun guided mainly by the position in the chain or by the current activity? To answer this question, we conducted a mixed-effect binomial logistic regression analysis (Table 6) on nouns, with three fixed effects: position in the referential chain (first mentions vs. subsequent mentions), activity (joint storytelling vs. symbolic play), and the child's age (in months). Items and participants were added to the model as random variables. The dependent variable was a binary variable indicating whether the referent was or was not a noun.

The model with the best fit included all three fixed effects tested and the random effect of the item. The *C*-value[11] for this regression was 0.91, which indicates a good fit of the model.

Table 6. Regression tables for nouns used by the older children

Fixed effects	Est.	SE	Z	Random effects	Var	SD
Intercept	−1.01	0.32	−3.158**	Item	1.499	1.225
Referential Chain (Subsequent Mention)[12]	−1.07	0.15	−7.083***			
Activity (joint storytelling)	0.93	0.22	4.209***			
Age (in months)	0.02	0.00	3.685***			

Number of observations: 1799, grouping factors: items, 475, *** $p < .001$, ** $p < .01$, * $p < .05$, $C = 90.80$
Est: estimate; SE: standard error; Var: Variance.; SD: standard deviation

The results (Table 6 and Figure 1) showed that all three factors played a significant role in noun use, but to different degrees. First of all, as noted on several occasions in this book, the position in the referential chain had a major impact, since nouns were seldom absent in first mentions. Also – and again in first mentions – the activity affected the number of nouns used, since nouns were significantly more frequent in joint storytelling than in symbolic play. This second tendency was especially characteristic of the children who were over 57 months old. In other words, children older than 4;9 used more nouns in first mentions during joint storytelling than during symbolic play.

11. The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong.

12. In Table 6, the category in parentheses on fixed-effects rows indicates the category value compared to the intercept (reference level). For binomial factors, the reference level is the other factor, for multilevel factors, the reference level is the one level not appearing on any line of the table.

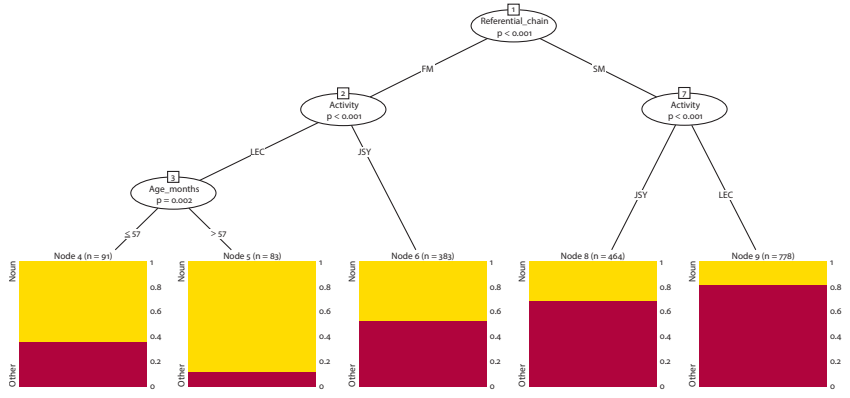

Figure 1. Binary partition tree for nouns

3.2.3 *Joint storytelling at home and at school*

Let us now look at how the various referring expressions were distributed as a function of their position in the referential chain (Table 7).

Table 7. Distribution (in percentage) of referring expressions at each position in the referential chain, for the two social settings pooled and for each setting taken separately (home vs. school)

Setting	Position	Nouns %	3PP* %	Disl %	Dem %	Null forms %	OthP %	N=
Both settings	FM	74.18	9.45	5.45	4.36	2.18	4.36	275
	SM	32.73	49.13	5.06	4.82	6.09	2.17	279
	REA	56.27	22.22	15.05	0.72	2.51	3.23	267
	REP	58.05	31.46	3.00	2.62	1.12	3.75	1659
	Total	**42.70**	**39.80**	**6.01**	**4.07**	**2.10**	**5.32**	**2480**
Home	FM	62.5	14.58	9.03	6.25	4.17	3.47	144
	SM	22.45	52.55	4.30	7.80	2.96	9.95	744
	REA	30.93	38.14	15.46	2.06	1.67	9.28	97
	REP	33.33	48.48	1.52	6.06	3.03	7.58	66
	Total	**29.40**	**45.77**	**5.80**	**6.95**	**3.24**	**8.85**	**1051**
School	FM	87.83	4.35	0.87	2.61	0.00	4.35	115
	SM	34.08	52.54	6.44	2.60	1.12	3.22	807
	REA	69.44	13.89	15.00	0.00	1.67	0.00	180
	REP	63.74	28.57	3.85	1.65	0.55	1.65	182
	Total	**48.05**	**39.41**	**6.78**	**2.10**	**1.01**	**2.65**	**1284**

* 3PP: third-person pronouns, Disl: dislocations, Dem: demonstrative pronouns, OthP: other pronouns, FM: first mention, SM: subsequent mention, REA: reactivation, REP: repetition.

Not surprisingly, nouns prevailed in *first mentions*, both at school and at home, but this phenomenon was much greater at school. We can see a clear-cut impact of the preschool setting, where the adult model took precedence. In the school interactions, virtually all of the linguistic markers were nouns, whereas children interacting with their mother employed not only nouns – still in the majority – but also third-person pronouns[13] and a few dislocations, as noted above (3.1.3).

In *subsequent mentions*, as expected, it was third-person pronouns that predominated in both settings, with the same proportion at school and at home. Then came nouns, with more occurrences at school than at home. Nouns in subsequent mentions were produced mainly by the children in their first year of preschool, for whom 45.81% of the referring expressions used were nouns. The children in their second or third year used fewer nouns (26.18% and 25.81%, respectively). A closer look at nouns in subsequent mentions showed that the children were either referring to the same referent with a different noun, as in Example (10) about a fox. Or they were using a noun to talk about an already-mentioned referent, but with a change in thematic focus, as in Example (11) where the hen that was the theme in Tea 20 (*ça*, 'that') became the rheme in Jul6.

(10) Lila, school, YR1

Tea13	on a dit qu'il y avait un renard.	'we said there was a fox.'
Lil1	***un loup***!	'***a wolf***!'

(11) Jules, school, YR1

Tea20	***ça*** a une petite crête rouge.	'***that*** has a little red crest.'
	donc qu'est-ce qu'il fait le renard?	'so what is the fox doing?'
Tan5	il se balade dans les bois	'he's walking in the woods'
Ken9	il y a un petit peu de blanc sur sa queue	'there's a little bit of white on his tail'
Tea21	il se balade dans les bois.	'he's walking in the woods.'
Tea21	et	'and'
Jul6	avec avec ***la poule***!	'with with ***the hen***!'

Reactivations were produced at home essentially with third-person pronouns (38.14%), followed by nouns (30.93%) and dislocations (15.46%). In the preschool setting, on the other hand, nouns outnumbered all other forms (69.44%) at this position, followed by dislocations (15%) and then pronouns (13.89%). Once again, and as suggested above, the impact of the school setting was clear here, where reactivations (like first mentions) were realized using nouns, perhaps due to the polyadic nature of the interaction.

13. First mentions with third-person pronouns included first mentions of a group of characters previously mentioned separately.

Regarding *repetitions*, we can see a similar pattern. Nouns were prevalent at school (63.74%), followed by third-person pronouns (28.57%). At home, on the contrary, repetitions were achieved mostly by third-person pronouns (48.48%), with nouns representing 33.33%. Here again, we found opposite tendencies in the two social settings. Repetitions via noun phrases were mostly done by the youngest children (YR1), 52% of whose repetitions were nouns. These cases corresponded to uptake of a reply utterance, as in Example (12) where the children answer a question asked by the teacher.

(12) Lila, Anaïs, school, YR1

Tea and the children are asking where the fox is going after he took the hen.

Tea108	peut-être qu'il va faire dodo	'maybe he is going to beddy-byes'
Rom34	***il va ramener la poule chez lui***	'***he is taking the hen to his home***'
Lila16	peut-être qu'***il va amener la poule chez lui***	'maybe ***he is taking the hen to his home***'

Tea is asking who are the characters on the tree. The children name only the fox, so the teacher asks « that's all? »

Tea163	c'est tout?	'that's all?'
Lila26	**et *la poule*!**	'and ***the hen***!'
Lilo4	il a pris ***la poule***!	'he took ***the hen***!'
Ana20	et ***la poule***	'and ***the hen***'
Jul56	et le nounours	'and the teddy'

4. Discussion

The present chapter analyzed the use of referring expressions during adult-child interactions, in order to assess the impact of two factors: the activity being carried out by the participants and the social setting. We hypothesized that these two factors would have an effect on the referring expressions used by the children. To test this hypothesis, we made a number of comparisons among 2- and 3-year-old children (toddler group) and among 4- to 7-year-old children (older group). In most respects, our hypothesis was validated.

Concerning the *impact of the activity*, in the mother-child interactions of the *toddler group*, the children preferentially used nouns in all three activities, as expected (Nashawati, 2010), but the percentage varied across the different activities (daily, toys, pictorial). Nouns were more frequent in the daily routines than in the pictorial and toys activities, while the opposite pattern was observed for third-person pronouns. Not surprisingly, demonstrative pronouns

were more frequent in the pictorial activity, and this was also true for dislocations of demonstrative pronouns. Null forms, on the contrary, were less frequent in the pictorial activity than in the toys and daily activities. Although in all three activities the participants could point directly to most of the referents as the interaction unfolded, we noted more fully explicit referring via a noun in the daily routines, in contrast to the pictorial activity, where deictic forms were more frequent.

Turning now to the use of referring expressions at the various positions in the referential chain, we found no activity-related differences except for null forms: in subsequent mentions, null forms were more common in toys and daily routines than in pictorial. We can assume that the children produced this type of referring expression in cases of a highly accessible referent (more likely to occur during toys and daily), namely, a previously mentioned referent that was the current focus of the speakers' joint attention (Allen, 2000; Hughes & Allen, 2013; Serratrice, 2008; see also Chapter 3, this volume). It is also possible that during toys and daily routines, the children had more opportunity to participate actively in the elaboration of longer referential chains. This could account for the use of null forms in subsequent mentions – it would not be necessary to re-verbalize a referring expression that was already a discourse-given (Salazar Orvig et al., 2010; Wittek & Tomasello, 2005).

In the *older group*, where the two activities compared were joint storytelling and symbolic play, we found contrasted referring-expression distributions. One difference was that these two activities exhibited opposite patterns for nouns and third-person pronouns: nouns outnumbered third-person pronouns in symbolic play, whereas third-person pronouns outnumbered nouns in joint storytelling. Another difference was the greater referring expression diversity in symbolic play. Two explanations seem to account for these uses. For one thing, symbolic play is more situation-dependent, manifested here by the continuous manipulation of the play materials and the ensuing greater use of demonstrative pronouns, and demonstrative and personal pronoun dislocations. For another, some of the referential chains were longer in joint storytelling than in symbolic play, where setting up the materials and building the scenarios took place throughout the exchange. This structural difference between the two activities helps explain the opposite roles of nouns and third-person pronouns.

Regarding the position in the referential chain, referring expressions were used differently in the two activities. We again observed greater diversity of referring expressions in symbolic play than in joint storytelling. As a result, nouns – highly expected for first mentions in storytelling – were much less frequent in this position during symbolic play. In short, we noted a position effect and an activity effect on the use of nouns, which we confirmed via a logistic regression

analysis. The analysis also pointed out that for the oldest subgroup of children, the two activities differed as to the use of nouns in first mentions. The gradual appropriation of the specificities of narratives, and acculturation to written discourse, are likely to account for the different ways of using nouns in these two activities among the oldest children in our study.

To complete this discussion on the use of referring expressions by children performing different activities, let us attempt to compare the toddler group with the older group, without, however, claiming to draw a developmental pathway. First, there were between-activity differences in the use of referring expressions in both groups (all positions pooled). This means that very early on, when carrying out an activity with a familiar adult, the children were sensitive to certain characteristics of that activity, notably, the accessibility of the referent for the toddlers and the more or less conventional nature of shared storytelling for the older children. In contrast, for the position in the referential chain, no difference between the activities was observed among the toddlers (with the exception of null forms in subsequent mentions, see above), whereas such a difference did exist among the older ones (see above for first mentions). Second, a qualitative analysis of the use of referring expressions showed that the dislocation patterns of the two groups were not the same: the toddlers used more noun dislocations and fewer pronoun dislocations than the older children did, and conversely, the older children produced fewer noun dislocations and more pronoun dislocations than the toddlers did. As stated above, we again noted the importance of nouns among the toddlers and greater referring expression diversity among the older children. However, these variations cannot be reduced solely to an activity effect and a position effect, since other factors were also at play. The other factors were related not only to the situation (materials used in the interaction, the speakers' interlocutionary roles, shared knowledge), but also to the features of the dialogue (type of referent – see Chapter 4, Rezzonico, Vinel, de Weck, Hassan, & Salagnac, 2021 –, speech genre – see Salazar Orvig et al., 2018, and Chapter 10, Vinel et al., 2021) and to individual differences between the children as well.

Our last study pertained to the *impact of social setting* (home vs. school). Comparisons of the children's productions in these two contexts pointed out some contrasting tendencies, in terms of both the types of referring expressions employed and their distributions as a function of the position in the referential chain. We found greater diversity of referring expressions at home, even though third-person pronouns and nouns predominated. In the preschool setting, it was essentially nouns that prevailed, with other types of pronouns, demonstrative pronouns, and null forms occurring only in marginal quantities.

Although the children rarely introduced referents in the preschool setting, when they did, it was almost always with a noun. We can see that the monological,

decontextualized narrative conveyed by the schools was clearly in effect here. As a general rule, nouns predominated in school at every position in the referential chain, even for subsequent mentions and repetitions.

In conclusion, the studies presented in this chapter once again demonstrate the complexity of referring-expression use by children when it is examined from a dialogical angle. We can assert that both of the main factors studied in this chapter – the current activity and the social setting – had a definite impact on the children's use of referring expressions, even among the youngest children. Recall that these effects have already been observed for other dimensions of language (de Weck & Rosat, 2003; Gerhardt, 1990; Heurdier, 2015, 2018; Hoff, 2010; Leaper & Gleason, 1996; Zucker et al., 2010), and they are starting to be considered for referring expressions (de Weck & Jullien, 2013; Kail & Hickmann, 1992; Kern & Raffara, 2012; Salazar Orvig et al., 2018; Vinel, Salagnac & Hassan, 2014). Our results contribute new data – both developmentally speaking and in terms of the different uses of language by children in their everyday interactions at home and at school – and fall in line with the interactional perspective underlying these studies. Clearly, our findings not only posit that the acquisition of language skills takes place during interactions with more competent speakers (Bruner, 1983), but also that the ways in which linguistic units are used are dependent upon the production context (Bronckart, 1996), defined by various parameters including the current activity and the social status of the participants.

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CHAPTER 10

The impact of speech genres on the use of referring expressions

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This chapter is aimed to assess the impact of speech genre on the use of referring expressions. We examined this impact in two corpora of mother-child dialogues (toddlers, ages 1;10–2;6 years and older children ages 4–7 years) via two separate studies. The first study showed that among the toddlers, the discursive sequence and the utterance genre influenced the use of referring expression more strongly than the position in the referential chain. In the second study, which looked at the narrative sequences in both corpora, we observed two phenomena: firstly, demonstrative expressions were relatively independent of the position in the referential chain, with genre overriding position; secondly, position in the referential chain took precedence for the noun-pronoun opposition, a key factor in how characters are handled in a narrative. However, the results also showed that the position factor interacted with both genre and age. The discussion deals with the implications of these findings for understanding children's first uses of referring expressions.

Keywords: children, demonstrative pronouns, discursive sequences, interaction setting, joint story-telling, nouns, referential chain, speech genre, third-person pronouns, utterance genre.

1. Introduction

The results of the studies presented in this book (in Chapter 3, da Silva-Genest, Salazar Orvig, Marcos, Caët, & Heurdier, 2021, and in Chapter 7, Marcos, Salazar Orvig, da Silva-Genest, & Heurdier, 2021), like other work on naturally occurring dialogues, show that young children are sensitive to a referent's

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attentional and discursive status, and tend to produce pronouns (or null forms and fillers) for referents already mentioned in the discourse. In other words (see several chapters in Serratrice & Allen, 2015) they are sensitive to the accessibility (Ariel, 1990) or givenness of the referent (Gundel, Hedberg, & Zacharski, 1993). Older children (Chapter 4, Rezzonico, Vinel, de Weck, Hassan, & Salagnac, 2021, and Chapter 5, Rezzonico, Bernasconi, de Weck, da Silva-Genest, & Jullien, 2021) use nouns in a different way than pronouns, depending on the position in the referential chain in discourse and the referent's syntactic function. The question raised, then, is: How do children acquire such skills? Several hypotheses have been set forth in the literature, some linking these skills to the properties of the language being acquired, others to cognitive development (see Serratrice & Allen, 2015). In the interactional and dialogical approach (Bruner, 1983; Vygotsky, 1933/1962), it is considered essential to take two other factors into account: the context in which the linguistic units are used and the language games in which the children are involved (François 1984; Nelson, 2007; Wittgenstein, 1953). In continuation of the preceding chapters, we will focus more specifically here on the discursive dimension of these uses, i.e., speech genres. After stating our conception of speech genres, we will look at how they affect language development, particularly the acquisition of referring expressions.

1.1 What do we mean by speech genres?

Our starting point will be the definition proposed by Bakhtin (1979/1986) following Vološinov (1929/1986), who described speech genres as "relatively stable types of […] utterances" (Bakhtin, 1979/1986, p. 60) characterized by three interrelated aspects: thematic content, style, and compositional structure. Speech genres depend on the social conditions of the activity sphere in which they are produced, and as such, reflect the particular conditions and finalities of each domain of human activity. It follows that they are also defined by parameters such as the social setting, the social positions of the speaker and addressee, and the goal of the interaction (Bronckart, 1996). This definition, like that of Wittgenstein's (1953) language games, thus has two complementary facets which, depending on the author, are either dissociated or, on the contrary, amalgamated: genre can refer to language products like texts and verbal interactions, or to patterns of discourse involving recurring forms and structures.

Accordingly, albeit in different ways, Adam (2011), Bronckart, Bain, Schneuwly, Davaud, and Pasquier (1985), Roulet (1991), and Filliettaz (2004) oppose the analysis of discourse types based on textual macrostructures and compositional characteristics, to genres rooted in socially determined language activities. On their side, Kerbrat-Orecchioni and Traverso (2004) confine the term "genre" to two opposing levels, G1 and G2. G1 corresponds to "types of interactions" or "types of communicative events" institutionalized in a given society, such

as conferences and interviews; G2 refers to "types of discursive activities" characterized by "certain features of a rhetorical-pragmatic nature or rooted in their own discursive organization" (2004, p. 43, our translation), such as narration and argumentation. Each of these two levels is defined by internal criteria, that is, particular elements of the linguistic material and the particular discursive organization.

For this chapter, and in line with the tradition initiated by François (1993), we use the term "genre" to refer to these recurrent types of discursive organization (narration, explanation, description, argumentation, etc.), as they are utilized in different kinds of texts or verbal interactions. This definition cannot mask the existence of a second layer of complexity: whether we are situated at the level of the discursive pattern or the interaction type, a discourse is rarely homogeneous. According to François (1993), for example, a narrative can include "explanations, descriptions, reported speech or evocations of feelings" (1993, p. 114, our translation). In every discourse, we find a succession of dominant genres and subordinate subgenres that are nested and intertwined (François, 1993; Vion, 1999).

1.2 How do speech genres affect language development?

The interactional and socio-discursive approaches, to which we adhere, also stress that it is through interactions with members of their cultural community that children develop, appropriate, and internalize the sociocultural meanings that are built throughout the history of the community (Nelson, 2007; Tomasello, 1999; Vygotsky, 1933/1962). In this way, children take part in different types of interactions, notably organized in terms of particular formats (Bruner, 1983), scripts (Nelson, 2007), or language games (François, 1984; Wittgenstein, 1953). During such interactions, the child experiences the speech and discourse practices that constitute the context – and in some way, the models – of his/her own productions (de Weck, 2005). Within these practices, various factors such as the activity being carried out, the type of interlocutor, and the written or oral channel can have an impact on young children's language productions, influencing not only the various structural levels (lexicon, syntax, morphology, phonology) but also the functional or pragmatic levels (speech acts). The same holds true for the use of referring expressions, which turns out to be influenced by the activity (see Chapter 9, de Weck, Hassan, Heurdier, Klein, & Salagnac, 2021; Salazar Orvig, Marcos, Heurdier, & da Silva, 2018), the interlocutors (parents or teachers) (see Heurdier, 2015, 2018; Vinel, 2014; Chapter 8, Hassan, de Weck, Rezzonico, Salazar Orvig, & Vinel, 2021), and/or the discourse production channel (oral or written) (de Weck, 1991; Mazur-Palandre & Jisa, 2012). Clearly, then, contextual factors affect the use of referring expressions by the same token as do the position occupied by the referent in the discourse, its accessibility, and the amount of knowledge shared by the participants.

What about the impact of genres? In the dialogical perspective (Bakhtin, 1979/1986; Vološinov, 1929/1986), speech genres constitute the basic functioning level for the speaker, and it is therefore through them that the child grasps a particular language (de Weck, 2005; François, 1984). Most research dealing specifically with the impact of speech genres[1] has focused on the discourse of children age 9 or older (Berman & Nir-Sagiv, 2004; Chenu, Jisa & Mazur-Palandre, 2012; Jisa & Strömqvist, 2002). These studies have shown that the use of certain syntactic structures and linguistic forms varies as a function of the type of discourse (narratives of personal experiences or expository text). Berman and Nir-Sagiv (2004) noted that these variations were more pronounced among the youngest children. Gayraud, Gonnand, Kern, and Viguié (1999) as well as Gonnand and Jisa (2000) found that these differences also apply to different types of narratives (i.e., based on personal experiences or pictures), particularly for 9- and 10-year-olds.

Other studies have shown that the use of referring expressions depends on whether narration or another speech genre is at stake. Mazur-Palandre and Jisa (2012) noted that, according to the type of text (narrative or expository) and the production channel (oral/written),[2] the proportion of noun phrases changed with the status of the information being conveyed: Noun phrases were employed more often to maintain information in narrative and oral texts, but were more frequent for introducing a new referent in expository and written texts. These authors also found age-related differences in usage (ages 10–11, 12–13, and 15–16 years): as they grew older, the children introduced more and more new referents and produced longer and longer referential chains. Pellegrini, Galda, and Rubin (1984), who based their study on the work by Halliday and Hasan (1976), showed that children's productions were a function of the speech genre proposed (narrative or persuasive, both based on a picture): when the discourse was narrative, the children shared more information about the picture with their interlocutor, developed longer themes, and used a more varied lexicon than when the discourse was persuasive; the persuasive genre led to greater use of causal conjunctions and more reliance upon shared knowledge and contextual cues to supply information. De Weck (1991) found that anaphoric density, and also the type of anaphora employed, varied with speech genre in children aged 8;4 to 15;0. Anaphoric density was greater in narrations of stories than in narrations of personal experiences. More specifically, personal pronouns were used for primary characters in storytelling and for secondary characters in narratives of personal experiences;

1. Even though most of the studies cited refer to French-speaking children, some are also concerned with other languages or adopt a cross-linguistic perspective (Berman & Nir-Sagiv, 2004; Pellegrini, Galda & Rubin, 1984).

2. See also Rosat (1991).

third-person possessive pronouns were employed more often to link objects to characters; and relative pronouns occurred more often in narratives of personal experiences than in storytelling.

Moving down to the utterance level, Salazar Orvig et al. (2018) studied the links between speech genre and the use of referring expressions in the discourse of French-speaking 2-year-olds. Their results indicated that genre affected the use of referring expressions, especially third-person pronouns. In particular, descriptive utterances were more often associated with third-person clitic pronouns, whereas labelling utterances were more often associated with clitic demonstrative pronouns. Moreover, nouns appeared to be less affected by genre, probably because they were used more than clitic pronouns were.

Our first hypothesis here is that children's early sensitivity to referent accessibility (Ariel, 1990) or givenness (Gundel et al., 1993) stems from a skill that is linked to inclusion of a referring expression in a given genre. If this hypothesis is supported, then our second hypothesis will be that this link evolves with age. In the present chapter, we will attempt to determine the extent to which speech genres influence the use of referring expressions by toddlers, and by preschool and elementary school children. Knowing that the position of a referring expression in the referential chain is another key factor in the use of referring expressions, we will also assess the respective effects of these two variables (speech genres, position) and how they interact with each other.

2. Method

To answer the above questions, we compiled data from two separate studies (toddlers vs. older children). In addition, in order to determine the effects specific to speech genre, we looked at only one particular type of activity, namely, picture-based activities (the most frequent type in our corpus).

We will begin by presenting the population and data-collection process (2.1). Then we will describe the coding procedure and the statistical tests used (2.2).

2.1 Participants and data collection

The corpora were made up of 51[3] interactions that took place in the children's homes. In the toddler corpus, there were 14 children between the ages of 1;7 and 2;6 years (MLU 1.92 to 3.37). In the older-children corpus, there were

3. In the toddler corpus, the number of sessions differed from the number of children because five of the children were followed-up longitudinally, so they participated in more than one session.

30 children: nine were 3;6 to 4;5, eight were 4;6 to 5;5, seven were 5;6 to 6;5, and six were 6;6 to 7;5.[4]

The developmental variable was addressed in two different ways. (a) Given the great individual variability that exists around 2 years, age cannot be seen as a reliable indicator, so we chose MLU as the developmental variable. (b) But given that after the age of 3, MLU is no longer a reliable indicator of linguistic development (Morehead & Ingram, 1973), we chose age as the developmental variable for the older children.

Because the activity being carried out also has an impact on the use of referring expressions (see Chapter 9, de Weck et al., 2021), we only worked with picture-based activities. For the toddlers, there were 21 sessions in which the child was interacting with his/her mother or another familiar adult. The participants were engaged in joint storytelling of a picture book (with or without words) or in play situations involving pictures (puzzles, lotto, card games, drawings). The 30 sessions of the older children were video recorded during joint storytelling of a wordless storybook entitled *Ah, les belles vacances des petits cochons!* [5] proposed by the observer to the child and mother. The interlocutors were asked to tell the story as they were accustomed to doing. The mother and the child saw the book for the first time together when the activity started.

The linguistic productions of the participants were transcribed phonetically for the toddlers and orthographically for the older children. The productions were then segmented into utterances.[6]

2.2 Coding

We analyzed only those uses that referred to first-order entities, not to the participants of the interaction, and we did not include non-referential uses of linguistic units. The expressions produced by the children that referred to

4. The data for this chapter were drawn from several corpora. See the Appendix I for a complete description. The observations included in the toddler corpus were taken from the Childcare corpus, the Standardized play corpus, the Nashawati corpus, Anaé and Madeleine from the Paris Corpus and the Salazar Orvig Corpus; the observations for the older children corpus were drawn from the DIAREF-Lille Corpus and from the Mother-Child Interactions corpus. In line with Chapter 4 (Rezzonico et al., 2021) which demonstrated the lack of an age effect on the choice of referring expressions, we did not further subdivide the corpus into age groups.

5. Goodall, J. S. (1980). *Ah les belles vacances des petits cochons!* Paris: Gallimard. Original edition: *Paddy Pork's Holiday*, Macmillan Children's Books (1975). See Appendix III.A for the summary of the story.

6. We considered an "utterance" to be any segment of discourse that exhibited internal syntactic cohesion and was syntactically independent of the surrounding segments.

characters or other animate or inanimate entities were coded and analyzed. For the toddler corpus, all referents were considered; for the older-children corpus worked on the 80 referents of the story.

2.2.1 *Categories of referring expressions*

This chapter focused on four main categories of referring expressions:

- Nouns: common, proper, and adjectives used as nouns.
- Third-person pronouns: *il(s), elle(s), lui, leur, eux, le, la, les* (*'he', 'she', 'it', 'they', 'him', 'her', 'them'*).
- Strong demonstrative pronouns such as *ce* (*'this'*) and *ça* (*'that one'*).
- Clitic demonstrative pronoun *c'* as in *c'est* (*'it's'*).

All other forms were grouped under the heading "other referring expressions" (noun and pronoun dislocations, null forms and fillers and adverbial, interrogative, relative, possessive, indefinite, and numeral pronouns).

In order to understand and determine the impact of speech genres on the use of referring expressions, we will approach them from two complementary angles, the discursive sequence (2.2.2) and the utterance genre (2.2.3). We will then attempt to determine whether these two aspects are complementary to, or in competition with, the position of the referring expressions in the referential chain (2.2.4).

2.2.2 *Discursive sequences*

When adults and children interact in a dialogue, various different discourse patterns are produced, either in succession or intertwined to form sequences. Based on Bronckart's (1996) approach adapted to our activities, we retained two types[7] of discursive sequences:

- Narrative discourse: discourse about the fictional space described in the story (the characters and their actions, events, and places).
- Here-and-now discourse: discourse about the objects present and the actions actually being carried out.

These two types of sequences are likely to affect the use of expressions to refer to entities.

7. In all the corpora analyzed for this book, we (like Bronckart, 1996) also found personal experience narrations and theoretical discourse. However, these two types of discourse were infrequent in the picture-based activities retained for this chapter.

2.2.3 *Utterance genres*

Within a discursive sequence, utterances of various speech genres can be produced. Six genres were distinguished here, based on the work by François (1984) and Adam (2011).

- State descriptions: descriptions of states, situations, and objects, as in *i(l) y avait que des cochons dans cette ville !* (*'There were only pigs in this city'*) (Lila, 3;11).
- Action or event descriptions: descriptions of actions or events in the present, as in *il court là* (*'he's running there'*) (Sophie, 7;2); in the past, as in *il est revenu* (*'he came back'*) (Anaïs, 4;4); or to be carried out, as in *il va app(e)ler des oiseaux* (*'he's going to call some birds'*) (Eva, 4;9).
- Labelling: categorization of discourse objects, as in *c'est un train* (*'it's a train'*) (Elouan, 4;4).
- Explanations, justifications, and arguments: exchanges related to explanations, as in *euh oui pa(r)ce que i(l) court pour aller les voir* (*'uh yes because he's running to go see them'*) (James, 4;6); and justifications of what is said or done, as in *et personne ne veut de lui alors on ne le prend pas* (*'and nobody wants him so they don't pick him up'*) (Manon, 7;3). Arguments and counter-arguments were also included in this category.
- Negotiations: exchanges related to the current activity, as in [nɔpato] *non pas toi* (*'no not you'*) while adding a block to a pile (Margaux, 2;3).
- Other: residual categories of the phatic type, such as *oui!* (*'yes!'*) or *alors* (*'so'*); value judgments, as in *ils étaient vraiment gentils cette famille* (*'they were really nice that family'*) (Ludmilla, 4;2); and metalinguistic utterances, as in *oui c'est pour dormir une tente* (*'yes, it's for sleeping, a tent'*) (Anaïs, 4;4).

Example (1) below illustrates a chain of speech genres conveyed by utterances in a narrative sequence produced by a child and her mother.

(1) Sophie, 7;2[8]

Sop57e	je crois que c'est un…((pointe l'image))	'I think it's a… ((points to the picture))'	LAB[9]
Sop 57f	comment s'appelle déjà?	'what's it called again?'	LAB
Sop 57g	un:: épouvantail	'a scarecrow'	LAB

8. The Example caption indicates the name of the child and her age (years; months). The first three letters of the child's first name are given in lowercase (e.g., Sop for Sophie). Mot stands for mother. An approximate English translation is given between inverted commas. Braces indicate uncertain transcriptions or alternative interpretations. For more informations on transcription conventions, see Appendix II.

9. In this example, each utterance in the same speech turn is presented on a different line and is indexed with a letter. LAB stands for Labelling, EJA for explanations and justifications, OTH for Others, SDES for State Descriptions and ADES for Action descriptions.

(…)			
Mot 72b	pourquoi il a des gouttes de sueur?	'why does he have drops of sweat?'	EJA
Sop 68a	parce que il est timide.	'because he's shy'	EJA
Sop 68b	je ne sais pas.	'I don't know'	OTH
Mot 73a	ben il a peur.	'well he's afraid'	EJA
Mot 73b	tu crois que c'était lui le pianiste?	'do you think it was him, the pianist?'	SDES
Sop 69a	{parce qu'il a peur}. /	'because he's afraid'	EJA
Sop 69b	là y a des [spektaktœʁ] {spectateurs} qui le regardent. ((tourne la page))	'here there are spectators who are watching him' ((turns the page))	ADES

In this narrative sequence, the child produced utterances of three types: labelling (Sop57e, 57f, and 57g), explanations (Sop68a and 69a), and an action description (Sop69b).

2.2.4 *Position in the referential chain*

The third aspect we considered was the position of the expression in the referential chain and how that position affected the type of linguistic unit used. Four positions were distinguished:

- First mentions: first occurrence of a referent in the dialogue.
- Subsequent mentions: later mentions of a referent, within four speech turns.
- Reactivations: subsequent mentions of a referent beyond four speech turns.
- Repetitions: a referent is mentioned in an utterance that reproduces the communicative intention of an immediately preceding utterance, including phonological and/or syntactic reformulation and requests for confirmation.

2.2.5 *Intercoder agreement and statistics*

Data coding was checked for coder agreement. For each dyad, 10% of the corpus was coded independently by a second, different member of the team. The results of the toddler group were as follows: for the categories of referring expressions, the intercoder agreement rate was 95.81% (Cohen's kappa = 0.95); for position in the referential chain, it was 87.24% (Cohen's kappa = 0.843). The results of the older group were as follows: for the categories of referring expressions, the intercoder agreement rate was 96% (Cohen's kappa = 0.94); for position in the referential chain, it was 89% (Cohen's kappa = 0.80). Intercoder agreement was checked for the discursive sequences and for the genres in the two corpora pooled, again based on 10% of each dyad's utterances. For the discursive sequences, the intercoder agreement rate was 91.81% (Cohen's kappa = 0.85); for the genres, the intercoder agreement rate was 83.69% (Cohen's kappa = 0.80).

Several statistical analyses were conducted, depending on the type of data and the questions asked. We calculated Spearman correlations between the proportion of referring expressions and MLU for the toddlers, and between the proportion of referring expressions and age for the older children. A non-parametric test (Wilcoxon) was used to compare the overall distribution of referring expressions in the two corpora (3.1). To study the distribution of referring expressions for the various factors (i.e., discursive sequence, utterance genre, position in the referential chain, and corpus) we inspected visually each table. The potential impact of the fixed-effect factors on the use of the four selected linguistic expressions was explored with mixed-effect binomial regressions (using the glmer function of the lme4 R-package; Bates, Mächler, Bolker, & Walker, 2015). When several factors turned out to be competing, their interaction was further assessed using binary partition trees drawn with the ctree function included in the "party" R package (Hothorn & Zeileis, 2015).

3. Results

The results are presented in three sections. The first section (3.1) gives a general description of the use of referring expressions in both corpora for all sequences pooled, and the impact of the developmental variable on their proportions. The second (3.2) illustrates how discursive sequence, utterance genre, and position in the referential chain interact in the use of referring expressions. Because the older-children corpus contains only joint storytelling situations and thus presents only narrative sequences, we focus solely on the toddler corpus which includes both sequences (here-and-now and narrative). The third (3.3) analyzes the impact of utterance genre and the position in the referential chain on the use of referring expressions in the narrative sequences of the two corpora.

3.1 Distribution of referring expressions

Table 1 gives the distribution of the referring expressions used by the toddlers and by the older children.

As a whole, the distributions of referring expressions of the two corpora were different.[10] Only nouns occurred in similar proportions. Compared to the older children, the toddlers produced a significantly lower percentage of third-

10. Table 1 also shows the percentage of other REs. However, this grouping lumps together a set of referring expressions (dislocations and relative, indefinite, numeral, adverbial, possessive, and interrogative pronouns) that are heterogenous both in their formal and functional

person pronouns and a significantly higher percentage of strong demonstrative pronouns. They also employed more clitic demonstrative pronouns, although the difference between the two corpora was not significant due to large within-group variability.

Table 1. Distribution (in percentage) of referring expressions for the two corpora

Referring expressions	Toddlers %	Older children %	W	P
ThPP*	11.18	47.52	40	< .001
Nouns	36.99	33.16	341	.422
CDem	13.76	4.75	375.5	.134
SDem	7.63	1.66	441.5	.004
All other REs	30.43	12.92		
N=	930	1873		

* ThPP: third-person pronouns, CDem: clitic demonstrative pronouns, SDem: strong demonstrative pronouns, REs: referring expressions

None of these values were correlated with MLU for the toddlers, nor were they correlated with age for the older children. Given that the developmental variable did not account for the diversity of the children's productions in each corpus, we will now look at the impact of the various pragmatic factors (type of discursive sequence, utterance genre, and position in the referential chain).

3.2 Impact of discursive sequence, utterance genre, and position in the referential chain among toddlers

This section deals with the toddler corpus. We will begin by examining the impact of discursive sequence (3.2.1), utterance genre (3.2.2), and position in the referential chain (3.2.3) on the use of referring expressions. The results of logistic regressions for these factors are presented in Table 5. In Section 3.2.4, we examine the way in which these factors interact.

3.2.1 *Impact of discursive sequence*

Table 2 presents the distribution of referring expressions as a function of the discursive sequence, for all utterance genres pooled.

aspects. In all of the tables in this chapter, their total percentage is noted only to show the relative importance of the four types of referring expressions under focus in this chapter.

Table 2. Distribution (in percentage) of referring expressions in the discursive sequences of the toddler corpus

	H&N %	Nar %
ThPP*	6.69	18.73
Nouns	31.56	46.11
CDem	18.18	6.34
SDem	9.78	4.03
All other REs	33.79	24.78
N=	583	347

* ThPP: third-person pronouns, CDem: clitic demonstrative pronouns, SDem: strong demonstrative pronouns, REs: referring expressions, Nar: narrative sequences, H&N: here-and-now sequences

Young children use more third-person pronouns and more nouns in narrative sequences than in here-and-now sequences. However, in the logistic regressions (see Table 5), the discursive sequence did not have a significant effect when considered together with the other factors.

3.2.2 *Impact of utterance genre*

Table 3 presents the distribution of referring expressions for each utterance genre, irrespective of the type of discursive sequence. We found considerable variation in the use of referring expressions for state descriptions, action descriptions, and labelling.

Table 3. Distribution (in percentage) of referring expressions for each utterance genre among the toddlers (with H&N and Nar pooled)

	Ades %	SDes %	Lab %	EJA %	Neg %	Oth %	Total %
ThPP*	29.27	10.25	1.27	13.51	2.90	11.76	11.18
Nouns	32.93	41.25	10.19	56.76	57.97	23.53	36.99
CDem	0.61	8.50	54.14	5.41	0.72	14.71	13.76
SDem	1.22	7.75	11.46	2.70	10.87	11.76	7.63
All other REs	35.98	32.25	22.93	21.62	27.54	38.24	30.43
N=	164	400	157	37	138	34	930

* ThPP: third-person pronouns, CDem: clitic demonstrative pronouns, SDem: strong demonstrative pronouns, REs: referring expressions, Ades: action description, SDes: states descriptions, Lab: labelling, EJA: explanations, justifications and arguments, Neg: negociation, Oth: other genres

As Table 3 shows (see also Table 5 for the results of the regressions) third-person pronouns were found in larger proportions in action descriptions than in the

other genres. Nouns were proportionally more frequent in explanations and negotiations[11] and were proportionally less frequent in action descriptions and in labelling.[12] Demonstrative pronouns (clitic and strong) exhibited a different pattern, with preference for labelling and very little use in action descriptions. For strong demonstrative pronouns, the difference between state descriptions and labelling was nonsignificant whereas this difference was significant for clitic demonstrative pronouns, which predominated in labelling.

3.2.3 *Impact of the position in the referential chain*

As shown in the preceding chapters, third-person pronouns most often occurred in subsequent position in the referential chain. Table 4 confirms this behavior for the toddler corpus: third-person pronouns were more often associated with the subsequent mention of a referent than with its first mention.[13]

Table 4. Distribution (in percentage) of referring expressions for each position in the referential chain in the toddler corpus (with H&N and Nar pooled)

	FM %	SM %	Rea %	Rep %	Total %
ThPP*	1.87	17.54	7.14	9.52	11.18
Nouns	35.98	32.46	46.43	43.33	36.99
CDem	19.16	12.09	8.33	13.81	13.76
SDem	14.02	6.40	3.57	5.24	7.63
All other REs	29.97	31.52	34.52	28.10	30.43
N=	214	422	84	210	930

* ThPP: third-person pronouns, CDem: clitic demonstrative pronouns, SDem: strong demonstrative pronouns, REs: referring expressions, FM: first mention, SM: subsequent mention, Rea: reactivation, Rep: repetition

Unlike third-person pronouns, nouns were not characterized by a predominance of either of the two main positions (first mention and subsequent mention). Similarly, the first mention-subsequent mention difference was nonsignificant for clitic

11. The impact of explanations, justifications, and arguments, negotiation and other genres was not verified statistically due to the small number of utterances in these genres and the absence of negotiation occurrences in narrative sequences.

12. Recall that we only studied referential uses of nouns and pronouns. This is why we noted few nouns in labelling utterances.

13. Reactivation and repetition were not investigated in the regression models because few children used one or the other of these positions.

demonstrative pronouns, whereas strong demonstrative pronouns tended to be more frequent in the first-mention position.

3.2.4 *Joint impact of discursive sequence, utterance genre, and position in the referential chain*

In this section, we examine the joint effect of discursive sequence, utterance genre, and position in the referential chain. Interactions between these factors were analyzed for the following variables:

- Discursive sequence: narrative vs. here-and-now sequences.
- Utterance genre: action descriptions, state descriptions, and labelling vs. all other genres.
- Position in the referential chain: first mention and subsequent mention vs. all other positions.

The model with the best fit for each referring expression was obtained by comparing models using likelihood ratio tests, fixed factors were excluded by backwards elimination of non-significant effects. The best fit models included 3 to 5 fixed effects according to the referring expressions and one random factor (i.e., session). Table 5 presents the results of the logistic regressions.

Table 5 shows, firstly, that the discursive sequence did not predict a preferential use of any of the four types of referring expression. In contrast, utterance genre systematically influenced the young children's use of referring expressions. Nouns, third-person and strong demonstrative pronouns were also influenced by the position in the referential chain. Do these factors affect the use of referring expressions in an independent way or are they strongly linked to each other? Do children grasp the referential value of these linguistic expressions directly or do they associate them with the genre in which the referring expression occurs?

We used binary partition trees (Hothorn & Zeileis, 2015) to assess the joint impact of these factors on the use of the four types of referring expressions. The partition trees presented in Figures 1, 2, 3 and 4 include only those factors found to be significant once their interaction was taken into account. These factors are represented as nodes. The higher a node is in the tree, the greater the number of occurrences (of that referring expression) accounted for by the corresponding factor. The histograms at the bottom of the figure show the contrast between the presence of the referring expression under study and the presence of any other referring expression.

Table 5. Regression tables for third-person pronouns, nouns, clitic demonstrative pronouns and strong demonstrative pronouns in the toddler corpus (Nar and H&N sequences)

Fixed effects	Est.*	S.E.	z	p	Random effects	Var.	S.D.	*C*-value**
Third-person pronouns								0.84
Intercept	−2.87	0.41	−7.04	< .0001	Session	0.68	0.83	
Genre (ADes)***	1.49	0.36	4.10	< .0001				
Genre (SDes)	0.50	0.35	1.45	.1482				
Genre (Lab)	−1.48	0.77	−1.92	.0553				
Position (FM)	−1.49	0.56	−2.69	.0072				
Position (SM)	0.61	0.26	2.31	.0210				
Nouns								0.77
Intercept	0.26	0.25	1.07	.256	Session	0.53	0.73	
Genre (ADes)	−0.89	0.25	−3.53	< .0001				
Genre (SDes)	−0.48	0.19	−2.45	.0141				
Genre (Lab)	−2.09	0.33	−6.44	< .0001				
Position (SM)	−0.43	0.16	−2.79	.005				
Clitic Demonstrative Pronouns								0.90
Intercept	−3.41	0.47	−7.26	< .0001	Session	1.2	1.1	
Genre (ADes)	−1.90	1.06	−1.79	.0735				
Genre (SDes)	0.67	0.42	−1.62	.0106				
Genre (Lab)	3.20	0.42	7.64	< .0001				
Strong Demonstrative Pronouns								0.80
Intercept	−2.84	0.28	−10.31	< .0001	Session	0.62	0.79	
Genre (ADes)	−1.89	0.72	−2.63	.0086				
Position (FM)	0.97	0.27	3.64	.0003				

* Est.: estimate; S.E.: standard error; Var.: variance; S.D.: standard deviation
Ades: action description, SDes: state description, Lab: Labelling, FM: first mention, SM: subsequent mention. Number of observations: 930. Grouping factors: sessions: 20

** The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow and Sturdivant (2013) considered that *C*-values below .5 indicated a model that is not better than chance whereas *C*-values above .7 are reasonable and above .8 are strong

*** The category in parentheses on fixed-effects rows indicates the category value compared to the intercept (reference level). For binomial factors, the reference level is the other factor.

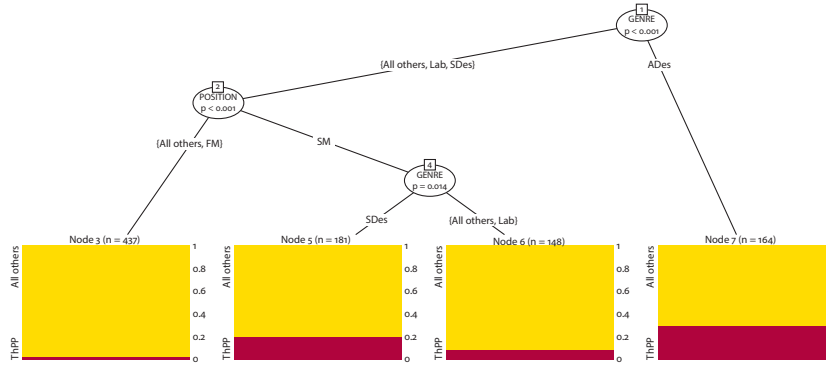

Figure 1. Binary partition tree for third-person pronouns in the toddler corpus

Figure 1 shows that third-person pronouns were subjected to complex interacting effects. Action descriptions (ADes) turned out to be the factor that affected third-person-pronoun use the most: for the other genres, position was the second-most influential factor. In the case of subsequent mentions, state descriptions (SDes) affected pronoun use (more pronouns in state descriptions than in other genres). In the other positions (first mention, reactivation, and repetition), pronouns were seldom used.

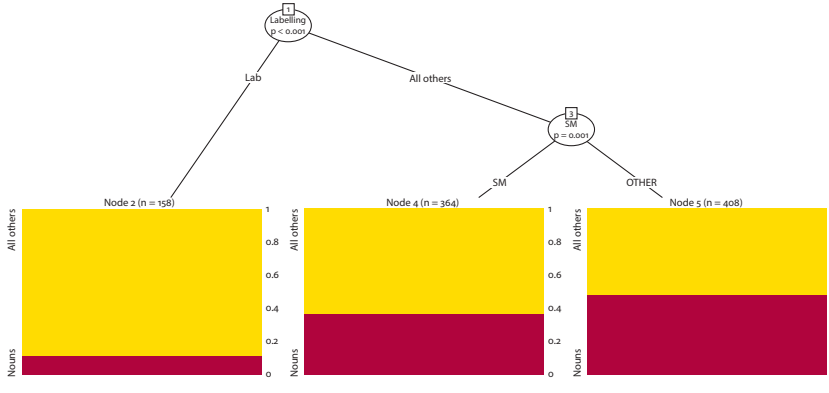

Figure 2. Binary partition tree for nouns in the toddler corpus

Figure 2 shows a mirror image of the noun use, as the factors considered have a negative impact. Utterance genre was always the dominant factor. However, labelling was the least preferred for nouns. At the second level of the figure, for utterances other than labelling ones, subsequent mention as opposed to all other positions in the referential chain appears to be a relevant factor, with proportionally fewer nouns in this position (irrespective the genre) than in the other positions (first mentions, reactivations and repetitions).

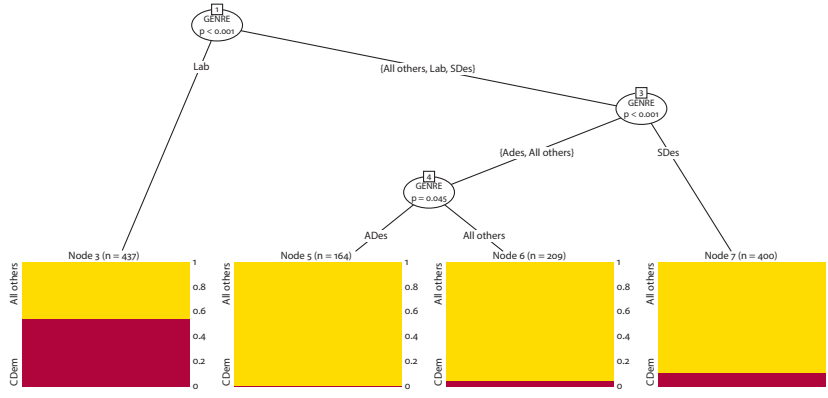

Figure 3. Binary partition tree for clitic demonstrative pronouns in the toddler corpus

Figure 3 shows that the use of clitic demonstrative pronouns was almost exclusively determined by the labelling genre. At the second level, clitic demonstrative pronouns were found in state descriptions. Neither discursive sequence nor position in the referential chain promoted their use.

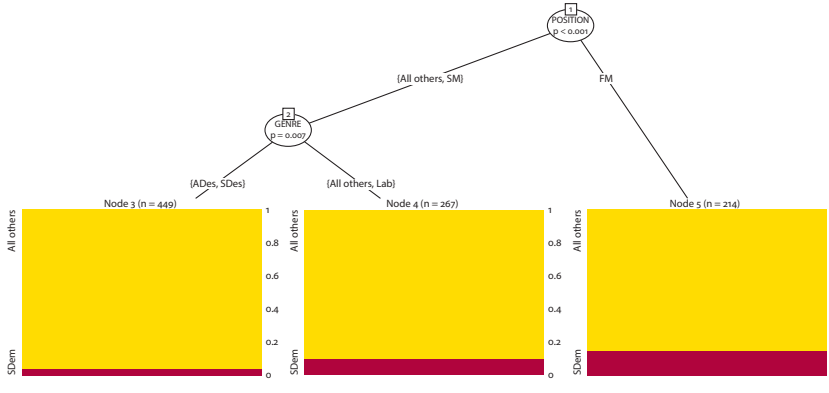

Figure 4. Binary partition tree for strong demonstrative pronouns in the toddler corpus

Strong demonstrative pronouns exhibited a different configuration, with position (FM vs. all others) as the predominant factor. When the referring expression was used for the first mention of a referent, there were proportionally more strong demonstrative pronouns than in the other positions. When the referring expression was in any other position (subsequent mention, reactivation or repetition) the utterance genre played a role: demonstrative pronouns were used the least in the description utterances (ADes and SDes).

These partition trees suggest for the toddlers that the utterance genre was the principal factor in third-person pronoun and noun use, and that the position in the referential chain was not always a predominant factor. When it was (for strong

demonstratives), utterance genre still interacted in determining the choice of a referring expression in the most frequent positions.

As a whole, these findings suggest that in dialogue, children first experience and learn to use referring expressions through speech genres. The position of the referring expressions in the referential chain – which is thought to be the main factor in adult usage, especially for third-person pronouns – appeared here as a secondary factor.

Now let us see how the use of referring expressions is affected when we consider a single type of discursive sequence (narrative discourse) at different ages.

3.3 Impact of utterance genre and position in the referential chain in narrative sequences, for the two corpora

We saw in Section 3.1 that the toddler corpus differed from the older-child corpus in its lower percentage of third-person pronouns and higher percentage of strong demonstratives. Can this difference be accounted for solely in developmental terms? Or is it also the product of the influence of pragmatic factors such as speech genre and/or position in the referential chain? One of the questions raised here is whether, as age and cultural familiarization with the narrative genre increase, children's use of referring expressions becomes governed to a greater and greater extent by factors that are more specifically referential or discursive. In this section, we will examine the impact of these factors together with the age difference of the two corpora in the sole context of narrative sequences. We examine each factor separately (Sections 3.3.1 and 3.3.2) before studying their interaction with age in Section 3.3.3.

3.3.1 *Impact of utterance genre*

Table 6 gives the distribution of referring expressions by utterance genre.

Table 6. Distribution (in percentage) of referring expressions for each utterance genre in the narrative sequences for the two corpora taken together

	Ades %	SDes %	EJA** %	Lab %	Oth %	Total %
ThPP*	54.26	24.89	57.36	2.27	24.14	43.02
Nouns	31.18	44.43	30.96	28.41	39.66	35.18
CDem	0.33	8.70	4.06	44.32	5.17	5.00
SDem	1.23	2.60	1.02	10.23	3.45	2.03
All other REs	13.01	13.39	14.77	6.60	27.59	14.77
N=	1222	655	197	88	58	2220

* ThPP: third-person pronouns, CDem: clitic demonstrative pronouns, SDem: strong demonstrative pronouns; REs: referring expressions, ADes: action description, SDes: state description, EJA: explanations, justifications and arguments, Lab: labelling, Oth: other genres

** The explanation data (EJA) were not included in the statistical analyses because not all of the children produced this genre.

In these narrative sequences, third-person pronouns were the prevailing type of referring expression in action descriptions, whereas nouns were the more frequent in state descriptions (although non-significant in Table 8). Pronouns were mostly absent from labelling utterances. Demonstrative pronouns (clitic and strong) were boosted by labelling. Clitic demonstrative pronouns were also proportionally frequent in state descriptions.

3.3.2 *Impact of the position in the referential chain*

Table 7 presents the distribution of referring expressions for each position in the referential chain.

Table 7. Distribution (in percentage) of referring expressions for each position in the referential chain, in narrative sequences (for the two corpora pooled)

	FM %	SM %	Rea %	Rep %	Total %
ThPP*	7.80	54.13	29.02	42.13	43.02
CDem	2.69	5.70	3.11	6.02	5.00
SDem	3.23	1.67	2.59	1.85	2.03
Nouns	71.77	24.53	39.90	38.89	35.18
All other REs	15.52	13.97	25.39	11.11	14.77
N=	372	1439	193	216	2220

* ThPP: third-person pronouns, CDem: clitic demonstrative pronouns, SDem: strong demonstrative pronouns, REs: referring expressions, FM: first mention, SM: subsequent mention, Rea: reactivation, Rep: repetition

In the narrative context, as in other discursive contexts, among the referring expressions, third-person pronouns were significantly more frequent in subsequent mentions and significantly less frequent in first mentions. Nouns were the prevailing expression for the first-mention position and significantly less frequent in subsequent mentions. Demonstrative pronouns (clitic and strong) were not significantly affected by the position in the referential chain.

3.3.3 *Joint impact of utterance genre and position in the referential chain in the narrative sequences of the two corpora*

In this section, we examine the joint effects of these factors. Interactions between factors were analyzed for the following variables:

- Corpus: toddlers vs. older children.
- Utterance genre: action descriptions, state descriptions, and labelling vs. all other genres.
- Position in the referential chain: first mention and subsequent mention vs. all other positions.

As in the Section 3.2.4, the best fit model for each referring expression was obtained by comparing models using likelihood ratio tests, fixed factors were excluded by

backwards elimination of non-significant effects. The best fit models included 3 to 6 fixed effects according to the referring expressions and one random factor (i.e., session).

Table 8 presents the results of the logistic regressions.

Table 8. Regression tables for third-person pronouns, nouns, clitic demonstrative pronouns and strong demonstrative pronouns in the narrative sequences of the toddlers and the older children

Fixed effects	Est.*	S.E.	z	P	Random effects	Var.	S.D.	C-value**
Third-person Pronouns								0.81
Intercept	−2.23	0.19	−1.18	.024	Session	0.19	0.43	
Corpus (Toddlers)***	−1.23	0.24	−5.14	< .0001				
Genre (ADes)	0.33	0.16	2.12	.0341				
Genre (SDes)	−0.88	0.17	−5.05	< .0001				
Genre (Lab)	−3.90	0.73	−5.30	< .0001				
Position (FM)	−2.19	0.23	−9.49	< .0001				
Position (SM)	0.70	0.13	5.44	< .0001				
Nouns								0.75
Intercept	−0.44	0.19	−2.33	.0197	Session	0.20	0.44	
Genre (ADes)	−0.21	0.16	−1.31	.1918				
Genre (SDes)	0.27	0.17	1.56	.1180				
Genre (Lab)	−0.35	0.30	−1.17	.2416				
Position (FM)	1.42	0.16	8.87	< .0001				
Position (SM)	−0.67	0.12	−5.44	< .0001				
Clitic Demonstrative Pronouns								0.89
Intercept	−3.25	0.35	−9.36	< .0001	Session	0.52	0.72	
Genre (ADes)	−2.70	0.58	−4.62	< .0001				
Genre (SDes)	0.72	0.35	2.06	.0039				
Genre (Lab)	3.14	0.41	7.71	< .0001				
Strong Demonstrative Pronouns								0.71
Intercept	−4.15	0.51	−8.A0	< .0001	Session	0.604	0.19	
Genre (ADes)	−0.24	0.57	−426	.06700				
Genre (SDes)	0.52	0.56	0.92	.3590				
Genre (Lab)	197	0.62	3.20	.0014				

* Est.: estimate; S.E.: standard error; Var.: variance; S.D.: standard deviationAdes: action description, SDes: state description, Lab: labelling, FM: first mention, SM: subsequent mention.Number of observations: 2220. Grouping factors: sessions: 42

** The models were assessed using C statistics, which indicate whether the predicted binomial outcome is better than chance. Hosmer, Lemeshow & Sturdivant (2013) considered that C-values below .5 indicated a model that is not better than chance whereas C-values above .7 are reasonable and above .8 are strong.

*** The category in parentheses on fixed-effects rows indicates the category value compared to the intercept (reference level). For binomial factors, the reference level is the other factor.

Table 8 shows firstly that only third-person pronouns were affected by the age difference between the two corpora. This confirms the age-related difference (Table 1) for third-person pronouns in the context of a homogenous subcorpus of narrative sequences. By contrast, the difference for strong demonstrative pronouns was not confirmed. Table 8 shows that the use of referring expressions was not necessarily determined by one factor alone, especially not the position in the referential chain. Utterance genre systematically influenced the children's uses of referring expressions and only nouns and third-person pronouns were also influenced by the position in referential chain. We will examine now how these factors interact thanks to binary partition trees (Hothorn & Zeileis, 2015).

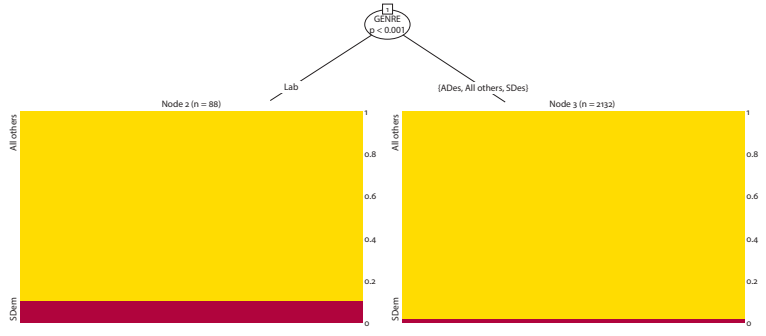

Figure 5. Binary partition tree for strong demonstrative pronouns in narrative sequences

Strong demonstrative pronouns were the most extreme case (Figure 5). Labelling was the sole relevant factor, with the children producing proportionally more strong demonstrative pronouns in labelling utterances than in other genres. Neither the children's age nor the position in the referential chain had a significant effect once this partition was taken into account.

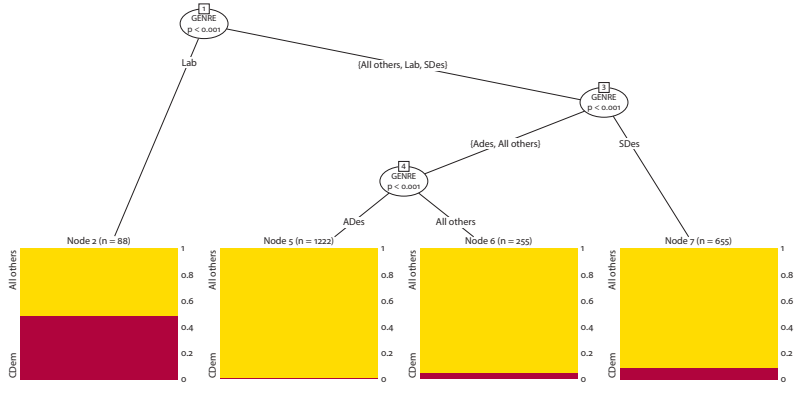

Figure 6. Binary partition tree for clitic demonstrative pronouns in narrative sequences

The case of clitic demonstrative pronouns (Figure 6) is more complex, since the three main genres turned out to have strong effects, either because there were more clitic demonstrative pronouns in certain genres (labelling, state descriptions) or because there were far fewer (action descriptions). However, as for strong demonstrative pronouns, labelling proved to be the prevailing factor.

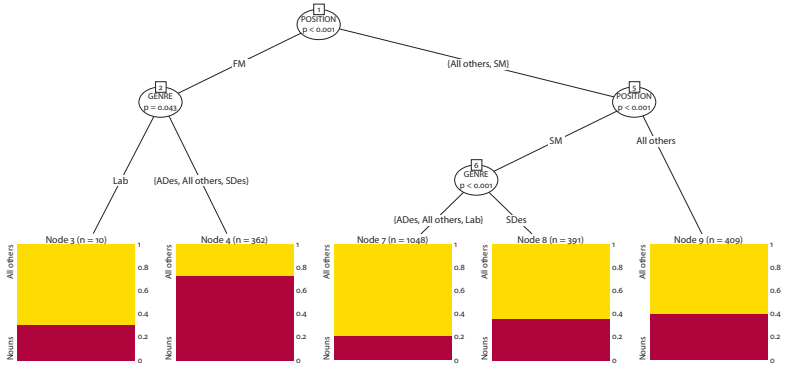

Figure 7. Binary partition tree for nouns in narrative sequences

Unlike the two types of demonstrative pronouns discussed above, the use of nouns and third-person pronouns was influenced by the position in the referential chain. Figure 7 shows that nouns tended to occur in the initial position of the chain (see also Table 8), and more often when it was not a case of labelling, which – as noted above – limits recourse to nouns for referential purposes. In contrast, for subsequent mentions of the referent, the state-description genre had an impact on the use of nouns. For the other genres (action descriptions, explanations, justifications, and arguments, and other genres), the subsequent-mention position contributed to ruling out the use of nouns.

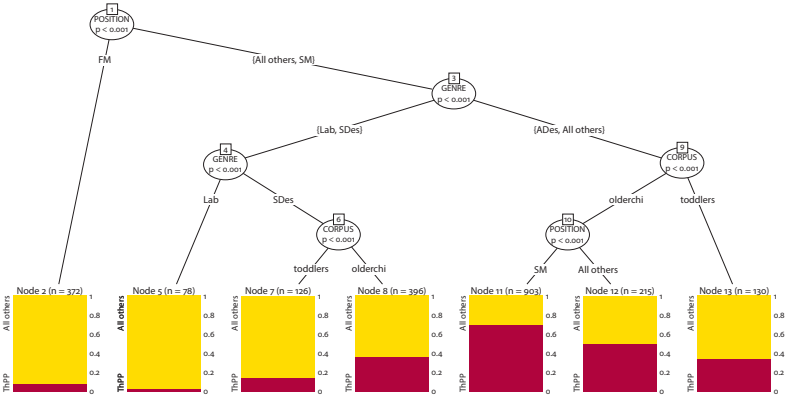

Figure 8. Binary partition tree for third-person pronouns in narrative sequences

The use of third-person pronouns (Figure 8) appears to be the result of effects that are much more complex than for the other referring expressions. In both groups of children and regardless of genre, the first-mention position was the prevailing factor (as it was for nouns), but it was an excluding factor for pronouns (contrary to what happened for nouns). For the other positions in the referential chain (subsequent mentions, reactivations, and repetitions), utterance genre determined the next partition in some cases interacting with age (corpus). Labelling appeared to be an excluding factor (for all of the remaining positions and for both groups). For state descriptions, older children used proportionally more third-person pronouns than the toddlers did. However, these proportions are lower than the ones observed for the other genres (mostly action descriptions). In this case, position did not affect the choice of a third-person pronoun, whereas for the older children the subsequent-mention position also played a role: pronouns prevailed in subsequent mentions for action descriptions but were less common in the other positions (reactivations and repetitions).

These results show that for the type of sequence studied here (narrative), the use of referring expressions depended not only on position in the referential chain but also on utterance genre. Indeed, genre was the most important factor in the use of demonstrative pronouns (strong and clitic), whereas nouns and third-person pronouns were subject to complex interactions between position and genre. The age difference showed up as more third-person pronouns for the older group.

4. Discussion and conclusion

This chapter was aimed at assessing the impact of speech genre on the use of referring expressions. Based on the idea that children enter into the world of language through language games (François, 1984; Nelson, 2007; Wittgenstein, 1953), we contend that, along with dialogical sequences (see Chapter 7, Marcos & al, 2021), the models proposed by adults (see Chapter 8, Hassan & al., 2021), and the activity being carried out (see Chapter 9, de Weck et al, 2021), speech genre constitutes one of the main aspects of how children experience their language and how they grasp the ways in which referring expressions are used by adults. Accordingly, we set forth the following two hypotheses: first, the youngest children should manifest a stronger association between the uses of referring expressions and speech genres than the older children should; second, as language develops, this association should weaken, and referring expressions, as linguistic units, should take on semantic-referential values of their own.

To test these hypotheses, we studied the association between speech genres and the uses of referring expressions in the discourse of children of two age groups.

We looked at two levels for speech genre, that of the discursive sequence, defined with respect to the referential space, and that of the utterance genre, characterized by the type of discursive pattern involved. The semantic-referential value of the referring expressions was assessed relative to their position in the referential chain. In order to avoid having to take the activity variable into account (shown to have an effect in Chapter 9, de Weck & al., 2021), we selected only those portions of dialogue containing picture-based exchanges. We chose two corpora differing as to the age of the children. After determining the distribution of referring expressions in each corpus, we conducted two studies. In the first, we looked at the productions of toddlers and assessed the respective effects of the discursive sequence, the utterance genre, and the position in the referential chain. In the second study, we focused on narrative sequences and assessed the respective effects of age group, utterance genre, and position in the referential chain.

Our results showed that although the distributions of referring expressions of the two age groups differed (notably, there were far more third-person pronouns for the older children and more strong demonstrative pronouns for the toddlers), neither MLU (for the toddlers) nor age (for the older children) had a significant impact on the diversity of the children's productions. An explanation for this diversity of usage must therefore lie in other factors, more specifically, pragmatic and discursive ones.

Among the toddlers, we noted that the level of discursive sequences did not influence the use of referring expressions whereas the utterance-genre level did so strongly. Action descriptions promoted significantly more third-person pronouns than the other genres. This tendency is consistent with what we know about narratives as sequences of events associated with one or more protagonists who are the current topic of the discourse (Labov, 1972). Nouns predominated in state descriptions, whereas clitic demonstrative pronouns were more often employed in labelling. The results for position in the referential chain also align with those of other studies (see Chapter 3, da Silva-Genest et al., 2021; Gundel & Johnson, 2013; Hughes & Allen, 2013; Salazar Orvig et al., 2010), that is, subsequent mentions involved a greater use of third-person pronouns and a lesser use of nouns. In this study, strong demonstrative pronouns appeared to be significantly promoted by first mentions.

The question raised was whether young children acquire pronouns with this proto-anaphoric value or whether their preferential uses can be explained in terms of the weight of speech genre. A partition tree pointed out the interactions between these factors. The factor that had the greatest impact on the occurrence of third-person pronouns was the speech genre, particularly action descriptions. On the other hand, the position in the referential chain appeared, among the toddlers, to be a secondary factor for certain occurrences of third-person pronouns (that is, in contexts other than action descriptions).

These findings may appear partially discrepant with those obtained by Salazar Orvig et al (2018), who reported a stronger association at these ages between third-person pronouns and utterances of the state-description type. However, the corpus in that study was larger than ours, and also included everyday exchanges and playing with objects (symbolic play and a construction game). This difference between the two studies argues in favor of the strong link between referring expressions and language games, with their two facets "genre" and "activity".

The present results have important implications. Indeed, while most studies have analyzed the use of referring expressions in terms of informativeness and/or accessibility (Allen, Hughes, & Skarabela, 2015, inter alia), it seems that what children grasp first is the way in which an utterance is framed by a language game. If the position in the referential chain is not the primary factor, then we can assume that the semantic-referential value of an expression is a side effect of how it is inserted in the chain of utterances within a given speech genre. This association between insertion in a genre or sequence, and preferential position in the chain (and thus the cognitive status associated with it), would be built gradually as the communicative experiences of the child multiply. Of course, these hypotheses must be validated by a longitudinal study.

Our second study looked at the narrative sequences in both corpora. The partition trees showed that the age variable, as defined for these two corpora, was a secondary factor when considered in relation to genre and position in the referential chain. Also, third-person pronouns were used more often in action descriptions, and nouns in state descriptions, whereas clitic and strong demonstrative pronouns were more frequent in labelling. Here again, there were more third-person pronouns in subsequent-mention positions, in line with the literature, and nouns clearly prevailed in first-mention positions. The partition trees showed, however, that these factors acted differently, depending on the type of referring expression. The labelling genre was the predominant factor for both types of demonstrative pronouns, regardless of age, whereas position was the primary factor for nouns and third-person pronouns. But position interacted in complex ways with the other two factors. For nouns, first mention took precedence over genre. For third-person pronouns, which were seldom used in first-mention positions, it was again the action description genre that best accounted for the children's uses. Age was the next most relevant factor. In short, we noted a different way of functioning in the two corpora. Among the toddlers, the action-description genre accounted for the prevalence of third-person pronouns, whereas for the older children, subsequent-mention position, once again, interacted with genre.

These findings thus suggest that in a narrative context, the different types of referring expressions do not act in exactly the same way. For both corpora, we observed two phenomena. Firstly, we see a partition between referring expressions

of the demonstrative type, which seem to be relatively indifferent to position in the referential chain, with genre overriding position. Secondly, we see a noun-pronoun opposition, a central factor in how characters are handled in a narrative, that is largely dominated by the position in the referential chain. However, the partition trees also showed that the position factor did not take effect on its own but interacted with both genre and age.

What do these findings teach us about the acquisition of the referential values and uses of referring expressions? One of the main issues addressed in the current literature (see Hickmann, Schimke, & Colonna, 2015) is how to account for the paradox between early uses of the anaphoric type by toddlers, and the difficulty experienced by 3- to 8-year-olds in introducing and maintaining characters during monologue narrations to an experimenter. Yet studies on this issue have not assessed the impact of the genre of utterances appearing in narrations or in other speech events. In other words, the consistency between everyday exchanges and experimentally induced narratives has not been investigated. Likewise, the question of what values are acquired first for referring expressions has been answered in divergent ways. In one view, taken in the initial studies, children are seen as acquiring linguistic units with a deictic or even exophoric value, before gradually acquiring their anaphoric value with cognitive development, at about age 9 (e.g., Karmiloff-Smith, 1985). In another view, children acquire linguistic units with their adult value, but cognitive or pragmatic immaturity prevents them from using these values correctly in different contexts (e.g., Schaeffer & Matthewson, 2005). The findings obtained in this chapter suggest a third possibility: children acquire the use of referring expressions in a way that is closely tied to language games, of which genre is one of the facets. In line with interactionist or socio-pragmatic approaches (Bruner, 1983; Nelson, 2007; Tomasello, 1999), we can assume that as children's communicative experiences grow and their acculturation encompasses a wider variety of language games, certain adult-like values of referring expressions are gradually constructed through a process of generalization and abstraction. In this way, the value of pronouns as markers of a referent that has already been mentioned and is the focus of the interlocutors' attention would not be the origin but the outcome of the repeated experience (in comprehension and in production) of utterances of the action-description, which usually occur in second position.

If this is the route via which children begin using referring expressions, then certain highly routinized discourses like narratives could have an earlier impact on when and how children acquire pragmatic skills. If, in storytelling, nouns and pronouns are highly influenced by the position factor while not being so in other types of activities (lotto, puzzles, etc.), it is probably also because the narrative progression structures the way in which we talk about characters, in particular

via the opposition between first mentions and subsequent mentions. The strong association found here between subsequent mentions and action descriptions in third-person-pronoun use argues in favor of this idea.

Comparison of the two studies and the two corpora suggest that our children were situated at different stages in the acquisition of the semantic-referential values of referring expressions. Among the toddlers, discourse sequences referring to the here-and-now seem to be much more diversified across dyads than narrative sequences. Accordingly, although narration probably acts as a stronger organizing principle of referring-expression use, insofar as it imposes a single choice for noun and pronoun usage in first-mention positions, the interactions are complex and differ with age. Nevertheless, even among the older children, position did not appear to be the sole factor. Genre was the primary factor for the toddler group, whereas genre and position in the referential chain interacted in a complex way for the older group. While the toddlers' production of referring expressions remained closely tied to genre, the older children seemed to be moving towards autonomization of pronoun use.

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PART 3

Conclusion

CHAPTER 11

The acquisition of referring expressions

From formal factors to communicative experience

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This last chapter undertakes a general discussion of the results presented in Chapters 2 to 10. After recalling the overall distribution of referring expressions in the data of toddlers (age 1;7 to 2;6) and older children (age 3;6 to 7;5), we review the impact of formal factors (syntactic functions, lexicon, constructions), discourse-pragmatic factors (the referent type and its status in the discourse) and socio-discursive and dialogical factors (activity, speech genre, social and interactional setting and dialogue) on the use of referring expressions. More than each factor taken separately, their interaction accounted for the children's and the adult's uses of these expressions. Moreover, both the child and adult uses were strongly determined by the socio-discursive and dialogical context. These results thus appear to offer a consistent set of arguments in favor of a dialogical account of the process whereby children acquire and use referring expressions, one that should not only consider forms and cognitive development but also the way children experience forms in various meaningful and dialogical contexts.

Keywords: referring expressions, dialogical approach, discourse-pragmatic factors, syntactic function, activity, speech genre, social and interactional settings, dialogue, nouns, pronouns,

1. Introduction

The main purpose of this book was to describe the repertoire and uses of referring expressions by French-speaking children in naturally occurring dialogues, in line with previous studies on various languages, including French (for a review see Allen, Hughes, & Skarabela, 2015). Taking an interactionist (Bronckart, 1996; Bruner, 1983; Vygotsky, 1934/1962) and dialogical perspective (Bakhtin,

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1979/1986; François, 1984, 1993), we aimed to explore the socio-discursive and dialogical factors that account for children's referential skills.

From this viewpoint,[1] language development involves an ever-growing communicative experience and social acculturation to various uses of language. In other words, the process of language acquisition has to be seen as evolving from socially-situated interactions and dialogically determined uses to the local acquisition of forms and structures. In this sense, our approach is akin to emergentist approaches (MacWhinney & O'Grady, 2015), the usage-based perspective (Lieven, 2014, 2016; Tomasello, 2003), and other interactionist and functionalist views (Budwig, 1995; Clark, 2015; Nelson, 2007, inter alia). This theoretical stance involves a multidimensional approach that is able to take into account the interaction between the formal (and statistical) aspects of the acquisition of grammatical morphemes, the referential dimension (in other words, the discourse-pragmatic dimension), and the socio-discursive, interactional and dialogical dimensions.

This chapter brings together the results of the studies reported in the book. Building on these results and the discussions in Chapters 2 to 10, it is designed to be read as the unfolding of an argument in favor of a proposal that takes into account the way children experience forms and constructions in meaningful contexts. After summarizing the results on the overall distribution of referring expressions (Section 2), we discuss the impact of the various factors studied and their interactions. We then address the ways in which formal and discourse-pragmatic factors (Section 3), and communicative experience (Section 4) affect the use of referring expressions.

2. Overall distribution of referring expressions

The various studies reported in this book concerned two groups of children, toddlers (ages 1;7 to 2;6 years) and "older children" (pre-school and school aged children, ages 3;6 to 7;5 years), including typically developing children (TD) and children with developmental language disorders (DLD) and adults in various settings. Bearing in mind that we focused on periods of grammatical emergence and development, one of the most relevant issues was children's gradual mastery of pronouns (and determiners, although less so), including whether, and to what extent, it is possible to count fillers as referring expressions. The present section draws a panoramic picture of the use of referring expressions, by toddlers and

1. For a presentation of this theoretical framework, see Chapter 1, Salazar Orvig, de Weck, Hassan, & Rialland (2021).

older children as compared to adults when referring to entities (Lyons, 1977) and to discourse participants (Benveniste, 1966).[2] We focus on the use of nouns, personal pronouns, demonstrative pronouns, dislocation, null forms and fillers.

Nouns, which are the earliest referring expressions used, seem to evolve in a complex way. While nouns were the predominant category for the toddlers,[3] they were negatively correlated with MLU. The opposite trend was observed in the older children[4] (both for TD and DLD children): the proportion of nouns increased with age. While the toddlers' use can be easily explained by the increase in pronouns, the opposite trend for older children is intriguing. We will come back to this characteristic in Section 4. When compared to adult uses,[5] those of toddlers showed no significant differences, whereas older children tended to exhibit a higher proportion of nouns than their mothers.

The uses of *personal pronouns* differed across the age groups. Toddlers' proportions of clitic and strong pronouns (when referring to entities or participants) rose with MLU. Older children produced three times as many pronouns for entities than toddlers, but there was little variation due to age (from age 4 to 7). As expected (Salazar Orvig & de Weck, 2013), children with DLD used fewer and a narrower range of pronouns, but they used more than toddlers did. The results for the adults also painted a complex picture. Adults used more pronouns than the children with whom they were interacting. But for toddlers, the adults' proportion of pronouns did not vary with the children's MLU. Moreover, this proportion was substantially lower than that of mothers interacting with older children.

Concerning *demonstrative pronouns*, we observed a clear difference between toddlers and older children, with the former using more demonstrative pronouns, both strong and clitic, than the latter. But there was no difference between TDs and DLDs. Adult use of demonstrative pronouns did not differ from that of the children.

Dislocations[6] combine a strong form (a noun or a demonstrative or personal pronoun) and a resumptive pronoun (a clitic personal or demonstrative pronoun).

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2. Recall that only referential uses were considered in this book. Non-referential uses, such as naming, attributive uses of nouns, and expletive pronouns, were excluded from the analysis.

3. See Chapters 3 (da Silva-Genest, Marcos, Salazar Orvig, Caët, & Heurdier, 2021) and 7 (Marcos, Salazar Orvig, de Silva-Genest, & Heurdier, 2021).

4. See Chapters 4 (Rezzonico, Vinel, de Weck, Hassan, & Salagnac, 2021) and 5 (Rezzonico, Bernasconi, de Weck, da Silva-Genest, & Jullien, 2021).

5. See Chapters 7 and 8 (Hassan, de Weck, Rezzonico, Salazar Orvig, & Vinel, 2021).

6. See Chapter 6 (Klein, Jullien, & Fox, 2021) for toddlers, Chapters 4 and 5 for older children, and 6 and 8 for adults.

They correspond both to a productive syntactic construction (the same lexical or grammatical forms are used by themselves or in dislocations) and to a paradigmatic choice, in contrast with the other, simple referring expressions (De Cat, 2007; Klein, 2019). They are typical of both oral French and child language. The results for the toddlers showed that they used slightly more dislocations than did the adults, and also more than the older children did. Among the latter, we observed little variability due to age or linguistic development. On the contrary, the adults addressing older children presented more dislocations than the children did.

Because French is a non null-subject language, the issue of *null forms*[7] in children's discourse is critical to the development of pronominal paradigms, and more specifically to personal pronouns in the subject or object function (see Section 3). The toddlers produced at least three to four times as many null forms as the older children. The older children exhibited a strong decrease in null forms between the ages of 4 and 7 years, while the children with DLD had a higher proportion of null forms than did the TD children. However, there was considerable variability in each group, with some children producing few or no null forms, and others, many null forms. Mothers of TD children as well as mothers of children with DLD produced few null forms, which were mostly prompts.

Fillers have often been virtually disregarded in studies on referring expressions. One of the goals of our research program was to identify and assess the importance of this transitional phenomenon in the paradigm of referring expressions. In order to grasp the gradual construction of morphological paradigms, fillers[8] were investigated in the prenominal and preverbal positions alike. The use of fillers proved to be a pervasive phenomenon, reaching a third of the prenominal position and almost a fourth of the preverbal position. In addition, the proportion of filler syllables was higher in the prenominal position (and the determiner-omission rate in front of nouns was lower) than in the preverbal position. This suggests emergent differentiation between the prenominal and preverbal positions. Also, the form of filler syllables, and in particular the realization of the consonants in them follows specific patterns. Indeed, a comparison of consonant realization in filler syllables and in lexical words, pointed out differences in terms of age of

7. In most of the chapters, null forms corresponded to subject or object omissions, and to non-verbalized referents. See Chapter 2 (Yamaguchi, Salazar Orvig, Le Mené, Caët, & Rialland, 2021) and Chapter 3 for toddlers, Chapter 4 for older TD children, Chapter 5 for DLD children, and Chapter 8 for adults. For adults, prompts and zero anaphora were also included.

8. Only Chapter 2 investigated both positions. Chapter 3 dealt only with the preverbal position.

emergence and phonological nature. The transitional status of fillers showed up in the underspecified phonological nature of filler consonants and vowels.

Furthermore, the corpus analysis showed that the use of fillers did not vary significantly with MLU. For all toddlers, fillers alternated with both null forms and adult-like forms. More specifically, we can consider our group of toddlers to be in the midst of the transition from a proto-morphological stage to a morphological stage.

3. The interaction of formal and discourse-pragmatic factors

So far, we have showed that the distribution of the various referring expressions was unevenly affected by age and linguistic development. However, this overall picture does not reflect the impact of any other factors. Let us now examine the way in which the use of referring expressions was impacted by formal (Section 3.1) and discourse-pragmatic factors (Section 3.2), considered separately; Section 3.3 addresses their interaction.

3.1 Formal factors

The impact of three kinds of formal factors was investigated in this book: syntactic function (mainly the subject function), verb frames, and distributional features. In the toddler corpus (see Chapters 2 and 3), clitic pronouns occurred almost exclusively in the subject function but they were not the most prevalent form in this position. We also found null forms and fillers. Because in French, the presence of an overt subject[9] is mandatory, null forms in the subject position are considered, together with fillers, as corresponding to a transitional step in the acquisition of both the subject function and pronouns. Consistent with their linguistic-development stage, the toddlers used few object clitic pronouns. Nouns, strong demonstrative pronouns and strong personal pronouns occurred more often in complement functions and in verbless utterances. However, not all strong forms were absent from the subject position: the children used dislocations preferentially in the subject function (see Chapter 6).

We saw in Section 2 that typically developing older children (see Chapters 4 and 5) produced a higher proportion of third-person pronouns than toddlers and children with DLD. These pronouns accounted for the great majority of subjects.

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9. Clitic pronouns are considered here as an overt expression of the subject. The debate on their status as either inflectional morphemes (Culbertson & Legendre, 2008) or true arguments (De Cat, 2005) was not addressed in this book.

However, this association could also be age-related, with older children over 87 months presenting fewer pronouns in the subject function. This result suggests a U-shaped curve, with older children integrating the use of other referring expressions in the subject position. Moreover, nouns tended to be used more often for other functions, mostly as objects. Null forms were few in number and were mostly used in functions other than subject or object. But children with DLD, who produced fewer pronouns, used significantly more null subjects than TD children did.

The above considerations regarding syntactic factors could imply that children possess abstract adult-like syntactic categories of subjects or objects. Yet, as usage-based approaches contend, this is far from being certain, particularly for toddlers (see Pine & Lieven, 1997, inter alia). It is highly likely that toddlers, who are in the midst of the syntactic development, build their utterances from recurrent constructions or frames rather than from fully productive syntactic combinations. Although this issue was beyond the scope of our research project, we obtained some partial indications about the weight of the recurrent association between referring expressions and frequent verbs and/or pre-built constructions.

Firstly, forms in preverbal position proved to be non-lexically specific. In fact, fluctuation among forms for the same lemma was as frequent as having the same type of prelexical form. Moreover, fillers were very often involved in these cases. The use of fillers thus exhibited some degree of productivity. Fluctuation had a mild, negative correlation with the frequency of adult forms and thus, with linguistic development. Secondly, the impact of constructions on the use of referring expressions in the complement position was investigated (see Chapter 6) for the three most frequent verb frames (*Mettre+X, 'put+X'; C'est+X*, '*it's+X*' and *Vouloir+X, 'Want+X')* for both adults and children. Not all categories were equally distributed along the three frames: whereas common nouns appeared in strong proportions in the three frames, strong personal pronouns were only used in *C'est+X*. The children employed a reduced subset of categories with *Mettre+X* and *Vouloir+X*. These two frames increased the proportion of nouns in the children's utterances, whereas nouns were less often used in *C'est+X*.

3.2 Discourse-pragmatic factors

The choice of referring expressions depends on various discourse-pragmatic factors, including the type of referent and its status in discourse. The distinction was made between reference to entities (mainly first-order entities, Lyons, 1977) and reference to discourse participants (first and second person, Benveniste, 1966). The latter, for instance, are always highly accessible in dialogue (Ariel, 1988), whereas the former cover the entire range from non-accessible to highly accessible referents. In reference to entities, accessibility results from the interaction of

various factors such as joint attention, previous mention in the discourse, presence in the situation, shared knowledge, and absence of contrast (Allen et al., 2015; Allen, Skarabela, & Hughes, 2008). In narrative discourse, referent's characteristics (animacy and primacy) also affect the use of referring expressions.

3.2.1 The influence of the referent's characteristics on the use of referring expressions

For toddlers, we expected reference to entities and reference to discourse participants to paint two different pictures (see Chapters 2 and 3). When considering only the preverbal position, clitic pronouns appeared to be used more often to encode entities than to encode participants. For referring to a participant, personal pronouns were used more often for the addressee (*tu*, '*you*') or to refer jointly to the addressee and the self (*on, 'we')* than to the self alone. Null forms and fillers were more frequent when the children referred to themselves than when they referred to an entity. This sensitivity to the type of referent was found even when the data was narrowed down to verbs used with both types of referents. These results confirm that the development of the pronoun paradigm is strongly impacted by referential features (Budwig, 1995; Caët, 2012; Salazar Orvig & Morgenstern, 2015).

The influence of two other features of referents, animacy and primacy, was explored (see Chapter 4) as part of the study of narrative discourse in older children. Overall, the main character was preferentially encoded with third-person pronouns, whereas secondary inanimate referents were mostly referred to using nouns. Secondary animate characters were encoded with both pronouns and nouns, in the same proportions. The main trends in these contrasts are partly consistent with the results presented in previous studies (for a review, see Hickmann, Schimke, & Colonna, 2015). This issue was not addressed for adult discourse. However, de Weck, Salazar Orvig, Rezzonico, Bernasconi, & Vinel (2019) showed, in the same corpus, that mothers telling a story with their children produced more dislocations for both the main character and secondary inanimate referents, and fewer nouns and more personal pronouns for secondary animate characters than their children did.

3.2.2 The impact of the referent's status in the discourse

One of the main pragmatic factors affecting the paradigmatic choice of referring expressions is known to be the status of the referent in the discourse (Ariel, 1988; Givon, 1995; Gundel, Hedberg & Zacharski, 1993; Halliday & Hasan, 1976). This issue was examined here from a cognitive perspective (see Chapters 3 and 7) (attentional and discursive status of the referent) and from a textual perspective (see Chapters 4, 5, 8, 9, de Weck, Hassan, Heurdier, Klein & Salagnac, 2021, and 10, Vinel, Salazar Orvig, de Weck, Nashawati, & Rahmati, 2021) (position in the

referential chain), particularly in narratives. Despite their differences,[10] the results of the first type of analysis are comparable to the second. For instance, the proportion of referents considered to be new or activated, but not yet mentioned, in the cognitive analysis was comparable to the proportion of referents considered as first mentions in the textual analysis; subsequent mentions could be interpreted as discourse-given.

Personal pronouns were used significantly less often, if at all, for *first mentions*, both in the toddlers' and the older children's discourse. The older children exhibited a higher proportion of nouns than did the toddlers in these cases. Among the older children, age interacted with first mentions to entail a higher proportion of nouns. This is consistent with studies showing that older children tend to come closer to canonical adult performance (Hickmann, 2003). However, the results for the adults suggest a more complex picture. When adults were talking with the toddlers, their discourse did not differ from their children's (see Chapter 7) whether in the proportion of nouns or in the use of personal pronouns for new referents. Moreover, mothers and teachers interacting with older children (see Chapter 8) had lower proportions of nouns and higher proportions of personal pronouns among their first mentions than their children did (see Chapters 4 and 5). We will return to this surprising result below in Section 4.3.

Furthermore, a prosodic analysis conducted on a subset of the toddler corpus (see Chapter 6), confirmed that adults tended to mark the first mention of a referent via intonation (a movement contour), in contrast to subsequent mentions (a plateau contour). Although the children's distribution on intonational movements did not yield significant results, there was no statistical difference between adults and children, whether for first or subsequent mentions.

Let us now turn to *given referents* (or *subsequent mentions*). The various chapters converge to show that given referents are conducive to the use of weak forms such as personal pronouns. For the older children, personal pronouns prevailed, but the children with DLD exhibited proportionally fewer personal pronouns than TD children. For the toddlers, personal pronouns alternated with null forms and fillers. This last result suggests thus that the acquisition of personal pronouns is grounded in the experience of using these earlier forms in high continuity contexts.

But strong forms, like nouns and strong demonstrative pronouns as well as dislocations were also observed in this context. Dislocations (see Chapter 6) were

10. One of the main differences between these two analyses concerns first mentions of a referent in narratives. Given that the participants are looking together at a picture book, all referents are under the attention of both interlocutor, there cannot be any brand-new referents. But at the same time, the narrative genre "requires" the first mention of a mutually known referent, as if it were brand new.

more strongly associated with previously mentioned referents than with nouns or demonstrative pronouns. This result is consistent with De Cat (2007), who found that children used them to mark the topic of the utterance. However, their frequency in subsequent mentions here was not higher than the frequency of all subsequent mentions in the corpus. This suggests that they do not play a specific role among subsequent mentions in short-term continuity, and therefore, meet other interactional or discursive needs (see Section 4).

As a whole, these findings are consistent with studies on various languages (for a review, see Allen et al., 2015) showing that children tend to use weak forms to refer to highly accessible referents and strong forms for less accessible ones. This can be explained in terms of early pragmatic skills, but, as we have seen above, it can also stem from other factors, such as syntactic constraints (Section 3.1) and the referent's characteristics (Section 3.2.1). Let us turn now to the interaction between these formal and referential factors.

3.3 How do formal and discourse-pragmatic factors interact?

According to a functionalist approach, formal and discourse-pragmatic factors are intertwined in adult's and children's uses of referring expressions. More specifically, the subject function is devoted to the expression of topic, agency, and given referents (Chafe, 1976; Hickmann et al., 2015; Lambrecht, 1994; inter alia), which favor weak forms. Moreover, according to Du Bois's Preferred Argument Structure (Du Bois, 2003), speakers tend to avoid producing more than one lexical form per clause (either in the subject for intransitive clauses, or in the object for transitive ones) and more than one new referent per clause. This means that grammatical subjects, and more specifically subjects of transitive clauses, are preferentially encoded by null or weak pronominal expressions. Clancy (1993, 2003) and Allen (Allen, 1998, 2000; Allen & Schröder, 2003) first pointed out the impact of this pattern for young children.

Our findings (see Chapters 2 to 6) confirmed this intertwining between syntactic function and discourse-pragmatic features. For the toddlers, the probability of using a strong form was higher when the referent occupied a non-subject function and was mentioned for the first time, either as brand new for nouns or activated for demonstrative pronouns. This was also the case when the expression occupied a non-subject function and referred to a participant, the addressee, or the self for strong personal pronouns. Reciprocally, the probability of finding a weak form was higher in the subject position and for given referents (or reference to participants). For the older TD children, syntactic function interacted with the referent's status and position in the referential chain. The probability of using nouns was higher when the expression had the object function, provided it was not the main character, whereas for third-person pronouns, only the characteristic of the referent (main character) and its position in the referential chain proved to be relevant.

The interaction of discourse-pragmatic features with non-subject functions was also explored in the context of frequent *verb frames* in the toddlers' data. The impact of verb frame raises the crucial issue of finding out whether the "choice" of a referring expression is determined either by formal factors and frequency or by discourse-pragmatic ones. The results yielded a complex picture. In the children's discourse, nouns were preferred for first mentions in two of the frames (*Mettre+X; C'est+X*), but not for the third (*Vouloir+X*) which was more often linked to subsequent mentions. A qualitative analysis suggested that the strong association between nouns and subsequent mentions in *Vouloir+X* could also be accounted for in terms of interactional factors (see Section 4). Concerning clitic personal pronouns, the prevalence of subsequent mentions was confirmed for adults both in the overall non-subject functions and in the two frames in which they occurred (*Mettre+X* and *Vouloir+X*).

So far, we have seen that children exhibit referential strategies which overall are similar to those of the adults speaking with them.[11] However, one of the lingering questions in the literature is whether these uses reveal an actual discourse-pragmatic skill. When "choosing" a referring expression, to what extent do children attend to shared knowledge and to the referent's accessibility to the interlocutors? Experimental studies have shown that when confronted with complex contexts, young children fail to take into consideration these aspects, particularly the interlocutor's perspective (Kail & Hickmann, 1992; Matthews, Lieven, Theakston, & Tomasello, 2006, inter alia). Several cognitive accounts such as the immature development of a theory of mind or executive functions (De Cat, 2015; Gundel & Johnson, 2013; Serratrice & De Cat, 2019) have been proposed to explain these partial skills. Moreover, these difficulties would not be visible in naturally occurring situations for various reasons, for instance adult scaffolding and children's conformity with adult models. According to Hickmann, Schimke, and Colonna (2015), early uses do not reveal the actual competence of children:

> (…) With respect to reference maintenance, although they associate light forms with highly accessible entities, they do so at first in rigid strategies reflecting general discourse principles whereby particular types of entities (animate, main), roles (agency, subjecthood), and discourse contexts (same-subject coreference) coalesce to favour the selection of light forms. In other contexts, however, only older children are able to mark distinct types of reference maintenance: referent reintroductions (in non-coreferential contexts), as well as other types of topic shifts (in coreferential contexts), patient topicalization, and (in some languages) topic promotion. (Hickmann et al., 2015: 201)

11. See Chapters 6 and 7 for direct comparisons, and Chapter 8 for a study on adults talking with children.

Indeed, the strong association of forms, syntactic functions, and discourse-pragmatic features was confirmed by statistical analyses in our studies. However, mixed-model analyses and binary partition trees showed that the syntactic factor could not alone account for the "choice" of referring expressions. It always combined with the discourse-pragmatic factors without overriding them. Indeed, among the toddlers the former was secondary with respect to the latter, insofar as the set of personal pronouns among toddlers was almost exclusively made up of the subject pronouns, *il, elle*, and *on* (*'he', 'she', 'we'*). But, for the older children, who possess a wider range of personal pronouns (object and dative functions), the subject function did not appear for the main character and this referential feature interacted only with the position in the referential chain; for the other referents, the subject function was a second-level factor, subordinate to the referent's characteristics (which was the main factor), and the position in the referential chain was at a lower level. For children with DLD, the syntactic function was subordinate to the position in the referential chain. These statistical analyses therefore showed that even if the subject function was a relevant factor, it could not, alone, account for the choice of weak forms for previously mentioned referents. These results are consistent with a functional approach to language, in which the convergence of the subject function and accessibility stems from the pragmatic foundation of the argument structure (Ariel, 2008; Du Bois, 2003). But as we have seen, some observations point to the opposite associations, that is strong forms for subsequent mentions and/or in the subject position. Other functional aspects might play also an important role in the use of referring expressions.

4. Communicative experience and dialogue

According to a dialogical approach (Bakhtin, 1975/1982, 1979/1986; Vološinov, 1929/1986), but also, in a complementary perspective, based on the notion of language games (Wittgenstein, 1953, adopted by Nelson, 2007, and Tomasello, 1999), linguistic forms are not the starting point but the ending point of a process that goes top down from social interactions and speech genres, and defines the use and choice of units and structures. The main goal of the second part of the book (Chapters 7 to 10) was to understand the uses of referring expressions in terms of their anchoring in meaningful, culturally, and socially-determined contexts. It deals with various facets of the children's communicative experience[12] and the

12. As presented in Chapter 1, the notion of communicative experience is not considered here only in terms of children's exposure to preferred forms (constructions, frames) in the input. The main point here is that children grasp and take up these forms in the context of

way in which it impacts the acquisition and use of referring expressions. We will begin by discussing how discursive contexts affect the use of referring expressions, by considering two, tightly-embedded levels: (a) the activity,[13] which is determined by its goals, and in turn determines structured actions and discourse forms (Bronckart, 1996; Levinson, 1979) (Section 4.1), and (b) speech genre[14] (Bakhtin, 1979/1986), which determines the preferred forms of utterances (Section 4.2). We will then discuss the role of interactional, social, and dialogic factors. Firstly, the social (institutional or familiar) and interactional settings (Sections 4.3 and 4.4, respectively) involve different roles and social actions for the participants, which in turn shape the accomplishment of activities and speech genres. Secondly, dialogue is the arena where children meet adult discourse: while taking part in the co-construction of a joint discourse, they experience the recurrent forms of their language and the models that adults are offering them (Section 4.5).

4.1 Activities and use of referring expressions

Few studies specifically address the impact of the activity on the use of referring expressions (but see de Weck & Rosat, 2003; Salazar Orvig, Marcos, Heurdier, & da Silva-Genest, 2018).[15] Most studies have used a single activity, either narratives or an experimental task, and they have seldom considered comparing them as a relevant independent variable. Instead, they have focused on the conditions for carrying out the activity (Kail & Hickmann, 1992; Kern & Raffara, 2012; de Weck & Jullien, 2013), such as the structure of the targeted narrative or the type of interlocutor. The studies on naturally occurring dialogues, mostly with toddlers, were usually conducted on a single activity. When the family dialogues included various activities, the activity was not considered as a relevant factor either.

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meaningful, recurrent situations (such as formats, Bruner, 1983). Those uses (as well as adults' productions) must therefore be regarded as part of the cultural and social contexts in which their frequency of occurrence is related to the actions participants accomplish and the way in which they interact.

13. For a discussion on the notion of activity see Chapter 9.

14. As discussed in Chapter 10, the literature presents a wide range of definition of "speech genre", which can refer to registers, types of texts and interactions, or patterns of discourse. We adopted the Bakhtinian definition in this book.

15. See Chapter 9 for a more general review of the impact of the activity on verbal productions.

The studies presented in this book covered various activities. The toddler data reflect the variety of activities they experience in everyday life,[16] ranging from daily routines to different ways of playing with toys and activities based on pictorial material. These activities have a number of common features: they are all mainly embedded in the here-and-now of the current interactions (with the exception of some occasional storytelling and conversations about past or future events), and they can be contrasted in term of their goals, the extent to which they involve object manipulation, and their main speech genres (see below Section 4.2). By contrast, the data for the older children (see Chapters 4, 5, 8, 9 and 10) correspond mainly to a joint storytelling activity. This activity involved a complex interaction between the here-and-now of handling the book, the gradual discovery of the book and the story, and the construction of an imaginary world. The storytelling activity was compared, for each dyad, to a symbolic play activity (see Chapter 9). The latter could combine the handling of miniature figures and objects, which entails a here-and-now discourse and the construction of an imaginary world, as in narratives.

The results for the toddlers showed that the activity affected the relative proportions of the different types of referring expressions. For instance, the proportion of nouns and null forms was greater in daily routines, and the proportion of strong demonstratives was greater in picture-based activities and when playing with toys. Third-person pronouns tended to be less frequent in daily routines than in the other two types of activities, and dislocations were used less when the children were playing with toys. These results can be related to the main actions that compose these activities. Picture-based activities such as lotto or puzzles, for example, involve a great amount of labelling utterances where a deictic demonstrative pronoun (the clitic in *c'est, 'it is'* or a strong demonstrative like *ça, 'that, this'*) refers to the labelled entity. Among the dislocations, the proportion of demonstrative dislocations (*ça c'est, 'that it is'*) was also greater in this activity. Children used these demonstrative forms to bring new entities to the attention of their interlocutor. This use appeared as an opposite move to the use of null forms, which implied an achieved state of joint attention and which were in fact less frequent in picture-based activities. Daily routines triggered the greatest proportion of nouns for first mentions and the lowest proportion of third-person pronouns in subsequent mentions. This could correspond to the fact that, in situations such as snacking, various objects can be mentioned without being taken up in the referential chain.

For the older children also, the impact of the activity showed up for the main referring expressions. Two contrasted distributions were observed. In joint

16. For details on the activities see Appendix I "Corpora" and Chapters 2, 3, 6, 7, 9, and 10.

storytelling, the children used many more third-person pronouns than in symbolic play, although nouns were still the second most frequent type of referring expression. In symbolic play, the children tended to use more nouns, more dislocations, and more demonstrative pronouns. Moreover, these diverging proportions interacted with the referent's position in the referential chain. In storytelling, for instance, nouns were the prevailing category among first mentions, whereas this was not the case in symbolic play, where more demonstrative pronouns were used. Thus, for first mentions, we observed more demonstrative pronouns in symbolic play than in storytelling. Nouns in storytelling introduced characters that were to be described, whereas demonstrative pronouns in symbolic play drew attention to new referents without naming them (in the same way as toddlers did in similar activities). The activity also had an influence on the use of referring expressions in subsequent mentions. In joint storytelling, the distribution was more canonical, with third-person pronouns accounting for the majority of occurrences, whereas in symbolic play the proportion of nouns was higher than the proportion of third-person pronouns. Demonstrative pronouns and dislocations in symbolic play were associated with object manipulation, labelling, and contrastive utterances (e.g., opposition, topic change, reiteration). A mixed-model analysis and a binary partition tree confirmed that the activity, the position in the referential chain, and age significantly affected the use of nouns: position was the main factor, and it interacted with activity for both first and subsequent mentions. Age was only relevant for first mentions in storytelling, with older children using nouns proportionally more often.

Let us now return to the substantial difference between toddlers and older children in noun uses observed in Section 2. This difference could be explained initially in terms of linguistic development. But the results of the comparisons across activities suggest that it could be related to the impact of the activity in which the children were involved. The toddlers used substantially more nouns than the older children did. But the older children tended to use fewer nouns in symbolic play than in storytelling. For the toddlers, the symbolic play involved playing with toys, where nouns were less frequent than in the other activities. Moreover, when storytelling was analyzed for these two age groups (see Chapter 10), age did not have an effect on noun use. The proportion of nouns, then, seems to be mainly determined by the activity.

Variations in the use of third-person pronouns can be accounted for in similar terms. Indeed, there seems to be an interaction between age and/or linguistic skills (the toddlers used substantially fewer personal pronouns than the older children did) and the activity. We observed significant activity-related variations in third-person pronoun use, for both toddlers and older children (see Chapter 9). More specifically, in daily routines toddlers used significantly fewer third-person

pronouns than in picture-based activities and in playing with toys. For the older children, storytelling entailed a significant higher use of these pronouns than symbolic play did. However, within the same storytelling activity, age was a determinant factor of the use of third-person clitic pronouns.

What about the adults? In Section 2, we noted that adults interacting with toddlers used about the same proportion of nouns as their children, and a significantly higher proportion of pronouns than their children, but this proportion did not vary with the children's linguistic development (see Chapter 7). On the other side, mothers interacting with older children produced fewer nouns and more pronouns than their children did (see Chapters 4, 5 and 8). Again, what might account for this apparent inconsistency is what participants were actually doing, the activity being carried out. Indeed, as we saw above, the toddler discourse was mostly embedded in the here-and-now of the current interaction, whereas the older children's discourse mainly corresponded to the construction of an imaginary world.

4.2 The impact of speech genre

Speech genre was considered at two complementary levels: the level of the discursive sequence (in this book, narration and here-and-now discourse) and the level of the utterance genre (in this book, state and action descriptions, labelling, explanations and arguments, and negotiation). Given that the speech genre was in turn determined by the activity in which it was embedded, the analyses (see Chapter 10) were conducted only on picture-based activities (games and storytelling). One study compared the way in which discursive sequence and utterance genre affected the toddlers' use of referring expressions; a subsequent study considered only narrative sequences but compared the toddlers' data to the older children's ones. The results of both studies shed a complementary light on previous results.

The proportions of the different referring expressions were consistently influenced by speech genre. When considering, for toddlers, two kinds of discursive sequences, we saw that the effect of the discursive sequence was overridden by that of the utterance genre. Mixed-model analyses and binary partition trees indicated a consistent interaction between speech genre and position in the referential chain. For instance, utterance genre was the main factor determining the use of both third-person pronouns (more frequent in action descriptions) and nouns (more prevalent in state descriptions). Older children and toddlers were compared for narrative sequences only, which reduced potential variability. This brought out more complex interactions. Strong demonstrative pronouns were solely determined by utterance genre (labelling), thus confirming the association that was qualitatively observed in the study on the impact of the activity. Nouns

and third-person pronouns were influenced by the interaction of the genre and the position in the referential chain. For instance, whereas third-person pronouns were excluded from the first mention position, when it came to the other positions, the proportion strongly depended on the utterance genre, with action descriptions being a determinant factor in narratives. In short, the proportion of third-person and demonstrative pronouns did not depend solely on age or linguistic development. Moreover, when we considered only narrative sequences, age did not impact the choice of demonstrative pronouns. In contrast, they were largely sensitive to speech genre and were very frequently used in labelling utterances.

In conclusion of Sections 4.1 and 4.2, our exploration of the impact of activity and genre suggested that culturally shared situational and discursive patterns that determine what speakers do when interacting with others mediated how children apprehend and use referring expressions. Moreover, the "choice" of an expression to encode a referent is determined not only by its accessibility but also by the moves speakers accomplish in meaningful situations. An interesting case in point on this issue is narration, insofar as it revealed preferences for certain referring expressions that were seldom used in other situational contexts.

4.3 The influence of social setting

The social context is known to influence the way participants interact and communicate: it determines the roles of participants, their perspectives, and the purposes for which interlocutors are addressed. In turn, these parameters, which characterize the context, determine the uses and acquisition of forms and structures (Ervin-Tripp, 1994; Ochs & Schieffelin, 1995). In this section, we look more specifically at how social variables affect the ways in which a given activity, such as storytelling or symbolic play, is carried out. An adult's discursive productions and how children will grasp them may vary with the place where the activity is performed, here, either at home or at school.

The comparison of joint storytelling at home and at school (see Chapters 8 and 9) showed that the overall distribution of referring expressions and the proportions of nouns and pronouns at the main positions in the referential chain varied according to the social setting, for both adults and children. Teachers produced more nouns, and fewer personal and demonstrative pronouns than did the mothers. More specifically, the teachers used more nouns and fewer pronouns for subsequent mentions. In addition, even though both groups used interrogative pronouns to introduce or reintroduce referents, this behavior was more frequent in the teachers' discourse: they used fewer demonstrative pronouns and more interrogative ones to elicit the categorization of a referent by the children. Similar differences were found for the children: in the school context, they produced more

nouns and fewer third-person pronouns, demonstrative pronouns, and null forms than at home. Nouns were also the preferred device for reactivations in school (but not at home). The youngest children in the school study also often used nouns for subsequent mentions, especially when their contribution involved a change of perspective.

These findings provide some insight into the way children build their referential strategies. We have seen that their experience with various activities provides them with diversified uses of referring expressions. In the same vein, it appears that in their socialization process, children experience various social contexts which differently shape their activities and therefore their uses of referring expressions. Through participation in these new contexts, they take up these new uses and therefore expand their referential skills. This process could also offer us some cues, beyond cognitive development, for understanding the overall differences between the younger and older children observed in Section 3, since, all other things remaining equal, children attending school may have incorporated a higher proportion of nouns in their storytelling activities. More specifically these findings suggest a possible route children might take in adopting a more canonical, adult-like use of referring expressions in narratives, in addition to relying on their mothers' dialogical models, addressed below.

4.4 The influence of the interactional setting: Towards reconsidering models

The "choice" of referring expressions does not depend only on accessibility or shared knowledge but also on the interactional context of discourse production, and more specifically, depends on for whom and with whom the activity is being accomplished. Based on this assumption, variations in the adults' uses were examined according to the interactional setting of the storytelling (see Chapter 8). Two comparisons were made. The first was the difference for participants (women) between telling a story to (and with) their child and telling the story to an experimenter (de Weck et al., 2019); the second was the difference between telling the story to (and with) a typically developing child and telling it to (and with) a child with DLD. The participants' discourse revealed contrasting referential strategies: whereas the adults telling the story to the experimenter used referring expressions in a canonical way, the mothers presented a varied, and sometimes unexpected, range of referring expressions. For instance, mothers interacting with their child used fewer nouns and some third-person pronouns when mentioning a referent for the first time (or reactivating it). They also used more dislocations and interrogative pronouns. In the second comparison, there was no significant difference between the referential strategies of the mothers of the two groups of children (TD and DLD), thus providing some evidence of the general character of the strategies

pointed out by de Weck et al. (2019). Besides, the mothers of children with DLD used more dislocations than the mothers of TD children, and therefore seem to tune their discourse to their children's comprehension level. These two comparisons showed that mothers exhibit referential strategies that were probably linked to the interactional conditions of storytelling, e.g., the need to enlist their children in the task and to use scaffolding devices, such as dislocations, to highlight some aspects of the characters or their actions for the child.

These results are crucial because they put in perspective expectations regarding child development and prompt us to reconsider children's early uses. The mothers' referential strategies found here do not correspond to the more canonical referential models children will be exposed to throughout the socialization process. Thus, we can reasonably contend that children's first targets tend to be closer to maternal strategies than to the adult canonical model (Karmiloff-Smith, 1985; Hickmann, 2003).

4.5 Reference in the dynamics of dialogue

This section focuses on how the dynamics of dialogue can also account for early referential skills in naturally occurring interactions. We only deal here with the toddler data, but observations made in the two previous sections suggest that similar processes can still be hypothesized in older children's development.

In line with the findings of other studies (Guerriero, Oshima-Takane, & Kuriyama, 2006; Huang, 2011; Hughes & Allen, 2013, inter alia), children's uses of referring expressions in toddlers' data (see Chapter 7) were similar to those of their interlocutors. Three possible accounts for this similarity were considered. Firstly, the immediate impact of the interlocutor's discourse was assessed through two types of relation. On the one side, the possibility of imitation of, and priming by, the interlocutor's discourse was explored: did the child preferentially take up the form or category of the antecedent in the interlocutor's speech? The results showed, in line with Salazar Orvig, Marcos, Morgenstern, Hassan, Leber-Marin, & Parès (2010), that referring expressions were not significantly affected by the forms in the interlocutor's speech. However, nouns and third-person pronouns were likely to be preceded by an antecedent of the same category (e.g., for the object pronoun *le, 'him'* as the antecedent of *il, 'he'*). On the other side, the analysis concerned the impact of the dialogical-context constraint, such as question answering and repetition, both of which are known to be prevalent moves in adult/child interactions (Clark & Bernicot, 2008; McTear, 1985; Ninio & Snow, 1996). Nouns and strong demonstrative pronouns were more often used in repetitions than third-person clitic pronouns were. Whereas nouns were elicited by questions, third-person pronouns were used for the common topic of a question and its answer.

Secondly, the impact of continuity and contrast relations between utterances was examined. Third-person clitic pronouns were used mostly in the case of topic continuity for all types of replies (following a question or a statement). The context of dialogical contrast (opposition, topic change, reiteration) accounted for the use of nouns and demonstrative pronouns for discourse-given referents. Mixed-models analyses and binary partition trees showed that continuity was the main factor favoring the use of third-person clitic pronouns and disfavoring the use of demonstrative pronouns. At the same time these statistical analyses confirmed that continuity combined with the other factors (answering/elicitation, or the antecedent category) to account for the use of referring expressions. The fact that accessibility, givenness, and shared knowledge are not the only factors accounting for the use of referring expressions, and that they interact with dialogical or interactive factors, has been observed in adults' interactions (Pekarek Doehler, 2000, inter alia) and child discourse (Klein, 2019). In this book, it was also qualitatively observed on various occasions where interactional functions appeared to motivate the use of strong forms for previously mentioned referents.

One can assume, then, that the use of referring expressions is deeply grounded in the experience of dialogue. This brings us to our third possible account: do certain properties of dialogue scaffold children's uses of third-person clitic pronouns which children of this age cannot use in an autonomous way? Based on the assumption that children might learn to use these pronouns by experiencing continuity in dialogue (Clancy, 1996, 2008), the data were scrutinized to identify sequences affording evidence of a plausible path in the acquisition of third-person clitic pronouns (see Chapter 7). The possible sequences ranged from ones containing highly induced uses (answers to questions and repetitions of the interlocutor's discourse, in a format-like mode; Bruner, 1983) to ones exhibiting autonomous uses (spontaneous chaining of a new predication with a pronoun) via uptake of a previous distant sequence. However, this path is necessarily associated with the earliest experiences of discourse continuity. From the onset, a child makes a predication about a given referent with null forms and fillers. In accordance with Slobin (1973: 184), for whom "new forms first express old functions, and new functions are first expressed by old forms", the emergence of third-person pronouns appeared here to be at the crossroads of a previously acquired function in dialogue (continuity via null forms and fillers) and the grasping, in adult's discourse, of the use of a new form. This complex path has yet to be investigated in longitudinal data.

In this fourth section, we gave an overview of how the use of referring expressions is impacted by the activity, the speech genre, the social and interactional setting, and at a more local level, some aspects of dialogue dynamics, for both toddlers and older children. Three conclusions can be drawn.

Firstly, the various chapters of this book provided evidence of the interaction of formal, discourse-pragmatic, socio-discursive and dialogical factors in both the adults' and the children's discourse. These factors together determine the nature of referential strategies (and therefore, grammatical and syntactic uses). Secondly, there seems to be a hierarchy among the factors: interactional and social settings shape the way activities are carried out and speech genres are achieved; and discourse-pragmatic factors such as accessibility (or givenness, or shared knowledge) are intertwined with socio-discursive levels. For instance, a narrative entails presenting a character as if it were new and less accessible, even when it has been previously mentioned (in the title of the story, for example). However, we have seen that, because their narratives were grounded in the here-and-now context of an interaction with their child, the mothers used pronominal devices to introduce new referents, as if they preferred a deictic basis for the narrative. By contrast, teachers over-specified the encoding of accessible referents by using nouns: this might be linked to their attention to the development of the lexicon. This could also be explained by the high frequency of repetitions aimed at assessing and confirming the children's answers to questions. The specificities observed in the teachers' discourse may be related to their pedagogical goals which probably take prevalence over discourse-pragmatic ones. And finally, at the dialogical level, the influence of the speech act (such as a question) and topical continuity interacted with the formal influence of the adult's discourse, which cannot account by itself for the toddlers' uses of referring expressions. This suggests that their early skills are intertwined with the ways in which they participate in a dialogue.

5. Conclusion

At the end of this concluding chapter, we can set forth some hypothesis on the use and acquisition of referring expressions. One of the findings concerns the fact that, within the nascent paradigms of pronouns and determiners, transitional forms, such as null forms and fillers, can be accounted for on the same functional bases as adult-like forms. This has implications for theories of grammatical and pragmatic acquisition: integrating transitional forms not only pushes back early skills to proto-morphological stages but also provides insight into pragmatics in construction.

A second important finding concerns the complex interactions observed between various factors for the different referring expressions, at all ages. As expected, formal factors (such as the lexicon and syntax) proved to have a real impact on the use of nouns and pronouns (but in contrasted ways). However, these factors were not the only active ones, nor did they override discourse-pragmatic

factors. For instance, the observed asymmetry in the development and use of first, second, and third-person pronouns argues in favor of a pragmatic conception of the emergence of morphological paradigms. In line with functional linguistics, which sees grammar as the result of a compromise between various communicative motivations (Du Bois, 1985), this asymmetry suggests that referential skills are built on a coalescence of distributional, syntactic, lexical, semantic, and referential features.

We also contend that formal and discourse-pragmatic factors can be related to socio-discursive and interactional factors. Children seem to experience linguistic units not only through the input they receive, which implies both frequency and distributional features, but also through discourse in dialogue, that is, in various activities, speech genres, and interactional and social settings. These last levels proved to be relevant to understanding the uses of referring expressions. Moreover, the act of referring is shaped by the socio-discursive context in which it is grounded. That is to say that preferential associations of forms with discourse-pragmatic features (such as the position in the referential chain) are also dependent of the context with which they intertwine.

Finally, our findings brought out the importance of interactional and dialogical levels, beyond the issue of input. Communicative experience is also dialogical, and the construction of reference can be a matter of positioning in dialogue: either in the collaborative construction of a joint discourse or in the dynamics of the alignment and misalignment involved in verbal interaction.

These conclusions allow us to speculate about some possible developmental paths. Our results suggest that the development of reference is not linear. For instance, at the onset of verbal production, children have already experienced the contrast between focusing on new objects (following another person's pointing or gaze, attracting the attention of the interlocutor to a new object) and the continuity of joint-attention episodes. Of course, as several studies have shown, children do not master all of the aspects of these communicational events, and in particular, the possible dissociation of perceptual availability and shared knowledge. But a basic referential contrast is acquired, which itself is grounded in particular socio-discursive and dialogical contexts. Gradual acculturation to other socio-discursive contexts and dialogue dynamics will give children the experience of other language practices, and thus, other relevant features. As we have seen, a good example is the use of referring expressions in narratives. Throughout their childhood, children get involved in various contexts of storytelling and move from maternal models, grounded in the here-and-now of dialogue, to school practices and literacy which familiarize children with the monological organization of discourse.

Drawing from both Tomasello's (2003) and Nelson's (2007) proposals when discussing syntactic and grammatical acquisition, we can conclude that

socialization gives children the opportunity to build more general practices – if not rules – in the use of referring expressions. In this sense, the developmental path at stake confirms the idea that social, cultural, and discursive processes take precedence over linguistic units and rules, as predicted by a dialogical conception of language (Vološinov 1929/1986; Bakhtin 1979/1986; François, 1984, 1993).

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Appendix I

Corpora

This appendix presents the corpora on which the chapters are based. They are listed in alphabetical order. While some corpora were recorded and annotated within the DIAREF project (*DIAREF-Lille corpus* and *Adults Narratives corpus*), most of them were collected previously, within other funded projects (*Mother-Child Interaction corpus, Childcare corpus, Standardized play corpus, Anaé and Madeleine from the Paris corpus*), as part of doctoral studies (*Nashawati corpus, Yamaguchi corpus*) or within a personal project (*Salazar Orvig corpus*).

For each corpus, we provide the following information: (1) the original project, either funded or not, (2) the investigators who recorded and annotated it, (3) its availability, (4) its location, (5) the number of participants involved, (6) the circumstances of the collection, as well as various specific details. We indicate also the chapter(s) in which the corpus is used.

Adults Narratives Corpus (Chapter 8)

Original project:
Title: Impact of the interactional setting
Investigators: Mélanie Bernasconi, Geneviève de Weck, Stefano Rezzonico, Anne Salazar Orvig, Elise Vinel
Contact: stefano.rezzonico@umontreal.ca
Availability: not available to the public
Location: Sorbonne-Nouvelle University (Paris 3), France; University of Neuchâtel, Switzerland
Nature of the corpus: cross-sectional
Number of Participants: 20 adults
Media Type (if any): mov. files
Citation Information:
de Weck, G., Salazar Orvig, A., Rezzonico, S., Vinel, E., & Bernasconi, M. (2019). The impact of the interactional setting on the choice of referring expressions in narratives. *First Language*, 39(3), 298–318.

Participants	Sex	Age range	Number of sessions	Activities
20 adults	F	25–40 years old	1	Storytelling

The project is directly related to the DIAREF (ANR-09-ENFT-055) and "Mother-Child interactions" projects (see below).

The participants were asked to tell a story from a textless picture book. They were audio- and video-recorded in a quiet room. The observer was sitting close to the participant in such a way that both could see the pictures of the book. This allowed recreating a setting that was as similar as possible to the setting of the mother-child dyads recordings.

The observer gave the book (J. S. Goodall, 1980, *Ah les belles vacances des petits cochons*, Paris: Gallimard; Original Title: *Paddy Pork's Holidays*, see Appendix III.A.) to the participant with the simple instruction to tell her/him the story from the book.

Video recordings were made using various devices. If necessary tapes were digitized.

This corpus was transcribed following the transcription conventions from the SNF project "Interaction between SLI children and their mother in speech and language therapy setting" (SNF: 111938 and 124744), adapted from LEAPLE (2001) and de Weck (2002). The transcriptions were made by a member of the team, verified by another one and entirely double-checked by a second transcriber. Disagreements were resolved through discussion.

Anaé and Madeleine from the Paris Corpus (Chapters 2, 3, 7, 9, 10)

Original project:
Title: Colaje (Communication langagière chez le jeune enfant / Language communication in young children)
Investigators: Aliyah Morgenstern, Christophe Parisse, Stéphanie Caët, Marie Leroy, Martine Sekali
Contact: aliyah.morgenstern@gmail.com, cparisse@u-paris10.fr
Availability: CHILDES
Location: Sorbonne-Nouvelle University (Paris 3), France
Nature of the corpus: longitudinal
Number of participants: 2 children, the children's mothers, their siblings, the observer
Media type (if any): Mov files

Citation information:

Morgenstern, A., & Parisse, C. (2012). The Paris Corpus. *Journal of French Language Studies*, 22(01), 7–12

Participant name	Sex	Age range	Number of sessions	Activities	MLU
Anaé	F	1;10;18 – 2;2;16	3	Snack, Storytelling,	1.85-3.05
Madeleine	F	1;7 – 2;8	11	Storytelling playing	1.60-2.80

The corpora of Anaé and Madeleine were collected within the Colaje project (ANR-08-COMM-0021) by Prof. Aliyah Morgenstern (http://colaje.scicog.fr/). Several sessions of these longitudinal corpora were chosen for the DIAREF project. Children were filmed at their homes. They played and interacted mainly with their mothers, sometimes with their siblings and/or the observer. No particular instructions were given to the mothers.

The video recordings were made using Sony HDV 1080i/mini DV cameras.

The corpus was transcribed in CLAN, according to COLAJE conventions.

Childcare Corpus (Chapters 2, 3, 6, 7, 9, 10)

Original project:

Title: Développement du Langage et de la Communication entre deux et trois ans: influence du mode d'accueil (Effects of childcare on language and communication development of 2 and 3 years old children)

Investigators: Anne Salazar Orvig, Christian Hudelot, Christiane Préneron

Contact: anne.salazar-orvig@sorbonne-nouvelle.fr

Availability: available upon request

Location: Sorbonne-Nouvelle University (Paris 3), France

Nature of the corpus: cross-sectional

Number of participants: Original corpus: 30 children with their mothers. Selection for the DIAREF research: 17 children with their mothers

Media type (if any): VHS tapes – converted in MP4 files

Citation information:

Marcos, H., Salazar Orvig, A., Bernicot, J., Guidetti, M., Hudelot, C., & Préneron, C. (2004). *Apprendre à parler: influence du mode de garde*. Paris: L'Harmattan

Participant name	Sex	Age range	Number of sessions	Activities	MLU (if available)
Alice2	F	2;3	2	Snack, building game	2.44
Arnaud	M	2;3	2	Snack, building game, drawing	2.96
Chloé	F	2;3	2	Snack, loto	2.71
Clément	M	2;3	2	Snack, puzzle	2.28
Elodie	F	2;2	2	Snack, building game	2.04
Ilona	F	2;3	1	Snack	2.58
Julien	M	2;3	2	Snack, book reading, cards game	1.92
Léa	F	2;2	2	Snack, free play	2.40
Loli	F	2;3	1	Snack	2.94
Marc-Alain	M	2;3	2	Snack, free play, puzzle	1.34
Margaux	F	2;3	2	Snack, puzzles	2.62
Maxime	M	2;3	2	Snack, puzzles	1.45
Olga	F	2;3	2	Snack, puzzles	2.65
Pauline2	F	2;3	2	Snack, joint reading, drawing, free play	2.52
Rémi	M	2;3	1	Snack	1.32
Séréna	F	2;3	1	Snack	2.45
Théo	M	2;3	2	Snack, conversation, joint reading	2.23

All the children were single children at the time of the recording.

The corpus was collected for a research project on the influence of child care on language development (1997–1999) funded by the French Caisse Nationale d'Allocations Familiales: "*Développement du Langage et de la Communication entre deux et trois ans: influence du mode d'accueil*" (convention n° 97/478). Scientific direction: Haydée Marcos.

The corpora of mother-child interactions were collected at the child's home. The observer left the room after starting up the camera. The common activity for all the recordings in the original research project (Mode de Garde) was a snack but we

also asked the mothers to play with their children. The mothers chose very different activities: book reading, puzzles or other games, building games, drawing, etc.

The video recordings were made using a JVC, VHS camera, without any additional microphone. A parallel audio tape recording was made. The tapes were then digitized.

DIAREF-Lille Corpus (Chapters 4, 8, 9, 10)

Original project:
Title: Acquisition des expressions référentielles en dialogue: approche multidimensionnelle, DIAREF (Acquisition of referring expressions in dialog: multidimensional approaches)
Investigators: Rouba Hassan, Nathalie Salagnac, Elise Vinel
Contact: elise.vinel@univ-paris8.fr; rouba.hassan@univ-lille3.fr
Availability: available upon request
Location: University of Lille, France
Number of participants: Original corpus: 16 children with their mothers and 6 teachers. Selection for the DIAREF research project: 10 children with their mothers and 4 teachers.
Nature of the corpus: cross-sectional
Media type (if any): mov files + text files
Citation information:
Vinel, E. (2014). *Comment des adultes et des enfants, âgés de 3 à 6 ans, racontent ensemble des histoires en situations familiales et scolaires* (PhD dissertation, Université Sorbonne Nouvelle Paris 3, Paris, France). https://tel.archives-ouvertes.fr/tel-01271821
Vinel, E., Salagnac, N., Hassan, R. (2014). Expressions référentielles et reprises d'énoncés dans des dialogues adulte-enfant à l'école et en famille: une étude exploratoire, *TRANEL*, 60, 33–45.

Participant name	Sex	Age range	Number of sessions
Anaé	F	3,11 – 4;00	2
Anais	F	3;09 – 3;10	3
Elisa	F	5;04 – 5;05	3
James	M	4;06 – 4;07	4
Jeanne	F	4;04 – 4;05	5
Jules	M	3;11 – 4;01	5

(*continued*)

Participant name	Sex	Age range	Number of sessions
Lila	F	3;11 – 4;00	3
Ludmila	F	4;03 – 4;04	4
Oscar	M	5;08 – 5;09	3
Romain	M	4;05 – 4;06	3
Simon	M	5;06 – 5;07	2
10 mothers	F	30 – 50	2
4 teachers	3F + 1M	30 – 50	1

The collection of this corpus benefited from the French National Research Agency grant ANR-09-ENFT-055-01, (16/11/2009 – 15/11/2013), University of Lille 3, in the framework of the DIAREF project, coordinated by Prof. Anne Salazar Orvig, Sorbonne Nouvelle Paris 3 University.

Within this project, participants were recorded in their homes and at school, in a joint reading activity of a wordless picture-book, and in a symbolic play activity upon request of the researcher who supplied the material for the reading activity (at home and school) and the symbolic play activity at home (Playmobil house / farm). At school, the play material in the classroom was used.

In both activities at home and at school, the adults were instructed to behave with their child/pupil as they usually do. They were encouraged to interact with the child/pupil and to have her/him verbally participating in the activity. No instructions concerning word elicitation were given to the adults. For the symbolic play at school, the adults were instructed not to interfere in the children play (groups of 3 to 4 children) unless conflict arouse.

The video recordings were made using a Sony HDV 1080i/mini DV camera. The tapes were digitized.

This corpus was segmented and transcribed with CLAN using conventional French spelling and punctuation.

Mother-Child Interactions Corpus (Chapters 4, 5, 8, 9, 10)

Original project:
Title: Les interactions mère-enfant en situation logopédique (Interaction between SLI children and their mother in speech and language therapy setting)
Investigators: Prof. Geneviève de Weck, applicant responsible, and Prof. Anne Salazar Orvig, applicant, in collaboration with: Mélanie Bernasconi, Tiziana Bignasca,

Cristina Corlateanu, Christine da Silva-Genest, Séverine Gendre, Juliane Ingold, Jeanne Pantet, Somayeh Rahmati, Stefano Rezzonico & Céline Schwab Stoebener
Contact: genevieve.deweck@unine.ch
Availability: data not available on online databases, available upon request
Location: University of Neuchâtel, Switzerland
Nature of the corpus: cross-sectional
Number of participants: 43 dyads: 25 with a child with typical development (TD) and his/her mother and 18 with a child with developmental language disorders (DLD) and his/her mother
Media type (if any): mov. files
Citation information:

de Weck, G., Salazar Orvig, A., Rezzonico, S., Vinel, E., & Bernasconi, M. (2019). The impact of the interactional setting on the choice of referring expressions in narratives. *First Language*, 39(3), 298–318.

Rezzonico, S., de Weck, G., Salazar Orvig, A., da Silva-Genest, C., & Rahmati, S. (2013). Maternal recasts and activity variations: a comparison of mother-child dyads involving children with and without SLI. *Clinical Linguistics and Phonetics*, 28(4), 223–240.

Salazar Orvig, A., & de Weck, G. (2013). L'étude des pronoms à l'interface de la grammaire et de la pragmatique : l'exemple de la dysphasie. *L'information grammaticale*, 138, 9–18.

Participant name	Sex	Age	Age group	Number of sessions	Activities	Subgroup
Alba	F	4;5	4 year-old group	1	Joint Reading & Symbolic play	TD children
Armand	M	4;6	5 year-old group			
Arnaud	M	7;6	7 year-old group			
Damien	M	7;4	7 year-old group			
Elouan	M	4;5	4 year-old group			
Emma	F	3;10	4 year-old group			
Eva	F	4;10	5 year-old group			
Gaël	M	4;9	5 year-old group			
Gaëlle	F	6;9	7 year-old group			
Guillaume	M	5;9	6 year-old group			
Henri	M	6;3	6 year-old group			
Julie2	F	6;4	6 year-old group			

(*continued*)

Participant name	Sex	Age	Age group	Number of sessions	Activities	Subgroup
Katia	F	3;7	4 year-old group			
Manon	F	7;3	7 year-old group			
Marc	M	4;9	5 year-old group			
Mathias	M	4;0	4 year-old group			
Minoine	M	6;9	7 year-old group			
Nathan	M	3;8	4 year-old group			
Quassim	M	4;3	4 year-old group			
Quentin	M	5;6	5 year-old group			
Sacha	M	4;12	5 year-old group			
Salomé	F	6;2	6 year-old group			
Samuel	M	7;4	7 year-old group			
Sophie	F	7;3	7 year-old group			
Tom	M	5;10	6 year-old group			
Arthur	M	7;4	7 year-old group	1	Joint Reading & Symbolic play	DLD children
Bruno2	M	5;9	6 year-old group			
Dany	M	6;8	7 year-old group			
Dylan	M	5;7	5 year-old group			
Emilie	F	6;10	7 year-old group			
Erwan	M	6;3	6 year-old group			
Grégory	M	4;11	5 year-old group			
Jean	M	4;9	5 year-old group			
Jérôme	M	5;11	6 year-old group			
Julie1	F	6;4	6 year-old group			
Léo	M	7;5	7 year-old group			
Lucas	M	4;5	5 year-old group			
Maé	F	4;9	5 year-old group			
Marie	F	7;3	7 year-old group			
Natacha	F	6;2	6 year-old group			
Samuel2	M	4;9	5 year-old group			
Théa	F	7;3	7 year-old group			
Thierry	M	7;5	7 year-old group			
43 mothers	F					

The collection of this corpus benefited from the following grants: "Les interactions mère-enfant dysphasique en situation logopédique", Swiss National Science Foundation (SNF) grant no 100012-111938 (from 1th of April 2006 to 30th September 2008) and "Les interactions mère-enfant dysphasique en situation logopédique: dynamique interactionnelle et étayage", SNF grant no 100012-124744 (from 1th August 2009 to 31th July 2011).

The dyads were video-recorded in a quiet room, in their home or in the office of their speech and language therapists. The data were collected during four activities proposed by the observers taking place in two sessions. In a previous session, children were tested by a member of the team on expressive and receptive skills with 6 subtests from the N-EEL (Nouvelles Épreuves pour l'Évaluation du Langage, Chevrie-Muller & Plaza, 2001).

The team members did not know the participants before the first session.

The four activities were a joint storytelling activity with a wordless picture book, a symbolic play and two guessing games (by questions and by clues). Only joint book reading and symbolic play were considered in this book. Instructions were as follows:

> Joint book reading: "Here is a book. We would like you to look at it and tell it together. Do as you are used to doing at home. Take as much time as you need." Title of the book: J. S. Goodall, 1980, *Ah les belles vacances des petits cochons*, Gallimard; Original Title : Paddy Pork's Holiday.
> Symbolic play: "Here is a house with some people, animals, and other objects. We would like you to play together, making up a story. You have 15 min. Do not worry about time, we will warn you a few minutes before the end. You can start now."

The video recordings were made using a Sony HDV 1080i/mini DV camera. The tapes were digitized using Adobe premiere.

All interactions were transcribed including nonverbal contributions. The conventions were adapted from LEAPLE (2001) and de Weck (2002). The transcriptions were made by a member of the team and verified by another one.

Nashawati Corpus (Chapters 2, 3, 7, 9, 10)

Original project:
Title: Nashawati PhD Dissertation: Le développement des expressions référentielles chez le jeune enfant: noms et pronoms dans des dialogues mère-enfant
Investigator: Salma Nashawati
Contact: snashawati@gmail.com
Availability: data not available on online

Location: Sorbonne Nouvelle Paris 3 University, France
Nature of the corpus: longitudinal
Number of participants: 2 children, 2 adults
Media type (if any): mov files
Citation information:
Nashawati, S. (2010). *Le développement des expressions référentielles chez le jeune enfant: noms et pronoms dans des dialogues mère-enfant* (PhD dissertation, Université Sorbonne Nouvelle – Paris 3, Paris, France). Retrieved from https://tel.archives-ouvertes.fr/tel-01171621.

Participant name	Sex	Age range	Number of sessions	Activities	MLU (if available)
Mathilde	F	2;1;9 – 2;6;13	5	Reading, playing	1,67-2,53
Clémence	F	2;2;0 – 2;6;14	4	Reading, playing	2,92-3,37

This corpus was collected within a personal project of Salma Nashawati and constitutes the data on which her doctoral dissertation is based.

It is a longitudinal corpus of two children filmed once every 15 days in play and book reading activities with their mothers at their homes.

Parents had been instructed to interact with their child in play and conversation as they normally do, introducing new books and toys that the observer brought to them in each session. The session started as soon as the child discovered the new book or toy. The same books and toys were used for the two children as a control element.

The video recordings were made using a Sony HDV mini DV camera, without any additional microphone. The tapes were digitized using Adobe Premiere.

Salazar Orvig Corpus (Chapters 2, 3, 7, 9, 10)

Original project:
Title: Développement des conduites dialogiques (Development of dialogical behaviors)
Investigator: Anne Salazar Orvig
Contact: anne.salazar-orvig@sorbonne-nouvelle.fr
Availability: not available
Location: University of Sorbonne-Nouvelle (Paris 3), France
Nature of the corpus: longitudinal

Number of participants: 1 child, his mother, father, sister and the observer
Media type (if any): VHS tapes – converted in MP4 files
Citation information:
Salazar Orvig, A. (2003). L'inscription dialogique du jeune enfant: évolution, diversité et hétérogénéité. *TRANEL, 38–39*, 7–24.

Participant name	Sex	Age range	Number of sessions	Activities	MLU (if available)
Daniel	M	1;9;22 –2;4;08	5	Conversation, Free play, Snack, book reading	1,35 – 2.50

The corpus was collected for a personal project on the development of dialog which began at the University Paris V (René Descartes) and was continued at the University Sorbonne Nouvelle – Paris 3.

Recording took place every two weeks at home in natural contexts, between 1;6 and 2;6. Five sessions of this corpus were selected for the research on the acquisition of referring expressions.

There were no elicited activities. The observer followed Daniel through his interactions with his mother, and/or his father and/or his sister. In some opportunities, only the observer interacted with the child.

The video recordings were made using a JVC, VHS camera, without any additional microphone. A parallel audio tape recording was made. The tapes were then digitized.

Standardised play Corpus (Chapters 3, 7, 9, 10)

Original project:
Title: Comparison between mother-child communication and father-child communication
Investigators: Haydée Marcos, Mila Kornhaber, Céline Ryckebusch
Contact: marcoshaydee@gmail.com
Availability: data not available on online databases
Location: Paris-Descartes University (Paris 5), Paris, France
Nature of the corpus: cross-sectional
Number of participants: 6 children and their mothers and fathers
Media type (if any): video
Citation information:

Kornhaber-Le Chanu, M., & Marcos, H. (2000). Young children's communication with mothers and fathers: Functions and contents. *British Journal of Developmental Psychology*, 2, 187–210.

Ryckebusch, C., & Marcos, H. (2004). Speech acts, social context and parent-toddler play between the ages of 1;5 and 2;3. *Journal of Pragmatics*, 36, 883–897.

Participant name	Sex	Age	Number of sessions	Activities
Alice1	F	1;10;15	2	Standardised play
Cécile	F	1;10;20	2	Standardised play
Iris	F	1;11;3	1	Standardised play
Lisa	F	1;10;4	2	Standardised play
Pauline1	F	1;10;6	1	Standardised play
Thibault	M	1;10;12	2	Standardised play

The dyads were video-recorded in a quiet room, at day-care centers. The observer brought a set of various toys (doll, wooden train, toy cars, farm animals, etc.) and participants could choose among them. No instructions were given to the adults. The duration of each session was about 10 minutes.

All interactions, verbal and nonverbal, were transcribed. The transcriptions were made by a member of the team and verified by another one.

Yamaguchi Corpus (Chapter 2)

Original project:
Title: Yamaguchi's PhD Dissertation (Parcours d'acquisition des sons du langage chez deux enfants francophones) and Leonard and Colaje projects.
Investigator: Naomi Yamaguchi
Contact: naomi.yamaguchi@sorbonne-nouvelle.fr
Availability: online: CHILDES, PHONBANK
Location: Sorbonne-Nouvelle Paris 3 University, Paris, France
Nature of the corpus: longitudinal
Number of participants: 1 child, 2 adults
Media type (if any): mov files
Citation information:

Yamaguchi, N. (2012). *Parcours d'acquisition des sons du langage chez deux enfants francophones* (PhD dissertation, Université Sorbonne-Nouvelle, Paris 3, Paris, France). Retrieved from https://tel.archives-ouvertes.fr/tel-01127106.

Participant name	Sex	Age range	Number of sessions	Activities	MLU (if available)
Adrien	M	1;11.14-4;03.27	26	Plays, bath, meals	

The recordings of this corpus were part of the Leonard (ANR-JC05_47273) and Colaje (ANR-08-COMM-0021) projects coordinated by Prof. Aliyah Morgenstern. In these projects, the children were recorded in their home in a naturalistic setting, for one hour every month. Adrien was recorded by the author, who is also a friend of the child's family.

During the recordings, the child typically looked at picture books and played with toys with one of his parents, and sometimes bathing times were recorded; there were no instructions given as to word elicitation to the parents.

The video recordings were made using a Sony HDV 1080i/mini DV camera, and the audio recordings were made using a wireless microphone (Sennheiser, EW 112-p G2) worn by the child. The tapes were digitized using iMovie. This corpus was originally segmented and transcribed with PHON. The phonetic transcription (IPA Actual) was double-checked for 4.5% of the total data, and the agreement percentage for consonants reached 95.5%.

References

Chevrie-Muller, C., & Plaza, M. (2001). *Nouvelles épreuves pour l'examen du langage (N-EEL)*. Paris: Les Editions du Centre de Psychologie Appliquée.

de Weck, G. (2002). Options théoriques et choix méthodologiques pour l'étude des capacités discursives des enfants d'âge préscolaire. *Revue PArole*, 22–23–24, 143–174.

LEAPLE (2001). *Conventions de transcription*. Paris (UMR 8606 – CNRS – Université de Paris 5).

Appendix II

Transcription conventions

Here we indicate the main transcription conventions which can be found in the examples.

Example captions can indicate the name of the participant, the child's age (years; months) and/or his/her Mean Length of Utterance (MLU).

In the excerpts, the first three letters of the child's first name are given in lowercase (e.g. Cle for Clément), Mot stands for mother, Fat for father, Tea for teacher, and Obs for observer.

For toddlers the utterances are first transcribed phonetically, between square brackets [ ]); the interpretation in French is given below in inverted commas.

For all participants approximate English translation is given between inverted commas.

()	Elision
{ }	Uncertain transcription
{x}	Uninterpretable or inaudible segments
[ ]	Phonetical transcription
"abc"	Reported speech
< >	Contextual indications
((points))	Non-verbal behavior
=	Simultaneity between verbal and non-verbal behaviors of the same speaker
° °	Simultaneity between non-verbal behavior of one speaker and verbal and/or non-verbal behavior of the other speaker
s'en va	Verbal overlap between two speakers
: ::	Syllabic lengthening
F	Filler Syllable
A	Amalgam (only in Chapter 2)
NULL	Null form (only in some chapters)
.	Assertion

?	Interrogation
!	Exclamation
…	Incomplete utterance
.+	Prompting
/	Silence less than 3 seconds long
‘abc’	Interpretation in French and approximate English translation
NOIR	Capital letters indicate an emphasis

Appendix III. A

Summary of *"Ah les belles vacances des petits cochons"*

(J. S. Goodall, 1980, Paris: Gallimard) – Original story title: Paddy Pork's Holiday

The wordless picture book used in this study tells the adventures of Paddy Pork. He goes on a camping trip on foot but he is quickly tired of walking and stops under a tree. He tries to hitchhike but a passing car does not stop. A family riding a horse-drawn carriage stops and gives him a ride. On their way, Paddy Pork and his new friends pass the car that had not stopped earlier and had broken down in the meantime. Paddy Pork says goodbye to his new friends when he arrives at his destination. He pitches his tent in a forest and goes to sleep. A storm comes up and the strong wind blows Paddy Pork's tent away. Paddy tries to rescue his tent but he falls down from a tree on a steam train passing below. He falls right into the coal car and gets all dirty. He decides to wash in a nearby lake but a dog steals his clothes. He puts on the clothes of a scarecrow he sees in a field and walks until he reaches a town. While walking in front of a theater, Paddy is mistaken for a famous pianist and is forced to go up on stage. He cannot play the piano, and the real pianist, whose car had broken down earlier in the story, arrives. The real pianist gets mad at Paddy who runs away. The main character finds his friends who are picking apples. The family takes him back home to his mom.

Appendix III. B

Summary of "*Le voleur de poule*"

(The Hen Poacher) (B. Rodriguez, 2007, Paris: Autrement)

This wordless picture book, used in school, tells the adventure of a fox who steals a hen and is then hunted down by the hen's friends (a rabbit, a rooster, and a bear). While the hen, the rabbit, the rooster, and the bear are sitting quietly in their backyard, a fox comes up and grabs the hen. He disappears into the forest carrying the hen, so the rabbit, bear, and rooster set out to chase after him. He flees through the forest, and in the evening he sleeps in a tree with the hen in his arms. The next day, he resumes his flight, with the other animals hot on his heels. He climbs a mountain, still carrying the hen, and finally hides in some narrow tunnels dug into the rocks. The fox and the hen, after playing chess, go to sleep. Unable to enter the tunnels, the rabbit, bear, and rooster stay on the mountain waiting for the fox. The next day, the fox and the hen head to the beach where they take a boat to reach the fox's house. The other animals finally reach the fox's house thanks to the bear, who allows them to cross the water on his back. They then discover that the fox and the hen are sitting quietly next to the fire. Reassured, they go back home.

Index

This book describes the repertoire and uses of referring expressions by French-speaking children and their interlocutors in naturally occurring dialogues at home and at school, in a wide range of communicative situations and activities. Through the lens of an interactionist and dialogical perspective, it highlights the interaction between the formal aspects of the acquisition of grammatical morphemes, the discourse-pragmatic dimension, and socio-discursive, interactional and dialogical factors. Drawing on this multidimensional theoretical and methodological framework, the first part of the book deals with the relation between reference and grammar, while the second part is devoted to the role of the communicative experience. Progressively, a set of arguments is brought out in favor of a dialogical and interactionist account of children's referential development. This theoretical stance is further discussed in relation to other approaches of reference acquisition. Thus, this volume provides researchers and students with new perspectives and methods for the study of referring expressions in children.

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