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## **Reference and referring expressions in first language acquisition**

Anne Salazar Orvig

Université Sorbonne Nouvelle - CLESTHIA

### **1. Introduction**

The field of acquisition of reference and referring expressions has grown into a rich and stimulating mirror of child development issues. Children's acquisition and use of referring expressions raise fundamental questions because they affect the morphosyntactic, semantic and pragmatic aspects of language acquisition, their use and their interfaces. After a first period where studies were focused primarily on narratives and other experimental settings, in the last twenty years there has been a significant development of studies conducted on dialogues, both in natural and experimental settings. All these studies flourished from very different theoretical approaches and brought a radical change in the perception of children's discursive productions and uses of referring expressions. The result is a rather complex landscape of controversial accounts, due both to the diversity of theoretical and methodological options and to the great variety of factors that affect children's behavior.

Orientations, hypotheses and interpretations of children's referring behaviors have also been strongly influenced by the fact that first studies concerned Indo-European languages such as English or French. However differences among languages at least regarding morphosyntactic aspects, such as argument expression or structure of noun phrases, can have a significant influence in the acquisition and use of referring expressions. There are some

cross-linguistic studies conducted on narratives (Hickmann, 2002; Hickmann, Hendriks, Roland, & Liang, 1996, Hickmann, Schimke & Colonna, 2015 ) or on naturally occurring dialogues (Coene, 2006; Rozendaal & Baker, 2008) as well as some studies on bilingual children (Paradis & Navarro, 2003; Serratrice, 2007). But, studies on naturally occurring dialogues offer an extended view of crosslinguistic diversity (Allen, 2000; Allen, Hughes & Skarabela 2015, Clancy 1997, 2004; De Cat, 2004a; Guerriero, Oshima-Takane, & Kuriyama, 2006; Huang, 2011; Hughes & Allen 2013; Salazar Orvig, A., Marcos, H., et al. 2010a, Skarabela, 2007; Skarabela & Allen, 2002). The present chapter will mostly refer to European languages and monolingual studies; examples will be drawn from a specific research in French<sup>1</sup>.

The chapter is organized as follows: Section 2 summarizes the milestones of acquisition of referring expressions from the morphological point of view; section 3 presents research on child reference along two main lines, studies on the expression of arguments and studies on determiners. The chapter concludes with a discussion on the controversial results that characterize the field.

## **2. First referring expressions**

Children's first steps in reference are also their first steps in language. In languages like English or French first words are very frequently nouns<sup>2</sup>, and full referring expressions progressively emerge with grammatical and syntactical development.

In the first stages of language acquisition, children's utterances usually consist of one or two words or formulaic expressions. These utterances accomplish referential, predicative or socio-pragmatic functions. Whereas the latter do not involve reference (e.g. *bye bye*), the former are used to refer to entities and can be bare nouns (see example 2) or demonstratives (in French *ça*, as in (1))

**(1) Daniel<sup>3</sup> 1;10 - MLU 1.36**

*Daniel turns around the camcorder pointing or touching every component*

DAN -	sa + sa 'ça + ça'	'that + that'
	<he points to the cassette compartment >	
OBS -	ça c'est la cassette	'that's the cassette'
DAN -	a 'ah'	'ah'
OBS -	oui	yes

Nouns (and proper names) are used both in referential and non-referential (e.g. labelling, vocative or attributive) functions. In example (2) the child produces a noun ('lait' 'milk') to introduce a new referent and another ('cheval' 'horse') to label the object she hands to her mother.

**(2) Pauline 1;11 - MLU 1.73**

*Pauline and her mother are playing with different toys. They are currently handling a doll.*

MOT -	et si tu lui donnais à boire	and what if you give her something to drink?
PAU -	o! lɛ 'oh! lait'	'oh! milk'
MOT -	elle boit du lait elle aussi	'she also drinks milk'
PAU -	wi bwa nɛle 'oui boit ne lait'	'yes drink(s) F milk'

*Pauline picks up a horse and hands it to her mother*

PAU -	fəval 'cheval'	'horse'
MOT -	oui	'yes'

Other utterances consist of predicative terms with null arguments as in example (2) Pauline's 'boit ne lait' ('drink(s) F milk') or in example (3) Iris' 'tombé' ('fell/fallen') uttered about the toy she is playing with.

**(3) Iris 1;11 – MLU 1.30**

*Iris and her father are playing with a Mister Potato Head®*

FAT -	voilà l'oreille	'there you have the ear'
IRI -	ah!mman	'ah! mman'
	<i>Mister Potato Head slips from her hands</i>	
IRI -	o! tɔ̃be 'oh! tombé'	'oh! fell'
FAT -	il est tombé. eh bien ramasse-le	'it fell. well pick it up'

Morphological development of children presents transitional phenomena as proto-morphological filler syllables<sup>4</sup> (hereafter fillers) that can be observed in front of verbs:

**(4) Daniel 1;10 – MLU 1.36**

*Daniel points once again to the camera*

DAN 57	a? + sa? <pointing to the cassette> 'ah? + ça?	'ah? that?'
OBS 75	ça c'est la cassette <humming>	'that's the cassette'
DAN 58	ətjə. atu {XX}. 'F tou(rne)'	'{XX}. F turns'
OBS 76	mhm	'hum'

In this example Daniel produces, before the verb *'tou(rne)'* (*'turn(s)'*), a filler syllable *'a'* which cannot be identified either as a demonstrative or as a clitic pronoun. The presence of fillers suggests that children grasp the need to fill the pre-verbal position before acquiring the pronominal paradigm.

During this first period, children produce very few clitic pronouns. They are frequently found in quasi-frozen expressions, such as *'(i)l est où?'* (*'where is it?'*) in example (5):

**(5) Lisa 1;11 – MLU 1.56**

*Lisa and her father are playing with farm animal toys*

FAT -	si tu mettais le cheval dedans? <l'enclos>	'what if you put the horse inside <the paddock>?'
LIS -	leu? '(i)l est où?'	where is it?
FAT -	regarde bien y en a plusieurs de chevaux	'look closely there are several of them, horses'

One of the main characteristics of linguistic development (MLU over 2) is the increase of clitic pronouns among referring expressions:

**(6) Loli 2;3 – MLU 2.94**

LOL -	mamã leu papa? 'maman (i)l est où papa?'	'Mummy where is Daddy?'
MOT -	<she laughs> . t(u) as d(é)jà demandé. il est à son tra(vail) +.?	'you already asked. he is at work'
LOL -	sõbyko 'son bureau'	'his office'
MOT -	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.'
LOL -	ilkɔva! 'il trava(ille)!'	'he is working!'

In this example, Loli, produces two 3<sup>rd</sup>PPs<sup>5</sup>; one in a dislocated construction (*'maman (i)l est où papa?'*, *'Mummy, where is Daddy?'*) and the other as the subject of the sentence (*'il trava(ille)!''*, *'he is working'*). Spoken French language presents another clitic pronoun, the demonstrative *'c'* in the *"C'est +X"* construction. This clitic demonstrative pronoun is a very

frequent device for encoding inanimate referents, as we can see both in the adult's and child's utterances in example (7):

**(7) Loli 2;3 – MLU 2.9**

During snack time, Loli and her mother are talking about a playground

MOT -	t(u) as vu le dada! attends	'did you see the horse? wait!'
LOL -	ãseko	
	'han c'est (g)ros'	'hum it's big'
MOT -	c'est trop gros <she laughs>	'it's too big'

Whereas demonstratives ('ça' in French, *that* in English, see Clark & Sengul, 1978) are the very first grammatical referring devices acquired by children, the personal pronoun paradigm is built all along the grammaticalization process. Most studies<sup>6</sup> date the emergence of first personal pronouns around 2 years old and consider that children master the whole paradigm (with all its forms and functions) around 30 months. At the same time, significant variability can be observed, which can be explained either by individual styles, which we cannot address here, or by the influence of genres and activities (see section 4.3).

Null forms in child language are a recurrent concern in language acquisition research, particularly in languages that do not license null subjects, such as English or French (Allen, 2006; Guasti, 2002; Valian, 1990, 1991). Studies propose complementary theoretical explanations. In formal approaches inspired by generative theory, authors usually oppose "competence and grammar-focused" hypotheses versus "performance focused" hypotheses. According to the first, children have an inner grammar that allows the production of null arguments (Hyams, 1986; Rizzi, 1993/1994; Wexler, 1998). According to the second, children's grammar does not differ from the target grammar but their production is limited in terms of processing (Bloom, 1990, Jakubowicz & Rigaut, 1997 for French). In another theoretical framework, usage based approaches explain omissions or errors on the basis of the distributional features of child directed speech without postulating an innate grammar (Freudenthal, Pine, & Gobet, 2007; Theakston, Lieven, Pine, & Rowland, 2001). However, as

will be discussed below, it is necessary to consider also discourse-pragmatic factors to account for the use of null forms and fillers in the first stages of language acquisition.

In parallel with the pronominal paradigm, children progressively acquire the determiner paradigms.-The acquisition of determiners is also a gradual process involving omission, filler syllables, fluctuation, and (nearly) systematic presence of adult like forms in mandatory contexts (between 2;6 and 3, see Bassano, Maillochon, & Mottet, 2008; Rozendaal & Baker, 2008; Salazar Orvig, Marcos et al. 2013). However, the rhythm of acquisition varies with languages. It is more precocious in French and in other Romance languages than in Germanic ones (Guasti, Gavarró, de Lange, & Caprin, 2008; Rozendaal & Baker, 2008). In languages that have the definite/indefinite contrast (as English and French), definite and indefinite determiners make up the majority of determiners used by the youngest children (Coene, 2006; Rozendaal & Baker, 2008; Salazar Orvig, Marcos et al., 2013) as well as by adults. In the first stages definite determiners precede indefinite ones by far. With linguistic development indefinite determiners grow to the same values as definite ones. As with pronominal acquisition, children's development is characterized by great variability that can be accounted for in terms of both individual styles and influence of genres and activities.

### **3. First steps in reference**

The construction of grammatical paradigms simultaneously involves the acquisition of referential functions. The characteristics and development of argument expression (and choice of nominal phrases) will be presented before addressing the issue of the functional dimension of determiners acquisition

#### **3.1 Argument expression**

How do children express referents? This question is often regarded as reflecting a choice<sup>7</sup> between overt and covert arguments, on the one hand, and between lexical or grammatical

forms, on the other. In a seminal study, Greenfield (Greenfield, 1979; Greenfield & Smith, 1976) showed the role of informativeness in the choice of the situational element that was encoded. In her account, informativeness was to be understood from the perspective of the child. Studies that consider the issue within the framework of a cognitive conception of reference discuss children's uses in terms of information structure, accessibility or givenness. Other studies have been inspired by textualist perspectives and very frequently considered reference in child language in terms of cohesion. This dividing line partially coincides with the distinction between studies on naturally occurring dialogues on one side, and studies on narratives on the other; experimental studies may fall within one or the other of these approaches.

### **3.1.1 Studies on narratives**

Studies of narratives by children aged 2 to 5 (Bennett-Kastor, 1983; Peterson & Dodsworth, 1991) show that even the youngest ones use the third person pronoun much more frequently to reiterate a referent than to introduce a new one, although the authors also mention inappropriate or ambiguous productions.

In many studies on narratives, early uses of pronouns (as well as definite articles, see section 3.2.1) are described as being deictic or exophoric. Hickmann (1987) and de Weck (1991) considered that as young children mostly speak of present referents, the head of a co-referential chain and the subsequent mentions are necessarily deictic. Karmiloff-Smith's (1985) study on narratives of English and French speaking children stemmed from a similar perspective. Her results showed that before the age of 6, children had a deictic strategy which did not involve any discursive representation. Children narrated the story as if they were describing unlinked pictures; pronouns were often associated with pointing gestures; their reference was not discourse but stimulus driven. During the second stage, children adopted a 'thematic subject strategy' which corresponds to a first, simplified, form of discursive



representation, reduced to the main character. Only after 9, do children adopted an adult-like anaphoric strategy where they introduced linguistic contrasts according to the narrative roles of the various characters. At this stage children manage both the relation to the referent and the discursive organization. However in a study on German speaking children, Bamberg (1986) showed that the thematic subject strategy appeared earlier (at 3;6) when children had previously looked at the picture book.

### **3.1.2 The choice of referring expressions in naturally occurring dialogues**

In the last twenty years there has been a great development of studies on naturally occurring dialogues that has provided evidence for a more subtle understanding of children's behavior. These studies converge to show that young children predominantly use weak referring expressions (null forms, fillers, unstressed and clitic pronouns) to encode 'in focus' or highly accessible referents, and strong referring expressions to encode less accessible referents. This trend has been observed in several languages such as English (Gundel & Johnson, 2013; Gundel, Ntelitheos, & Kowalsky, 2007; Hughes & Allen, 2013), French (Salazar Orvig, Marcos et al., 2010a; Salazar Orvig, Marcos et al. 2010b), Italian (Serratice, 2005), Inuktitut, (Allen, 2000; Skarabela, 2007; Skarabela & Allen, 2002), Japanese (Guerriero et al., 2006), Korean (Clancy, 2004), and Mandarin (Huang, 2011).

Gundel & Johnson (2013) compare the use of 3<sup>rd</sup> person and demonstrative pronouns and demonstrative, definite and indefinite NP, following the Gundel et al. (1993) Givenness Hierarchy in a corpus of 9 children aged between 1;11 and 2;8. The children used 95% of the 3<sup>rd</sup>PPs for in focus referents, whereas demonstrative pronouns were preferred for referents that were activated, but not in focus. With a different methodology, Hughes & Allen (2013) studied (in a corpus of 4 children aged between 2 and 3 at two developmental moments) the choice between four forms (null/3<sup>rd</sup>PP/ demonstrative pronoun/lexical noun) in the subject function. They showed that 3<sup>rd</sup>PPs and null forms were preferred for prior mentioned referents

and/or in the context of joint attention. They also showed an evolution between Time 1 and 2: in Time 1, children produced mostly null subjects when the referent was under joint attention or had been previously mentioned whereas in Time 2, they prefer 3<sup>rd</sup>PPs. Cross-sectional and longitudinal results for French replicate both Gundel & Johnson (2013) and Hughes & Allen's (2013) for English. Whereas dislocations, nouns and strong demonstratives are more often used to introduce a new referent (see examples (1), (2)) or to reactivate a referent mentioned in a previous topical sequence (see example (6)), the overwhelming majority of children's 3<sup>rd</sup>PPs encode a previously mentioned referent (see example (5), and (6)). Null forms (see example (3), fillers (4) and, to a less extent, clitic demonstratives (7) alternate with 3<sup>rd</sup>PPs in this last context.

At the same time, all data show some few cases of 3<sup>rd</sup> PPs or other weak referring expressions for referents that have not been previously mentioned. These cases have been usually considered as evidence of a preferred deictic behavior by children or of the lack of sensitivity towards perceptual availability, for example. But the study of naturally occurring dialogues shows the need to consider also the non-verbal dimension of the ongoing activity (as well as other dialogical factors; see also sections 4 and 5 below). For instance, when the only criterion to consider that a referent is in focus is the fact that it has been mentioned in the immediate previous utterances (by the child or by her interlocutor), we miss the fact that participants can be jointly attending to non-verbalized entities. Skarabela and colleagues (Skarabela & Allen, 2002; Skarabela, Allen, & Scott-Phillips, 2013) have explored the way joint attention affects the choice of referring expressions, independently of discourse givenness. They showed that Inuktitut speaking children tended to omit arguments or use clitic demonstratives in the context of joint attention and to use lexical expressions or independent demonstratives in the absence of joint attention. The same trend can be observed in data from French speaking children. The rare cases when 3<sup>rd</sup> person clitic pronouns are

used for first mention referents correspond to objects that are clearly under joint attention as it can be seen in example (8).

**(8) Lisa 1;11 – MLU: 1.56**

Lisa is playing with a puzzle, her father is watching her. She places the pieces on the board but does not put them in the right place. Having done so, she looks at the puzzle.

LIS -	alɛfini		
	‘ah! l’ɛst fini’		‘ah! <b>it</b> ’s finished’
FAT -	<smiling> tu crois que c’est fini? tu crois que		‘you think it’s finished? you think that’s the
	c’est comme ça que ça va Lisa?		way it’s supposed to be, Lisa?’

The child uses the form ‘l’ for ‘il’ (‘it’) to first mention the puzzle she has been doing.

This puzzle is clearly under joint attention, as can be inferred from the fact that the father does not ask for clarification.

When young children mention referents which are not under joint attention but part of a wider shared knowledge, they prefer nouns and demonstratives (Gundel & Johnson, 2013; Salazar Orvig, Da Silva et al. 2013; Skarabela et al., 2013). In example (9) the child uses ‘ça’ (‘this’) when she picks up and presents new Lego® pieces to her mother.

**(9) Elodie 2;3 MLU 2.04**

*Elodie and her mother are playing with Lego®. E. picks up various Lego pieces one by one.*

ELO 51	ale +++ esa ++ esa <louder> ++ isi kɔmsa § +		
	isi sa + esa		
	‘allez +++ et ça +++ et ça <louder> ++ ici		‘there +++ and this +++ and this <louder> ++
	comme ça + ici ça + et ça’		here like that + here this + and this’

Finally, occurrences of 3<sup>rd</sup>PPs for non-retrievable referents are very rare and children do not use pronouns to first mention a non-familiar referent more often than adults do<sup>8</sup>.

**3.1.3 The choice of referring expression in experimental settings**

Several studies investigated the choice of referring expressions by children in controlled dialogical contexts (Campbell, Brooks, & Tomasello, 2000; Matthews, Lieven, Theakston, & Tomasello, 2006; Salomo, Graf, Lieven, & Tomasello, 2011; Salomo, Lieven, & Tomasello, 2010; Serratrice, 2008, 2013; Wittek & Tomasello, 2005). They explored the influence of discursive factors, such as the previous mention of the referent by the interlocutor, vs. the influence of perceptual availability. They also addressed the impact of the type of question the

children were asked (see section 4.1). These studies converged to show that discursive context affects children's choice of nouns vs. pronouns and/or null forms. Campbell et al. (2000) showed that children aged 2;6 to 3;6 preferred null forms and/or pronouns to respond to questions (*What did X do?*) that mentioned the referent, whereas they would use nouns and pronouns after an open question (*What happened?*). This influence of the preceding discourse context was confirmed for German by Wittek & Tomasello (2005), who showed that questions about the target referent were answered by children aged 2;6 to 3;6 with null forms or pronouns whereas questions that did not mention the target referent and that revealed no knowledge of it were answered with nouns. However, younger children (around 2) were less influenced by the discursive context. On the other hand, these authors showed that children aged 2;6 to 3;6 were not sensitive to the perceptual availability of the referents.

Matthews et al. (2006) further explored this issue and confirmed for English speaking children (aged 3 and 4) that children are sensitive to prior mention of the referent and not to its perceptual availability for the interlocutor. They showed that nouns were very frequently used when the referent had not been previously mentioned. Salomo and colleagues (Salomo et al., 2011; Salomo et al., 2010) worked on the expression of the patient in German through action focused questions. In a first study (Salomo et al., 2010) they showed that when only action changes, children (mean age 2;3) tended to use only a verb whereas when the patient was the new element they expressed it with a lexical NP. However, they also found that children expressed perceptually new patients more often when the experimenter had provided a discourse context previous to the question. The second study (Salomo et al., 2011) explored further the role of discursive context and perceptual availability for the expression of patients. Contrary to previous studies they found that children can take the interlocutor's perspective when a conflict between previous discourse and perception arises.

### 3.1.4 Competing referents in discourse

One of the reasons why narratives are more challenging for children than everyday dialogue is probably because they require management of several different co-referential chains throughout a long discourse.

In French, young children use significantly more 3<sup>rd</sup>PPs, omissions and fillers than nouns for topical continuity (as defined in Lambrecht 1994) in subject position (Salazar Orvig, Marcos et al., 2010b). Studies on older children's narratives (Hickmann, 2002; Jisa, 2000) showed that pronouns are preferred when the character is maintained as a subject throughout utterances. For younger children (for instance In the DIAREF data) more than 50% of the 3<sup>rd</sup>PPs encode a referent maintained in the subject function whereas more than 80% of the nouns encode a referent maintained in a non-subject function. As later in narratives (Karmiloff-Smith, 1985), very young children use dislocations to contrast two referents in the subject function.

Alternation in syntactic function is usually linked to the fact that speakers have to deal with competing referents. This is clearly the case in narratives when several characters alternate at the forefront of events. Adults and older children deal with contrasting topics by shifting weak (zero and pronouns) and strong expressions (stressed pronouns, lexical forms, dislocated and cleft constructions). In Karmiloff-Smith's model (1985), this corresponds to the "anaphoric strategy" by quite older children whereas Bamberg (1986) showed that younger children (3;8) contrasted pronouns for the main character and nouns for referents that did not contribute to the thematic progression.

In naturally occurring dialogues, the contrast might not be managed in the same way. Hughes & Allen, 2013 showed for English that, even though adults preferred lexical forms, they also used pronouns (about 40%) when dealing with competing referents. In their study,

children at Time 1 resorted to a more heterogeneous range of expressions and developed towards more adult like uses in Time 2.

Dealing with potential ambiguity also depends on whether the referents are human vs. non-human or animate vs. non-animate. In the DIAREF data, children and adults showed a similar trend: 3<sup>rd</sup>PPs were more often used for animate referents (60 %) whereas nouns and demonstratives were preferred for inanimate referents (68% and 91% respectively for the children, 77% and 83% for the adults). But Allen and her colleagues (Allen, Skarabela, & Hugues, 2008; Hughes & Allen, 2013) found, for various languages, great variability among children: some preferred null forms or pronouns for animate referents whereas others prefer lexical forms or demonstratives. In narratives, Bamberg (1986) showed that German speaking children tended to contrast the human character, a boy, and the main second character, a dog, by preferring pronouns for the first and nouns for the second. In contrast, when competing referents share the same features, the narrative role constrains the choice of referring expressions: in that case, pronouns are devoted to main characters (Hickmann, 2002). In an experimental setting, (Serratrice, 2013) showed that children (mean age 4;7) tended to use pronouns in the absence of competing referents, or when the other referent is inanimate, and to avoid pronouns when the competing referent were also animate.

Distance from the previous mention of the referent is another factor affecting the choice of referring expressions (Givón, 1995). For instance, in the DIAREF corpus, pronouns were predominantly used (93% for adults and 82% for children) in the context of immediate continuity (within the last four turns). Studies on French narratives (Hickmann, 2002; Jisa, 2000) have shown that adults and children (aged 4-5, 7 and 10) prefer pronouns for subsequent co-referential mentions whereas nouns are used when the character has not been mentioned in the preceding utterance.

### 3.2 Determiners

Even if they are preferred for new and reintroduced referents, full lexical NPs appear in various contexts in children's discourse. A simplistic vision of child communicative experience would suggest that infants and young children only deal with specific, concrete and present referents, and that other types of reference are late acquisitions. In fact, children experience both referential and non-referential uses of nouns from the onset. One of the first and most frequent non-referential uses of nouns is labelling (Ninio & Bruner, 1978) as shown in example (10).

**(10) Pauline 1;10 – MLU 1.73**

MOT 3	c'est quoi ça Pauline?	'what's that Pauline?'
MOT 4	c'est un monsieur. oui c'est un monsieur	'it's a man. yes it's a man'
<i>Pauline shows another figure</i>		
PAU 3	møsjø, møsjø 'monsieur, monsieur'	'man, man'
MOT 5	non ça c'est la vache	'no. that's the cow'
PAU 4	møsjø <showing another figure> 'monsieur'	'man'
MOT 6	oui c'est un monsieur, c'est bien	'yes. It's a man. it's fine'
PAU 5	waty 'voiture'	'car'
MOT 7	voiture. oui c'est une voiture tu connais bien ça	'car. yes it's a car. you know that well'

The focus of the discussion between mother and daughter in this sequence is labelling the figures they are handling. It can be observed, incidentally, that even if the indefinite determiner is preferred for labelling, adults (and children) also use definites (MOT 5) (see also Rozendaal & Baker, 2008).

Labelling is not the only non-referential use of nouns. Naturally occurring dialogues show various uses of nouns in idioms (*prendre un bain* 'take a bath'; *avoir peur* 'to be scared') as well as in attributive functions as in example (11) where mother and child use the noun *banana* ('banana') to qualify a "petit suisse" dessert.

**(11) Julien 2;3 – MLU 1.92**

MOT 107:	regarde un petit suisse	'look a "petit suisse"'
MOT 108:	oh	'oh'

JUL 64:	epetisisis 'F petit suisse'	'F "petit suisse"'
MOT 109:	un petit suisse à la banane	'a banana "petit suisse"'
JUL 65:	nānā 'banane'	'banana'

Moreover, through the adult's discourse, children are exposed to non-specific reference and even generic reference, as can be seen in example (12).

(12) *Maxime 2;3 – MLU 1.45*

*Maxime and his mother have finished playing with a puzzle. They are putting the pieces away in the box*

MOT 166	et les têtes? et les têtes des lapins?	'and the heads? and the rabbit heads?'
MAX 156	wejelatetlapē 'où est elle la tête lapin?'	'where is the rabbit head'
MOT 168	les têtes. {XX} c'est ça les têtes	'the heads. {XX} 'that's the heads'
MAX 157	awē. la? 'ah ouais. 'là?'	'oh yeah. here?'
MOT 169	ça a des grandes oreilles un lapin hein?	'a rabbit has big ears, see?'
MAX 158	Wi 'oui'	'yes'
MOT 170	toi t'as des oreilles?	'you, do you have ears?'
MAX 159	Wi 'oui'	'yes'
MOT 171	elles sont où tes oreilles	'where are your ears'
MAX 160	la++latavy? 'la++la t'as vu?'	'here ++ here did you see?'
MOT 172	oui j'ai vu	'yes I saw'

The sequence begins with an utterance about some concrete pieces representing heads of rabbits. The identification of one piece gives the occasion to the mother to refer generically to the class of rabbits and their ears (*ça a des grandes oreilles un lapin hein*<sup>9</sup>, 'a rabbit has big ears, see?'). The second step for the mother is to bring up, through questioning, a specific referent, first in an indeterminate mode (*toi t'as des oreilles?* 'you, do you have ears?') before getting back to a specific one (*elles sont où tes oreilles*, 'where are your ears'). During this short sequence the mother indirectly shows to the child that the same noun can have three referential statuses.

Last, discussions about absent referents do emerge in the first stages of language acquisition (Ninio & Snow, 1996; Veneziano & Sinclair, 1995). Absent referents are very often familiar persons (like father, grandmother, friends), but they can also be less familiar



and fictional characters. In example (13) the child refers to two fictional characters, a prince and the mother of the main character, Poucelina.

**(13) Léa 2;2 MLU 2.4**

Léa and her mother are talking about a fictional character, Poucelina (Thumbelina)

LÉA 153 -	ελαῖπῆς		
	‘elle un prince’		‘she has a prince’
MOT 177 -	‘elle est grande Poucéline?’		‘is Thumbelina big?’
LÉA 154 -	m:		m:
LÉA 155 -	nṽelepṽtit. famamṽetutpṽtit.pṽtitfamamṽ		
	‘non elle est petite. sa maman est toute petite. petite sa maman’		‘no she is small. her mother is really small. small her mother’

The mastery of determiners for these different modes of reference has been differently explored in naturally occurring dialogue and in experimental settings. The next sections present first the main results of studies from experimental settings and then studies from naturally occurring dialogues.

### **3.2.1 Studies in experimental settings (narratives and other eliciting contexts)**

First studies on the acquisition of referential values of determiners in the ‘70s explored the contrast between definite and indefinite determiners. Maratsos (1976) found that young children do distinguish non-specific reference (marked by an indefinite determiner) from specific reference, but can use the definite determiner for first mention of a referent (see also Power & Dal Martello, 1986; Warden, 1976). Karmiloff-Smith (1979) explored, in a wide range of conditions, both production and comprehension of determiners by French speaking children. She concluded that definite and indefinite determiners develop in parallel and that the definite/indefinite contrast for specific referents is a late acquisition: at the onset, the indefinite is mainly used for labeling and the definite has a deictic value. Further on, definite determiners shift to exophoric values. In a third stage, indefinites are used to introduce new specific referents and anaphoric values appear for definites. These studies converge to consider that young children tend to make “egocentric” errors, that is they do not seem to take their interlocutor's knowledge into account and overuse definites in contexts where the

referent is new for the interlocutor. Schaeffer and Mathewson (2005) who found, in a dialogue elicitation task, that English speaking children tend to use 25% of definites for referents that are not mutually shared. These results could be consistent with the more general assumption that young children process reference egocentrically or lack a theory of mind (Perner, 1999). However, some studies show contradictory results and raise the question of influence of the experimental conditions on children's production (Emslie & Stevenson, 1981) or the interpretation of the acquisition sequence (Zehler & Brewer, 1982).

The developing contrast between determiners has also been investigated in narratives. Consistently with the idea that first determiners have exophoric values, Hickmann (2002) considers also that there is not a real contrast between definite and indefinite determiners for specific reference. In her data, 4 year olds use indefinite forms to introduce a new referent in labelling utterances. Other studies have investigated whether young children are sensitive to shared knowledge when telling a story. This issue has been addressed by contrasting shared knowledge and non-shared knowledge conditions, for example children telling a story to a blind-folded or to a "naïve" experimenter. Young children tend to use definite determiners to introduce referents even in the absence of shared knowledge (De Cat, 2013; de Weck & Jullien, 2013; Kail & Hickmann, 1992; Kail & Lopez, 1997; Schaeffer & Mathewson 2005). These results are not confirmed by other studies (Schafer & de Villiers, 2000; van Hout, Harrigan, & de Villiers, 2009) that did not find definite determiners for totally new referents in discourse. Van Hout et al. (2009) found that children do use definite determiners when the referent has been established in the discourse as one of a group. This suggests that the tendency to be coherent interferes with the determined or non-determined nature of the reference.

### 3.2.2 Determiners in naturally occurring dialogues

In contrast with studies in experimental contexts, studies on naturally occurring dialogues have shown that children under 3 exhibit a wide range of referential values and determiner distinctions that are relatively close to those of adult usage (De Cat, 2004b; Gundel et al., 2007; Rozendaal & Baker, 2008; Salazar Orvig, Marcos et al., 2008; Salazar Orvig, Marcos, et al., 2013).

Analyses conducted in every day conversational contexts with children under 3, (Gundel et al., 2007; Ochs Keenan & Shieffelin, 1976, for English and De Cat, 2004b for French), showed that young children acquire determiners with contrasted values. Rozendaal and Baker (2008), who compared French, Dutch, and English, found evidence of some degree of sensitivity in French-speaking children -- and to a lesser degree in English-speaking children, unlike Dutch ones -- to differences in shared knowledge: when indefinites appear and grow in frequency, they progressively replace fillers and omissions in the contexts of non-specific and non-referential uses as well as in first mentions of specific reference. Moreover, even if all studies show that non-mutually known referents are seldom mentioned in naturally occurring dialogues, French speaking children seem to prefer indefinites to introduce them (Rozendaal & Baker, 2008; Salazar Orvig, Marcos et al., 2013).

On the one hand, Salazar Orvig, Marcos et al. (2008; 2013) and Rozeendal & Baker (2008) confirmed that indefinite forms are clearly associated with labelling and non-specific referencing functions whereas definite ones are assigned the value of discourse given. If we take the example of French acquisition, it appears that, considering omissions and fillers as the first forms produced by children, definite articles emerge as the first determiners. They are mostly used for previously mentioned and mutually known referents. Children do not use definite determiners in contexts where indefinites would have been the only appropriate determiner, as can be observed in example (14):

(14) *Margaux 2;3 – MLU 2.62*

MAR 116	vaseseēsukula 'va chercher un chocolat'	'(I'm) going to look for a chocolate'
MER 130	oh, Margaux!	'oh Margaux!'
MAR 117	vaseseēsukula + vasesisukula + vasesisukula? 'va chercher Fchocolat+ va chercher Fchocolat + va chercher Fchocolat'	'(I'm) going to look for Fchocolate+ going to look for Fchocolate+ going to look for Fchocolate '
MER 131	ben non, t'as mangé assez de chocolat	'well no. you have eaten enough chocolate'
MAR 118	Si	yes
MER 132	Non	non
MAR 119	si {xxx}	yes {xxx}
MAR 120	jaæfil <she pulls a thread> '(il) y a Ffil'	'there is a thread'
MER 133	y a un fil?	'is there a thread?'
MAR 121	alamē <she looks at her hand> 'à la main'	'in the hand'
MER 134	y a un fil à la main?	'is there a thread in the hand?'

In this sequence, 3 different nouns ('*chocolat*', '*fil*' and '*main*' - '*chocolate*, *thread*' and '*hand*'- one of which is repeated 3 times in a second turn) illustrate 3 kinds of reference. The first corresponds to non-specific reference (any individual of the class of chocolates). In this case, the indefinite determiner alternates with a filler syllable. The second corresponds to the first mention of a referent. Even if the thread is perceptually available to her mother, the child is drawing the attention of her mother to it. The-child uses once again a filler and not a definite determiner. Finally, the third is a clearly mutually known referent. The child uses the definite determiner 'la'.

There are not many studies on the use of demonstrative determiners by children. In French demonstratives are among the last determiners to be acquired. For English, Gundel and colleagues (Gundel & Johnson, 2013; Gundel et al., 2007) observe on the contrary that demonstrative determiners are acquired before definite and indefinite articles, and that children use more demonstrative determiners than adults do. For them, this overuse of demonstrative determiners could be due to less sensitivity of children to relevance and scalar implicature<sup>10</sup>.

### **3.3 To summarize**

Quite distinct results can be observed from these different sets of studies. Studies on narratives consider that anaphoric reference is a late acquisition and that first uses of referring expressions and determiners are deictic and/or egocentric. Studies on naturally occurring dialogues have opposite results and show a very early competence in the use of referring expressions and determiners. Experimental settings show the role of prior context and point out the difficulties that children can experience in dealing with perceptual availability.

Conflicting results could be due to the differences of dialogical contexts. It has been often stressed that dialogues provide children with a scaffolding context in which they are not faced with challenges such as the absence of mutual knowledge and diverging perspectives which would reveal cognitive difficulties. This issue is addressed in the next sections.

## **4. The influence of dialogue**

A significant factor that can account for the divergence between results in experimental settings and naturally occurring dialogues is the dialogical/interactional nature of the latter, which has so far not been thoroughly explored, either in experimental settings or in familiar interactions.

Researchers consider the dialogical dimension of reference in different ways. Cognitive models of reference (Ariel, 1988; Gundel et al., 1993, Cornish 1999, Charolles 2002) assume that reference necessarily involves projecting the interlocutors representation of the ongoing discourse and context, his or her knowledge, beliefs, expectations, needs and intentions. This projection of other's representation takes place in actual interaction. Thus reference like other aspects of discourse is a matter of common construction (Bakhtin, 1982), consisting of the mutual contributions of the interlocutors that ensure the common ground (H.H. Clark, 1996; E.V. Clark, 2014). In the conversation analysis framework (Fox, 1987;

Pekarek Doehler, 2001; Pekarek, 1999), referring expressions are considered as resources speakers use in interaction for positioning and/or displaying their understanding of the conversational sequence. Finally, referring expressions are never produced in isolation. They are always produced within activities, that pertain to what Wittgenstein called language games "consisting of language and the actions into which it is interwoven" (Wittgenstein, 1953: §7). These activities generate specific configurations of language use, usually called discourse genres (Bakhtin, 1986). Our contention is that young children acquire values and uses of referring expressions through these genres and activities. We will successively examine the way these aspects of language use influence young children's use of referring expressions.

#### **4.1 The influence of the interlocutors' discourse**

In a naturally occurring dialogue corpus (the DIAREF corpus) more than 50% of the children's referents were immediately mentioned by the interlocutor in the same topical sequence. This prevalence grew to more than 70% when it came to 3<sup>rd</sup>PPs. Together with the fact that the referent is in focus, it is necessary to consider the possible influence of its previous encodings. Repetition and question-answer relations are among the most frequent issues investigated. For instance, in dialogues, repetition and answer can account for a significant proportion of children's referring expressions (more than 20% in the DIAREF corpus. see Salazar Orvig, de Weck. et al., in preparation; Salazar Orvig & Morgenstern, 2015).

##### ***Questions***

Cameron-Faulkner, Lieven and Tomasello (2003) showed that questions account for 30% of the utterances mothers address to their two year old children. As mentioned in section 3.1.3, some experimental studies have addressed the influence of questions in children's choice of lexical vs. pronominal and/or null forms. Most of these studies (Campbell et al.,

2000; Matthews et al., 2006; Wittek & Tomasello, 2005, for English and for German) contrasted predicate focused questions (*What did X do?*) and sentence focused questions (*What happened?*). They showed that English and German speaking children aged 2;6 to 3;6 preferred null forms or pronouns in the first case and explicit or strong arguments in the second. Matthews et al. showed that even very young children (2 years old) were sensitive to the focus of the question (subject or predicate focused) suggesting an early competence for determining topic and focus in discourse.

Considering that previous studies did not allow for disentangling the respective influence of discursive and perceptual cues, Serratrice (2008) designed a study to assess the weight of each factor (for children aged 3, 5 and 6). Even if six year olds still experienced difficulties dealing with perceptual cues when not scaffolded by discourse cues, she confirmed that children (ages 3,5 and 6) were sensitive to the type of questions (sentence vs. predicate focus question; see also Salomo et al., 2010 and Salomo et al., 2011). This influence did not depend on whether or not the target referent was encoded in the question.

Let's turn to the influence of questions in naturally occurring dialogues. In the DIAREF corpus, 13% of the referring expressions were produced by children when answering a question. However, nouns and pronouns did not appear in the same position: Nouns were used when elicited by the question, while pronouns were most frequently used when the referent was the topic of the question, as illustrated in (15),

**(15) Pauline2 – 2;3 – MLU 2.52**

Mot -	qu'est-ce (que) tu veux manger maint(e)nant?	'what do you want to eat now?'
Pau -	yn bʁioʃ	
	'une brioche'	'a brioche'
Mot -	elle est où la brioche?	'where is the brioche?'
Pau -	ɛlədədã	
	'elle est dedans!'	'it's inside'

The first question elicits a noun '*brioche*' in focus position, whereas in the second one, the referent is the topic, and the child answers with a simple clitic pronoun.

## ***Repetition***

Repetition fulfills multiple functions in first dialogues (Benoit, 1982; Clark & Bernicot, 2008; Keenan, 1977; Keenan & Klein, 1975; Salazar Orvig, 2000), including cohesion, ratification and establishing common ground.

### ***(16) Léa – 2;2 – MLU 2.4***

In a discussion about the child's toys, her mother shows a baby boy;

MOT 85	et ça c'est?	'and that's?'
LEA 70	bebe 'bébé'	'baby'
MOT 86	bon (...)	'good'
(...)		
	the mother shows the doll to the child again,	
MOT 109	est-ce que tu trouves qu'il est propre?	'do you think he is clean?'
LÉA 86	wi 'oui'	'yes'
MOT 110	non, mais regarde comme il est sale, tu lui as pas donné son bain? hein.	'no. but look how dirty he is. you haven't given him a bath, have you?'
LEA 87	u? où?	'where?'
MOT 111	il est sale là. + regarde là	'he is dirty there. + look there'
LEA 88	wi ilesal 'oui, il est sale'	'yes he is dirty'

In LÉA 88 the child reproduces her mother's use of the 3<sup>rd</sup>PP. However, repetition does not affect the use of nouns and pronouns in the same manner: other- repetition accounts for 13% of the nouns and only 9% of 3<sup>rd</sup> PPs.

## **4.2 Positioning**

Example (16) above also shows that repetition has another function in dialogue. In this case, it conveys an acknowledgement of the mother's assessment after a short disagreement.

Shifting referring expressions can also convey other sorts of positioning, like opposition or perspective confrontations. This is the case in next example.

### ***(17) Cécile – 1;11 – MLU 2.83***

Fat 48	est-ce que tu crois que la vache elle va rentrer dans la voiture?	'do you think that the cow will go into the car?'
Céc 39	nǝ 'non'	'no'
Fat 49	c'est pas permis ou elle est trop grosse?	'it isn't allowed or is she too big?'
Céc 40	i i i pœpa mǝte 'i(l) i(l) i(l) peut pas monter'	'it it it can't go inside'
Fat 50	ah i(l) peut pas monter	'oh it can't go inside'



Céc 41	i 'i(l)'	'It'
Fat 51	ben c'est pas possible elle est trop grosse	well it's not possible. It's too big
Céc 42	wi 'oui'	'yes'
Fat 52	il faudrait que ce soit un bébé peut-être. un bébé de la vache peut-être qu'il pourrait rentrer, mais la vache est trop grosse. et le bonhomme tu crois qu'il peut rentrer le bonhomme?	'it'd better be a baby maybe. a baby cow would probably enter. but the cow is too big. and the man, do you think that he can fit in, the man?'
Céc 43	øø . wi wi Ipœpa môte ləbônəm. bônəm pœvātœ 'euh euh oui oui. il peut pas monter le bonhomme. bonhomme peut rentrer'	'hmm. yes yes. he cannot get in, the man. man can fit in'
Fat 53	il est un peu gros lui	'he is a bit big'.
Céc 44	ieĕpœgkø i(l) est un peu gros	'he is a bit big'

In this sequence we can observe how nouns (alone or in dislocation) are used for the two in-focus referents: the cow and the man. In Céc 43 the child uses the dislocation ('*il ... le bonhomme*', '*he ... the man*') when she gives a negative answer to her father, and once again the noun when adopting the opposite position. On the other hand, when her answers convey agreement (in Céc 40 and in Céc 44), she uses a 3<sup>rd</sup>PP .

Salazar Orvig, Marcos et al. (2010b) investigated the choice of referring expressions for subjects in dialogue. 3<sup>rd</sup>PP, nouns and dislocations and strong demonstratives were categorized according to the move performed by their current utterance with respect to the previous discourse. Results showed that 3<sup>rd</sup>PPs were mainly used for plain continuity whereas lexical forms (alone or dislocated) and strong demonstratives were preferred when the utterance drew a contrast with the preceding forms. This kind of use was also observed by Bittner (2007) for German-speaking children, who used complex definite phrases in the context of emphasis or contrast.

### 4.3 Discourse genres and activities

The influence of genres and activities in the choice of forms and expressions has been widely addressed (see Fox, 1987; Gundel, Hedberg, & Zacharski, 1988). Children experience language and discourse in the context of these activities and discourse genres (François, 1984; Nelson, 2007). They are immersed from birth in typical interactions that have become

routines (which Bruner coined under the name of formats (Bruner, 1984). These « transactional contingent patterns » provide a context in which child directed speech makes sense and are the basis for early language acquisition (Ninio & Bruner, 1978).

The influence of activities on children's productions has mostly been demonstrated for the acquisition of speech acts or of the lexicon (Gleason, Phillips, Ely, & Zaretsky, 2009; Leaper & Gleason, 1996, *inter alia.*) and syntax (Berman & Nir-Sagiv, 2004; Chenu, Jisa, & Mazur-Palandre, 2012). Most studies on the impact of speech genres and activities on children's use of referring expressions concern older children (see Mazur-Palandre & Jisa, 2012).

Investigation for young children has been conducted in the framework of the DIAREF project (Salazar Orvig, Marcos, Heurdier & da Silva, 2018; de Weck, Hassan, Heurdier, Klein & Nashawati submitted). Activities involve various types of topics and contrasted ways of talking about the referents as in the two following examples:

**(18) Olga - 2;3 – MLU: 2.7**

*Olga and her mother are playing with a puzzle*

Olg -78	sekwa? “c'est quoi?»	“what is it?”
Mot- 79-	ça c'est un arrosoir	“that, it's a watering can”
Olg 79 -	□ēnakoɯwə ‘un arrosoir’	‘a watering can’
Mot 80 -	on le met où l'arrosoir?	‘where do we put the watering can?’ <sup>11</sup>
Olg 80	ela eela laɯzoɯwə ‘est là Fesɯ là l'arrosoir’	‘(it) is there, Fis there the watering can’
Mot 81 -	voilà il est là	‘ok it's there’

**(19) Alice, 1;11 MLU 2.2**

*Alice and her mother are playing with a doll*

Mot 46	hm. voilà elle est assise	‘hm. there it is. she is sitting’
MOT 47	tu as vu elle a les yeux ouverts quand elle est assise	‘you see. she opens her eyes when she is sitting’
ALI 48	nɔ̃ ‘non’	‘no’
ALI 49	awi! ‘ah oui!’	‘oh yes!’
ALI 50	laẽfapo ‘(e)ll(e) a un chapeau’	‘she has a hat’

In example (18) labelling organizes the game. In the second example (19) mother and child are involved in the description of a doll. Even if in both cases referents are inanimate

objects, neither mother nor child use the same referring expressions. In the first case (18) they use the clitic demonstrative *c'* (in the construction “C’est+X”). Heurdier, da Silva, Le Mené, & Salazar Orvig (2012) showed that this clitic demonstrative was much more frequent in such activities as picture book reading and games on iconic material than in activities involving object manipulation. This high frequency was linked to the preference for labelling (Salazar Orvig et al. submitted). On the other hand, description was the preferred genre for first uses of 3<sup>rd</sup>PPs (in the DIAREF corpus 67% of children’s 3<sup>rd</sup> PPs) as can be seen in example (19).

These results suggest that activities and genres influence the use of language at different levels: they frame a structured order of sequences and speech acts; they determine the structure of the utterances and the forms used, they entail different communication strategies (Leaper & Gleason, 1996) and specific perspectives on participants and objects that affect topic management. In that sense they frame such factors as accessibility and topic management, in the choice of referential expressions.

#### **4.4 To summarize**

Observations on the impact of dialogue suggest that, together with informativeness or accessibility, the choice of referring expressions is determined by dialogical factors. When a speaker encodes a referent, he/she builds on what has already been said and on what is expected, takes a stance with respect to the interlocutors’ discursive contribution, accepts or changes the other’s topic; he/she aligns with the interlocutors’ perspective or not while computing or projecting the interlocutors’ knowledge. The weight of these dialogical factors is at least as significant as in adult’s discourse. Therefore they give us a hint of how children build early competences.

## 5. Accounting for the paradox

The review of children's uses of referring expressions presents a paradoxical landscape. Most studies of young children show a rather precocious competence in the use of referring expressions, whereas studies on narratives and other experimental settings tend to show that mastering the values and use of referring expressions is not achieved before age 9. This is all the more puzzling given that usually experimental studies involve older children than do naturalistic studies. As the cognitive differences between young children and older children and adults are undeniable, we have to consider that children's linguistic behaviors in these different situations are not analogous. Several factors<sup>12</sup> can be identified that may account for this paradox, including the conception of reference, the representation of the child's cognitive development and the child's involvement in the co-construction of reference.

The conflicting results arise partly from the contrast between theoretical conceptions of reference. Initial studies, mostly on narratives, followed a textualist approach to reference and approached the issue from the perspective of cohesion and text management (de Weck, 1991; Hickmann, 1991; Karmiloff-Smith, 1979, 1985). The extra vs. intra-discursive nature of the referent became the main criterion for capturing the meaning of children's linguistic devices. Furthermore, textualist studies considered that children build progressively the semantic meaning of referring expressions from a deictic default value of plain "grammatical" devices, to anaphoric values (when children master the management of long discourse and competing referents). In the meantime, co-referential chains are not considered as anaphoric but as the reiteration of deictic reference.

On the other hand, studies on naturally occurring dialogues (Gundel and Johnson 2013, Allen et al; 2008, Salazar Orvig 2010a *inter alia*) have been conducted within cognitive conceptions of reference and the cognitive status of the referent is the key feature used to assess the way children use referring expressions. Example (8) can illustrate this distinction:

### (8) Lisa 1;11 – MLU: 1.56

Lisa is playing with a puzzle, her father is watching her. She places the pieces on the board but does not put them in the right place. Having done so, she looks at the puzzle.

Lis -	alɛfini	
	'ah! l'est fini'	'ah! it's finished'
Fat -	<smiling> tu crois que c'est fini? tu crois que c'est	'you think it's finished? you think that's the way it's
	comme ça que ça va Lisa?	supposed to be, Lisa?'

Within a textualist approach, the child's use of the 3<sup>rd</sup> person clitic pronoun l' (*it*) to first mention the puzzle, would be considered deictic/exophoric, overlooking the fact that this referent had been under joint attention for a long moment. Within a cognitive perspective, the fact that the puzzle was under joint attention would characterize the use of the pronoun as (proto-)anaphoric. This interpretation would be confirmed by the father's use of the clitic demonstrative *c'* (*'it'*) showing that reference was intersubjectively shared even before the child's first mention.

Moreover, the fact that, in naturally occurring dialogues, most uses of clitic pronouns for (the extremely rare cases of) first mentions correspond to referents previously under joint attention, is an argument against the conception of deixis as the default value of 3<sup>rd</sup> person pronouns (Salazar Orvig, Hasan et al. 2006; Salazar Orvig, Marcos et al., 2010a).

From the moment studies on child language adopted a cognitive perspective, the issue at stake became whether children make the appropriate choice of referring expressions, and how and to what extent they assess the interlocutors' needs, mainly as a function of the perceptual and discursive context. This position assumes that (a) children have the possibility to make referential choices within the same paradigms as adults and (b) referring expressions children use have adult-like meanings. For studies that clearly acknowledge these assumptions (De Cat, 2004a, 2004b, 2013; Gundel & Johnson, 2013; Gundel et al., 2007; Schaeffer & Matthewson, 2005, *inter alia*), usually in the Universal Grammar theoretical framework, the issue at stake is whether children have the cognitive abilities that allow them to assess interlocutor's needs. According to these authors, when children use referring expressions inappropriately, they fail to correctly assess their interlocutor's memory and

attentional state. However, results and interpretations can be controversial. Schaeffer and Matthewson consider that younger children still lack the pragmatic Concept of Non-Shared Assumptions that would allow them to adequately use referring expressions. As de Cat stressed (2013), following Schafer & de Villiers (2000) and van Hout et al. (2009), the significant variation in children's rates of egocentric errors could be accounted for by aspects of their cognitive development whether they already have a Theory of Mind (Perner, 1999).

However, de Cat (2013) found (for determiners) no difference in the choice of referring expressions between children that succeeded at a Theory of Mind test and those who failed. For her, the difficulty rests more on the inability to monitor the difference of perspective between interlocutors. Gundel & Johnson (2013) discuss Schaeffer & Mathewson results in two ways. They consider that their explanations are inconsistent with the cognitive status of the referents in the actual context of their experiment and with the fact that children rarely make mistakes using the definite article in naturally occurring dialogues. For Gundel et al. (2007) we need to consider the use of referring expressions at two levels: the first level involves the ability to assess the cognitive status of the referent and the second one the ability to assess how much information is relevant for the interlocutor. This first level only involves implicit first level mind reading abilities such as understanding others' intentions and mental states. Young children use pronouns appropriately without needing to reason about the epistemic state of the interlocutor and to assess how much information he/she needs. These last abilities correspond to the second stage of development of theory of mind which begins around 4. Moreover, Gundel & Johnson (2013) recall that in naturally occurring dialogues, young children are able to assess the interlocutor's cognitive states such as familiarity and attention "but they are not yet sensitive to making the choice based on pragmatic inferences that could arise when irrelevant information is provided".

Yet, these explanations do not consider the fact that younger children (under 2) express impressive social–cognitive skills and knowledge. Children are sensitive to more than just intentions and emotions. They are sensitive to the interlocutor’s goals and needs, to shared experience, to disengagement and need for update as well as emotions and preferences of the interlocutors (Liszkowski, Carpenter, Striano, & Tomasello, 2006; Moll, Richter, Carpenter, & Tomasello, 2008; O’Neill, 1996; *inter alia*). As O’Neill (2005) puts it, the matter at stake is not really, for infants, whether the information is familiar to their interlocutor but whether it is relevant in the context of the ongoing interaction. These findings on younger children non-verbal behavior suggest earlier socio-cognitive competence than experimental studies based on language test would expect.

It seems therefore necessary to examine the interactional conditions in which children learn and use first referring expressions. Three main complementary accounts can be invoked: the first concerns the formal influence of the adults’ discourse; the second considers the influence of discursive sequences and the third considers the conditions of learning in dialogue. The influence of previously mentioned referents in the choice of referring expressions in both naturally occurring and experimental dialogues can seem contradictory with the assumption that very young children are not able to assess the informational needs of their interlocutors. Matthews et al. (2006) considered the possibility that the impact of previous mentions in the choice of the referring expressions could be explained as the expression of a mechanical alignment to the interlocutors’ model of situation (Pickering & Garrod, 2004), constructed by priming rather than by an assessment of the interlocutors’ knowledge. In this vein, repetition could be considered as a vehicle of the acquisition of anaphoric reference. However, its relative high frequency cannot account for all children’s uses. Moreover, in an analysis of subject function, Salazar Orvig, Marcos et al. (2010b) showed that more than 50% of 3<sup>rd</sup>PPs did not follow a 3<sup>rd</sup>PP antecedent by the adult. Syntactic

priming did not explain children's uses. Other factors, such as contrast in dialogue, contributed to the choice of referring expressions.

Therefore the question remains of how children learn that a pronoun is expected once a referent has been introduced. Observations on the role of genres and activities can give us a hint of how to solve the paradox. If we consider that children learn how to use referring expressions through the various language games in which they are involved, we can hypothesize that they incorporate recurrent discursive frames linking experience and speech. Children could thus begin by grasping pragmatic configurations (Nelson, 2007) that fit routinized situations: for example describing a referent in a second move after having introduced it. These formats (Bruner, 1984) are privileged contexts that allow change and variation in a secured context. This could account for the fact that at the onset, children do not need to assess the information needed by the interlocutors. And, as children's involvement in dialogue is not passive, experience of unclear reference seems to help them learning how to adjust the use of referring expressions (Matthews, Butcher, Lieven, & Tomasello, 2012). The development of reference could, thus, consist of generalization, abstraction and rectification processes from usage based formats towards productive paradigmatic choices according to the interlocutor's knowledge and perspective.

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## Appendix

### The DIAREF corpus

The indication DIAREF Corpus in this chapter refers here to the younger children data (under 3) of the DIAREF project . It is an open data base which is continuously incremented with new coded sessions. These data come from different previous research projects: Cross-sectional corpora come from a research on early speech acts (Marcos, Ryckebusch, & Rabain-Jamin, 2003), another on the influence of type of care on language acquisition (Marcos, et al., 2004) the longitudinal corpus was gathered for a research on the development of dialogue (Salazar Orvig, 2003); the COLAJE project (Morgenstern & Parris, 2010); a doctoral dissertation (Nashawati, 2010).

The 28 children currently included in the DIAREF corpus are aged between 1;10 and 2;06. This corpus includes 5 longitudinal data (from 1;10 to 2;6) and 23 cross-sectional data at two age groups (1;11 and 2;3). As the linguistic development is not strictly correlated to age, data is analyzed according to their Mean Length of utterance (MLU) which gives a hint of linguistic development. Data have been gathered in 3 groups (GR1: from 1.30 to 2; Gr 2 from 2.01 to 2.5 and Gr3 from 2.51 onwards)

## Notes

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<sup>1</sup> Empirical data in French is drawn from the DIAREF project. See Appendix for details.

<sup>2</sup> In fact, at this stage it is not accurate to speak of “nouns” or “verbs” (or any other grammatical category) as there are no specific morphological paradigms to distinguish them.

<sup>3</sup> The captions of examples indicate the name of the child, his/her age (years; months) and the Mean Length of Utterance (MLU) for the cited session. Children’s utterances are transcribed phonetically, the interpretation in French is given in inverted commas. The English translation, in inverted commas, appears in the right-hand column. Braces indicate uncertain transcriptions or alternative interpretations. X stands for uninterpretable or inaudible segments, the sign + indicates a pause. In both interpretations and translations, ‘F’ stands for a filler (Peters, 2000; Veneziano, 2003).

<sup>4</sup> Filler syllables can also be found in pre-nominal positions (see section 3.2.2). For discussion of the proto-morphological status of these filler syllables see Demuth & McCullough, 2009; Dressler, Kilani-Schoch, & Klampfer, 2003; Kilani-Schoch & Dressler, 2000; Peters, 2000; Veneziano, 2003; Veneziano & Sinclair, 2000.

<sup>5</sup> 3<sup>rd</sup> person (clitic) pronouns will be referred to as 3<sup>rd</sup>PPs. In French data, 3<sup>rd</sup> person strong pronouns are not very frequent in child language and they will not be specifically addressed in this chapter.

<sup>6</sup> For French see Hamann, Rizzi, & Frauenfelder, 1996; Jakubowicz & Rigaut, 1997; Salazar Orvig, Marcos et al., 2010a; for both French and English Girouard, Ricard & Gouin Decarie 1997; Perez-Leroux, Pirvulescu, & Roberge, 2008; Pérez-Leroux, Pirvulescu, & Roberge, 2011; Pirvulescu, 2006.

<sup>7</sup> All along this chapter we use some debatable terms “to prefer” “to choose”, “preferred” and “choice” that could imply that children, and adults, consciously pick a referring expression and discard others. As we stand for a far more conservative position and do not attribute such conscious behavior to speakers, these terms should be read as describing a purely statistical reality.

<sup>8</sup> for example .04% for adults and children in the DIAREF corpus)

<sup>9</sup> This kind of dislocation is a frequent form to express generic reference in French (Charolles, 2002)

<sup>10</sup> [As demonstrative determiners are not very frequent in young children discourse, this phenomenon is not observed in French naturally occurring dialogues. However, if this analysis was to be transposed to French it would concern possible overuses of definite determiners.](#)

<sup>11</sup> The object in MOT 80 is expressed by a dislocated structure, with a clitic pronoun before the verb and the noun after the verb.

<sup>12</sup> These apparent contradictions have been also often explained by methodological differences (Hickmann, 2002; Hickmann et al. in press; Allen et al. in press) that cannot be addressed here. They can concern the experimental design and the implementation of the observation ((Bamberg, 1986; De Cat, 2013; Emslie & Stevenson, 1981), as well as linguistic variables: what is included under “overt” arguments? are fillers considered? what is missed when wider categories group different pronouns or determiners? and so on...