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Constructing verb paradigms in French: adult construals and emerging grammatical contrasts

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Abstract Children acquiring French at first use just one form of each verb, where the meaning identifies only the event-type. How and when do they add additional forms, with the appropriate meanings? In this paper, we explore the information available to children from adult reformulations of these early verb-form uses, and show how adult construals contribute to children's learning to distinguish between the homophonous infinitival (*donner* 'give-Inf') and participial (*donné* 'give-PP') forms, both /done/, of class 1 verbs. We argue that conversational exchanges, with the construals adults contribute, enable children to differentiate the meanings of homophonous forms, and so begin to construct verb paradigms.

Keywords Early verbs · French · Homophony · Reformulations · Acquisition

1 Introduction

How do children assign meanings to forms when the same form carries several contrasting meanings? This problem is one that children face at a number of points when acquiring a language. In English, for instance, they encounter homophones like *pear* versus *pair*, or *bat* [to hit with] versus *bat* [that flies], as well as noun/verb pairs like *brush* versus *to brush*, or *drop* versus *to drop*. In French, a language with many more homophonous forms, the problem is more acute, especially within verb paradigms. Most French verbs belong to the highly regular class 1, a conjugation identified by infinitives ending in *-er*, where some of the commonest forms of such verbs are homophonous. For example, in the verb 'to fall' (especially common in

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speech with young children), the infinitive (*tomber*) and the past participle (*tombé*) are both pronounced /tɔ̃be/. But homophones differ in meaning, and these meanings are highlighted by the syntactic constructions they appear in. The problem we address in this paper is how children acquiring French as a first language can make use of the meaning expressed on each occasion by an adult speaker, and thereby come to assign and to express the relevant meaning in context.

We assume that children receive extensive information and feedback from conversational exchanges as they interact with adults. That is, we assume a social interactive account of language acquisition, in contrast to an innatist position in which children's rule-governed acquisition is triggered by the input they hear. Recent research on acquisition has shown that the information children receive from interacting with adults is adequate for learning, and functions effectively to display the options available in the language being acquired (e.g., Chouinard and Clark 2003; MacWhinney 2004; see also Brown 1998; Küntay and Slobin 2002; Wootton 1997). Moreover, recent research has shown that children attend to and make use of the relative frequencies of particular forms and constructions in adult speech (e.g., Bloom et al. 1980; Chenu and Jisa 2006; de Villiers 1985; Naigles and Hoff-Ginsburg 1998). Finally, within morphology, differences in meaning can be signalled by differences in form or by differences in the linguistic constructions in which a form is used. If children grasp this pragmatic principle early, and they do (Clark 1987, 1988, 1990), it offers a route for learning how specific meanings are expressed within a verb paradigm, and hence how they are distinguished from one another—even when the forms are homophonous.

1.1 Homophonous infinitives and past participles

Children acquiring French face a particular problem because of the widespread homophony in the language, and in particular in verb conjugations. In verb paradigms, there may be as many as 55 distinct forms, but homophony reduces these to around 20 because so many sound alike. (Their written forms remain distinct.) For instance, the past participle (*tombé* 'fall-PP'), and the infinitive (*tomber* 'fall-Inf'), are homophonous for all verbs traditionally placed in class 1, the *-er* paradigm that encompasses approximately 90% of all verbs in French. Class 2, with verbs in *-ir*, also regular, contains about 300 verbs, while class 3 provides a home for another 400 or so, primarily those with infinitives in *-oir* and *-re*, in addition to other irregular verbs (Grevisse and Goosse 2008; see also New et al. 2001). Class 3 contains several verbs that are very frequent, particularly in the language spoken to young children. As a result, children use these early and often (see, e.g., Clark 1985; Cohen 1969; Grégoire 1937–1947; Guillaume 1927). In more recent accounts of the structure of verb paradigms in French, verbs are typically grouped into two major classes: the first comprising class 1 verbs, including several subclasses, and the second comprising classes 2 and 3, typically organized into multiple subclasses (e.g., Carstairs-McCarthy 1992; Le Goffic 1997; Dressler et al. 2006). We will distinguish class 1 verbs (those with an infinitive in *-er*) from class 3 verbs (the remainder) in the analyses that follow. Some morphological analyses have proposed that for each verb, there are *reference forms* that 'give' the verb class, or subclass

(Carstairs-McCarthy 1992). However, use of such forms depends on the speaker's already knowing what the verb classes are in a language. Young children, though, have to discover the verb paradigms for their language, and they start out by using just one form of a verb, in context, and then extending that to further instances of similar events.

Our primary focus in this paper will be on how children come to distinguish the meanings of certain homophonous forms produced during the one-word stage, in the acquisition of French. Even if children have a more specific meaning in mind than just the event-type when they use a verb form in a single-word utterance, any more precise meaning relative to the occurrence of the event may be hard to discern. In adult speech, though, homophonous verb forms are readily distinguished by the constructions they appear in. Adults produce the verb form /dɔne/, for example, as a past participle in combination with auxiliary verbs like *avoir* 'have-Inf' or *être* 'be-Inf' along with clitic subject pronouns like *je* 'I' or *vous* 'you-pl', and as an infinitive in combination with modals like *vouloir* 'want-Inf' or the periphrastic future *aller* 'go-Inf'. The elements adjacent to the verb form in each case identify the particular meaning intended on each occasion, as shown by the examples in (1)–(3):

(1)   **J'ai donné** ce livre à mon frère.
       I have-Aux-1Psg-Pres give-PP Dem. book to my brother
       = 'I gave that book to my brother'

(2)   **Il veut donner** ce livre-là à son frère.
       He want-3Psg-Pres give-Inf Dem. book-there to his brother
       = 'He wants to give that book to his brother'

(3)   **Elle va donner** un livre à son père.
       She go-3Psg-Pres give-Inf a book to her father
       = 'She's going to give her father a book'

The construction the verb form appears in identifies the meaning that that form carries on that occasion, and hence whether it refers to an anticipated (future), or past event.

How do children acquiring French sort out the meanings carried by a form like /tɔ̃be/ (e.g., 'fall-PP' or 'fall-Inf'), /sote/ (e.g., 'jump-PP' or 'jump-Inf'), or /dɔne/ (e.g., 'give-PP' or 'give-Inf')? We propose that they draw on information available in their interactions with adults, namely the adults' construals of child verb uses in context.

In the early stages of acquisition, adults frequently take up incomplete or erroneous child uses and, in checking on just what the child meant, offer a conventional version of what they think the child intended to say (Chouinard and Clark 2003; see also Saxton 2000; Saxton et al. 2005; Kilani-Schoch et al. 2009). These construals provide different syntactic contexts for the relevant temporal meanings of verbs in context, and so indicate to the child that the form /sote/, for example, differs in meaning depending on the occasion of use. Each meaning is accompanied by different arrays of grammatical morphemes in adult speech.

In addition to adult construals of homophonous class 1 verb form uses, children can also draw on what they are learning about verb form meanings from verbs in class 2 and 3, where the infinitival and participial forms are not homophonous. Consider verb forms like *finir* 'finish-Inf' versus *fini* 'finish-PP', *sortir* 'go-out-Inf' versus *sorti* 'go-out-PP', *boire* 'drink-Inf' versus *bu* 'drink-PP', or *s'asseoir* 'sit-Inf' versus *assis* 'sit-PP'. These verbs consistently distinguish their infinitives from their past participles, unlike class 1 verbs.

1.2 Early verb meanings

When children first produce verbs, they typically produce only a single form of each verb, regardless of context. That is, they do not start out by choosing among different forms of a verb depending on factors like person, number, or tense. Their initial reliance on a single verb form is typical for children acquiring both minimally inflected languages like English (e.g., Tomasello 1992) as well as more richly inflected languages like Turkish, Hebrew, Spanish, Hungarian, or Italian (e.g., Aksu-Koç 1988; Berman and Armon-Lotem 1996; Gathercole et al. 1999; MacWhinney 1978; Pizzuto and Caselli 1992; see further Slobin 1985–1997). For example, children acquiring English might start by only using the form *fall* (Inf ~ 1Psg/2Psg-Pres)—whenever they themselves have just fallen down, as they drop something, and when they plan to drop something in the future. Children acquiring Spanish might only use *cayó* (fall-3sg-PastPret) [(he/she/it) fell] in the same three settings, while children learning French typically use the form /tɔ̃be/ (fall-Inf ~ fall-PP). This pattern of early usage strongly suggests that children begin by associating just the event-type to a specific verb form: any kind of falling, regardless of how it is related in time to the utterance, is tagged as *fall* by children acquiring English, as *cayó* by children acquiring Spanish, and as /tɔ̃be/ by children acquiring French. They first link the event-type, regardless of its timing, to the verb form chosen, *as the meaning* of that form. This explains why children generally manage to identify the relevant event type (see Childers 2011; Huttenlocher et al. 1983; Naigles et al. 2009; Tomasello 1992) even though they may be using the wrong form of the verb.[1]

After establishing what kind of event a verb picks out, the next step children have to take is to learn that one can indicate that the event being talked about is, for example, anticipated, currently ongoing, or already completed. That is, children learn that part of the meaning expressed by a verb form in context—i.e., in a particular construction, and with particular inflections added—is temporal, and so marks the relation in time between the speaker's utterance about the event and the point in time at which that event occurs. Other dimensions of meaning, expressed concurrently, are eventually added to the initial event-type meaning as well, including information about person and number, aspect, and gender.

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[1] Diary studies (e.g., Naigles et al. 2009; Tomasello 1992), however, typically contain no record of how adults use the relevant verbs, nor of how adults respond to child uses in conversational exchanges.

In establishing how to use different forms of the same verb, children need, among other things, to attend to the correlations between event-times and utterance-times. One source for this, we propose, is provided by adults within conversational exchanges whenever they offer a reformulation or construal for a child's utterance. This allows us to check on how children might arrive at appropriate assignments of temporal meaning(s) to verb forms in French by looking at (a) the timing of children's utterances relative to specific events, and (b) adult construals of those child utterances, using the same verb, where adults produce the full verb forms and constructions relevant to the event and timing just picked out by the child's verb form.

1.3 Sources of information

Adults offer two critical sources of information about class 1 verb-form meanings from the earliest stages onwards: (a) their construals of children's class 1 verb uses, and (b) their uses of verbs from class 3, where the relevant (non-homophonous) forms share the same constructions as class 1 verb forms with the infinitive versus the past participle. Both sources of information support an analysis for the child in which class 1 verb forms like /sote/ express two meanings—'jump-PP' and 'jump-Inf'—relevant to the timing of the utterance and the event. In this paper, we explore the consistency of adult construals for child verbs in context, together with adult uses of class 3 verbs, also in context, with the same constructions. Our analyses are based on longitudinal videotaped recordings of two children acquiring French as their first language (Veneziano 2003; Veneziano and Parisse 2010).

Our hypothesis is that children make use of adult interpretations of their utterances by aligning different constructions with each temporal meaning. This allows them to sort out certain homophonous verb forms in context. For this to be effective, adults must offer (a) infinitival constructions for class 1 verbs in contexts where the child is anticipating or predicting an event; (b) infinitival or present tense constructions marking continuity in contexts where the child is talking about an ongoing event; but (c) past participial forms in contexts where the child is talking about events that have just happened. In context, then, the adult should construe children's early verb uses as anticipatory when they occur just before the relevant activity, and ongoing when they occur at the same time as the activity referred to; but as referring to an immediately past event when they follow the activity referred to. That is, the adult's construal should be consistent with *the timing* of the child's utterance relative to the event in question. These relations in adult speech are critical for the child to distinguish the two meanings carried by homophonous infinitival and participial forms in class 1 verbs.

In order to assess adult construals against what the child says at the one-word stage, one needs detailed information for each occasion for children's early verb uses. In the present study, this was supplied by the videotaped record of what was happening during each recording session with the child. We checked the consistency of adult construals by looking at children's utterances containing verbs from both class 1 and class 3, and at the events denoted by those verbs. This allowed us to

check adult construals as well as child utterances against the relevant events in context.

2 The data

In tracking the emergence of specific form-meaning combinations up to the point where children begin to use clitic subjects and auxiliary verbs, we examined (a) all the child-initiated verb uses in longitudinal data, collected twice a month in hour-long videotaped recording sessions, from two children, Camille and Gaël, acquiring French in Geneva, between age 1;6 and 2;3 (Veneziano 2003; Veneziano and Parisse 2010); (b) the physical context for each exchange with the timing of each child-utterance relative to the pertinent event; and (c) whether the adult offered a reformulation of the child's utterance, along with the form that the adult construal took.

The analyses in this paper focus on child-initiated exchanges from the first half-hour of each video-recording. Child-initiated exchanges in early development typically account for up to two-thirds of adult-child exchanges (Bloom et al. 1996). In these exchanges, the child initiates the interaction and the adult takes up what the child said and, when it contains any kind of error, frequently reformulates it in the next turn (Chouinard and Clark 2003). Adults generally use reformulations to pursue the exchange and, in doing so, offer children a conventional form of what the children appeared to mean. In the case of child utterances consisting of a verb form alone, adults typically add a subject, a pronoun or lexical noun phrase, and, if needed, an auxiliary or modal verb as well as other syntactic features, depending on the context.

For both children, up to age 1;9 (Camille) and 1;10 (Gaël), adults reformulated many of the children's verb uses in child-initiated exchanges, as illustrated in (4) and (5):

(4) Camille (1;9.3) : [opɑlɑ]
                              {sont pas là}
                              = 'are not there'
      Adult : <u>ils sont pas là</u>?
                 they be-3Ppl-Pres not there?
                 = 'they're not there?'
      Camille: *oui*
                 = 'yes'

The adult reformulation in this exchange, underlined, adds a pronoun subject, and corrects the pronunciation of the verb, adding an initial /s/ and a nasal vowel.

(5) Camille (1;10.12) : [obe tɑ]
                                  {tombé là}
                                  fall-PP there
                                  = 'fell (down) there'
      Adult : mh ?

> Camille : [tobe jɑ]
>   {tombé là}
>   fall-PP there
>   = 'fell (down) there'
> Adult : <u>tombé là</u> hein ?
>   fall-PP there huh
>   = 'fell down there, huh?'[2]
> Camille : oui maman
>   = 'yes, mummy'

This reformulation offered a corrected verb, with a nasal vowel, and a corrected locative particle, with the child's initial /t/ changed to an /l/. Notice that the child also made a correction to the verb form in response to the adult's initial request for clarification (*mh*).

The child's verb uses in the initiation of an exchange and the subsequent adult reformulations provide the primary data for our analyses. Camille's mother used a verb in her reformulations 94% of the time (namely, 178 instances), and used the same verb as Camille in 85% of these reformulations (152 instances). Gaël's mother used a verb in her reformulations 71% of the time (132 instances), and used the same verb as Gaël in 77% of these (102 instances).[3]

If adults are consistent in their interpretations of early child verb uses, we would expect them to construe early child uses of homophonous forms differently in different contexts, depending on the temporal relation of the child's utterance to the event being talked about. The child's use could be anticipatory (for a future action), simultaneous (for an ongoing action), or else report on a completed action. Each child verb use was coded for its relation in time to the pertinent event.

The temporal distinctions should also show up in adult reformulations, with the kinds of forms illustrated in (6)–(8):

(6)   /sote/ (before event occurs): possible adult interpretation, using an infinitive form:
       (a)   *il va sauter*
              he go-3Psg-Pres jump-Inf
              = 'he's going to jump'
       (b)   *il peut sauter*
              he can-3Psg-Pres jump-Inf
              = 'he can jump'
       (c)   *il veut sauter*
              he want-3Psg-Pres jump-Inf
              = 'he wants to jump'

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[2] Adult uses of bare PPs were otherwise rare in the data. In (5), the adult appears to have focussed on pronunciation rather than on syntax with the distinction between the participial and infinitival meanings.

[3] There were no qualitative differences between those construals where the adult took up the child's verb and reformulated it and those where the adult introduced a different but semantically relevant verb instead.

(7)   /sote/ (as event is occurring): possible adult interpretation, with an infinitive
      or a present tense form:
      (a)   *il est en train de sauter*
            he be-3Psg-Pres in-the-process jump-Inf
            = 'he's jumping'
      (b)   *tu le vois sauter*
            you him see-2Psg-Pres jump-Inf
            = 'you see him jump(ing)'
      (c)   il saute
            he jump-3Psg-Pres
            = 'he's jumping'

(8)   /sote/ (just after the event): possible adult form, using an auxiliary and past
         participle:
            il a sauté
            he have-Aux-3Psg-Pres jump-PP
            = 'he jumped'

Adult interpretations like these present children with constructions that differentiate
the infinitive and the past participle meanings for class 1 verbs. We therefore also
coded adult construals as relevant to an anticipated, simultaneous, or completed
event.

   Child utterances were coded for timing separately by both authors, with any
disagreements or indeterminacies decided through discussion. Although the infini-
tive and past participle are homophonous for all class 1 verbs, adult construals of the
analogous verb forms from class 3 do not involve homophonous forms. Consider the
infinitival vs. past participial forms like *courir* 'run-Inf, = to run' versus *couru* 'run-
PP, = ran', *mettre* 'put-Inf' versus *mis* 'put-PP, = put', or *s'asseoir* 'sit-Inf, = to sit'
versus *assis* 'sit-PP, = seated/sat'. What matters is that these verbs participate in the
same syntactic constructions as class 1 verb in making temporal distinctions.

   Finally, in assessing children's ability to assign meanings associated with time to
verb forms, and in particular to homophonous forms, we looked at when the two
children began to use more than one form of a particular verb. Camille began to do
this at age 1;8.15, and Gaël at 1;10.17. We also looked at when they began to add
subjects and auxiliaries to their verbs (see also Veneziano 2003; Bassano et al.
2005; Dye 2009).

3 Adult construals of child verb forms

The main proposal here is that children build on the adult interpretations in context
of their own early verb uses and so learn to add to the basic word meaning they
initially associate with each verb. The construals by adult speakers help children
link specific verb forms to additional elements of meaning as they move from the
production of a single verb form for each verb to two or more forms per verb, and as
they add grammatical morphemes like subject pronouns as well as auxiliary and
modal verbs.

3.1 Child-initiated exchanges

Overall, Camille initiated 189 exchanges where she started out by producing a verb in her opening utterance. Initially, these verbs were single-word utterances, with just one form per verb. As she got older, Camille used more verbs, measured by both types and tokens, in such child-initiated exchanges—going from just 9 tokens (5 types) in the first session analyzed at age 1;6.22, to some 32 tokens (18 types) by age 1;10.12, and then to 60 tokens (24 types) in the final recording session at 2;2.6.

After Camille initiated an exchange by using a verb, her adult interlocutor then reformulated her utterance in 178 of these exchanges (94%), offering a conventional expression for what Camille seemed to have intended. The number of adult reformulations in these exchanges at each age is shown in Table 1. In 85% of them, the adult used the same verb as Camille and so presented her with a conventional form of the verb in a construction appropriate to the meaning apparently intended, with a subject (a clitic pronoun or lexical noun phrase) and a tensed verb form, with tense carried by a modal or auxiliary verb if necessary. The number of forms Camille produced that were homophonous with some other form of the same verb is indicated in the third column of Table 1. (We return to these homophonous forms later.)

Table 1 Number of adult reformulations for verbs initiated by Camille at each age

Age	Reformulations offered by adult	Homophonous forms from child
1;6.22	9	7
1;7.4	10	8
1;7.18*	14	7
1;8.3	9	5
1;8.15	28	11
1;9.3*	37	16
1;10.12	32	16
2;2.6	50	8
Total	189	78

At the two ages marked with an asterisk (*), we included child-initiated exchanges from the full hour of recording, instead of just the first half-hour

3.2 Camille's verbs

How were Camille's verbs distributed across the two verb classes? Here we look only at the verbs that were reformulated: These were split between class 1 and class 3. In class 3, her only -ir verbs were the frequent, but irregular, *courir* 'to run', *dormir* 'to sleep', *ouvrir* 'to open', and *sortir* 'to go out'. (*Dormir* and *sortir* have regular past participles, *dormi* and *sorti* respectively, but are irregular in the present tense.)

Table 2 Number of adult reformulations, by verb class, for Camille at each age

Age	Child's verb reformulated with same verb by adult	Class 1 (-er) from child	Class 3 from child
1;6.22	9	5	4
1;7.4	10	7	3
1;7.18*	13	9	4
1;8.3	9	6	3
1;8.15	26	8	18
1;9.3*	35	19	16
1;10.12	30	22	8
2;2.6	46	22	24
Total	189	98	80

At the two ages marked with an asterisk (*), we included child-initiated exchanges from the full hour of recording, instead of just the first half-hour

Overall, there were 100 tokens (30 types) of class 1 verbs in *-er*, and 89 tokens (18 types) from class 3 (mainly verbs in *-oir* and *-re*). The distribution of the exchanges containing these verb uses reformulated for Camille is shown for each group of verbs, by age, in Table 2.

3.2.1 Verbs for existing states and pretend states

Before we could compare Camille's verb uses and the adult reformulations with respect to the timing of each event, we extracted from the data any child verb uses in the exchanges initiated that marked either an existing state of affairs (57 uses), where, for example, the event had to be inferred from a picture, or a verbal pretence, where there was no actual event (10 uses), as illustrated in (9) and (10) respectively.

(9)   Existing state
       Camille (1;10.12, as adult points at part of a picture) :   [ezwazo e vol]
                                                                    {les oiseaux ils volent}
                                                                    the birds they fly-3Ppl-Pres
                                                                    = 'the birds are flying'
       Adult : comment ils s'appellent ces oiseaux-là?
               how they Refl-call-3Ppl-Pres Dem. birds-there
               = 'what are they called, those birds there?'
       Camille : [ga, ezwazo e vol]
                 {regarde, les oiseaux ils volent}
                 = 'look, the birds are flying'
       Adult : oui <u>les oiseaux ils volent</u> mais ceux-là ils volent pas /
               yes the birds they fly-3Ppl-Pres but those-there they fly-3Ppl-Pres not
               = 'yes, the birds are flying but those ones aren't flying'
               (points at picture of swans)

ils nagent là /
they swim-3Ppl-Pres there
= 'there they're swimming'

(10)   Pretence

Camille (1;9.3, putting baby-doll into its cradle) : [lɑ] (pause 1.6s) [afwɑ]
{là – a froid}
there – have-Aux-3Psg-
Pres cold
= 'there – (he) is cold'

Adult : <u>il a froid</u> oui / couvre-le bien /
he have-Aux-3Psg-Pres cold yes / cover-him well /
= 'he's cold, yes; cover him (up) well'
(Camille lets go of the cover)

Adult : (pause 0.8s) voilà / (pause 1.2s) comme ça il n'a plus froid /
there   like that he Neg-have-Aux-3Psg-Pres more cold
= 'there' 'he won't be cold any more like that'
(adjusts the cover over the doll)

3.3 Gaël's verbs

Gaël initiated 187 exchanges using a verb. Just as for Camille, all his early verb uses appeared in single-word utterances, with each verb in just one form. As he got older, he used more verbs, types and tokens, in child-initiated exchanges—going from 7 tokens (5 types) in the first session we analyzed at 1;10.3, to 14 tokens (12 types) by age 1;11.15, and then 23 tokens (14 types) in his final recording session at age 2;3.4. Although Gaël advanced more slowly than Camille, his overall patterns of use were similar.

After Gaël initiated an exchange with a single-word verb use, the adult reformulated his utterance with a verb in 73% of these exchanges, producing a conventional version of what Gaël seemed to mean on each occasion. These exchanges are tallied, by age, in Table 3.

Table 3 Number of adult reformulations for verbs initiated by Gaël at each age

Age	Reformulations by adult	Homophonous forms from child
1;10.3	12	6
1;10.17	16	9
1;11.1	12	6
1;11.15	18	13
1;11.25	24	8
2;1.0	22	11
2;3.4	28	6
Total	132	59

The adult produced the same verb in 75% of these exchanges (102 instances), and a different verb 22% of the time. Table 4 presents the adult reformulations using the same verb, by verb class, for Gaël.

Table 4 Number of adult reformulations, by verb class, for Gaël at each age

Age	Child verb reformulated with same verb by adult	Class 1 (-er) from child	Class 3 from child
1;10.3	10	4	6
1;10.17	13	5	8
1;11.1	8	3	5
1;11.15	15	10	5
1;11.25	22	18	4
2;1.0	18	11	7
2;3.4	16	6	10
Total	102	57	45

3.4 Child utterance timing and adult reformulations

We sorted the child utterances and adult reformulations for each child into three temporal categories according to their timing relative to the event being talked about—anticipatory, simultaneous, and completed. Anticipatory utterances were where the child talked about an event (an action) before the event began; simultaneous ones were where the child talked about an event as it was going on, and completed ones were where the child talked about an event that was already completed. It proved difficult in a few cases to distinguish anticipatory from simultaneous talk about events, and the adult reformulations for both types contained some present tense forms.

3.4.1 Reformulations and timing for Camille

Adults favoured constructions containing a modal such as *pouvoir, vouloir, falloir*, or the future *aller,* in 65% of their reformulations for Camille's verbs that anticipated an event, and produced present tense forms in 35% of them. This compared to an 85% reliance on present tense forms in adult reformulations for child verbs produced at the same time as an ongoing action. Adults were significantly more likely to use a modal and infinitive construction when Camille's verb anticipated the event, but more likely to reformulate her verb use as a present tense form if the event was already ongoing ($X^2(1) = 19.80$, $p < .0001$). When Camille's verb use for completed events was compared to her anticipatory and ongoing verb uses separately, adult reformulations again differed significantly: adults used only past tense forms in reformulating child verbs produced after an event was completed, never for an event that was either anticipated ($X^2(1) = 58.28$, $p < .0001$) or ongoing ($X^2(1) = 49.46$, $p < .0001$). These data are summarized for Camille in Table 5.

The bold-faced cells indicate percentages for the correlations of the constructions in adult construals with the timing of the child's uses relative to the event being talked about.

Table 5 Camille: percentage of adult reformulations, and the construction-types produced by the adult, after child-utterances for anticipated, ongoing, and completed events

Adult verb form/construction	Child: anticipatory	Child: ongoing	Child: completed
Modal + infinitive	**65**	6	3
Present tense	35	**86**	0
Passé composé (Aux PP)/PP	0	9	**97**

3.4.2 Reformulations and timing for Gaël

In their reformulations for Gaël's anticipated events, adults gave a slight edge to auxiliary + infinitive forms over present forms (56% vs. 44%). They favoured the present tense for ongoing events by a slightly larger margin (67%), but also used some modal + infinitive forms (20%). And for completed events, they favoured the past tense and/or a past participle (67%). The overall pattern in adult reformulations for Gaël strongly resembles that for Camille in that adults were significantly more likely to reformulate Gaël's utterances with an auxiliary + infinitive form for anticipated events but with a present tense form for ongoing ones ($X^2 (1) = 5.21$, $p < .022$). They were also significantly more likely to use a past tense form for completed events than for either anticipated ($X^2(1) = 23.26$, $p < .0001$) or ongoing events ($X^2(1) = 10.40$, $p < .001$) in their reformulations. These data are summarized for Gaël in Table 6.

Table 6 Gaël: percentage of adult reformulations, and the construction-types produced by the adult, after child-utterances for anticipated, ongoing, and completed events

Adult verb form/construction	Child: anticipatory	Child: ongoing	Child: completed
Modal + infinitive	**56**	20	13
Present tense	44	**67**	20
Passé composé (Aux PP)/PP	0	13	**67**

3.4.3 Verb classes and adult reformulations

Although Camille's child-initiated exchanges were reformulated by adults for equal numbers of verbs from class 1 and class 3 in anticipatory uses (31 vs. 30), adults offered almost twice as many reformulations of class 1 verbs as class 3 verbs for both ongoing (26 vs. 15) and completed events (14 vs. 6). These patterns looked slightly different for Gaël. His child-initiated exchanges were reformulated by adults equally often for class 1 and class 3 verbs in anticipatory uses (19 vs. 22), but

less often for class 1 than class 3 verbs for ongoing uses (11 vs. 20), and much less often for verbs in both classes for completed events (8 and 8).

Overall, Camille heard 71 class 1 and 51 class 3 verbs reformulated, while Gaël heard 57 class 1 and 45 class 3 verbs reformulated. Both children heard consistently more adult reformulations of utterances about anticipated and ongoing events than about completed ones (see further Sect. 3.5.1).

Some typical examples of Camille's verbs construed by the adult as designating an anticipated and a simultaneous event are given in (11) and (12). The adult uses Camille's verb in her reformulation, *mettre* 'put' in (11) and *sortir* 'go out/take out' in (12), with both verbs presented by the adult in the present tense, with pronoun subjects added:

(11)   Camille (1;8.15) : [eme]
                              {les mets}
                              them put-2Psg-Impera
                              = 'put them'
          Adult : je la mets?
                  I it-fem put-1Psg-Pres
                  = 'I put it'
          Camille : [hɛ̃]
          Adult : je la mets dedans?
                  I it-fem.sg put-1Psg-Pres inside
                  = 'I put it inside?'
          Camille : [hɛ̃] (watches as adult slowly reaches into box)

The adult, in her reformulation, added both subject and object pronouns to the child's verb.

(12)   Camille (1;8.15) : [ɔːti]
                              {sorti(r)}
                              = 'get/got out'
                  (C playing with a baby doll in toy bath)
          Adult : oui il faut le sortir /
                  yes it need-3Psg-Pres it get-out-Inf
                  = 'yes, you need to get him out'

Here, the adult has added a modal verb with an impersonal subject and a direct object pronoun to the child's verb form, and has taken the child's form to be an infinitive.

Most of the adult reformulations of utterances that appeared to anticipate the event mentioned contained some form of modal verb followed by the relevant infinitive, or else a periphrastic future use with *aller* 'go' followed by the infinitive, as in the exchanges in (13), with the adult's addition of the modal *devoir* (*doit*) 'must, have to', and in (14), with periphrastic future marking with *aller* (*vas,* go-2Psg-Pres) 'be going to':

(13)   Camille (1;9.3) : [no asi]
                                {non assis}
                                = 'no, seated'
         (C takes baby doll from the adult's hands and puts it on the floor)
         Adult : ah <u>il doit rester assis</u> oui
                 ah he must-3Psg-Pres stay-Inf sit-PP yes
                 = 'ah he must stay sitting down yes'

The adult reformulation here has added a subject pronoun and a modal verb to the child's form, and has interpreted the child as objecting to the doll being moved from a seated position.

(14)   Camille (1;10.12) : [kaʃ mamɔ̃ kaʃ]
                                {cache, maman, cache}
                                hide-1P/2Psg-Pres/Impera, mummy, hide-1P/2Psg-Pres/
                                Impera
                                = 'hide, mummy, hide'
          (Camille goes towards the dresser and hides beside it)
         Adult : <u>tu vas te cacher</u> ?
                 you go-2Psg-Pres you-Refl hide-Inf
                 = 'you're going to hide yourself?'

Here the adult's reformulation added a subject pronoun, a (reflexive) object pronoun, and the periphrastic future with *aller*.
    The adult reformulations of verbs used for completed events virtually always involved the addition of the appropriate auxiliary verb, *avoir* 'to have' or *être* 'to be', to the past participle, along with a clitic subject pronoun, as in (15) and (16):

(15)   Adult : tu cherches le bouchon ?
                 you look-for-2Psg-Pres the stopper
         Camille (1;7.18) : [tuve lɑ]
                                {trouvé là}
                                find-PP there
                                = 'found there'
             (C picks up the stopper)
         Adult : <u>tu l'as trouvé</u> ?
                 you it-masc be-Aux-2Psg-Pres find-PP
                 = 'you found it?'

The adult added a subject pronoun, an object pronoun, and an auxiliary verb to the child's form, showing that it had been construed as a past participle.

(16)   Camille (1;7.4) [ɛsi:]
                                {assis}
                                = 'seated'
          (takes baby doll and makes it sit down)

Adult : <u>il est assis c'lui là</u>
       'he be-Aux-3Psg-Pres sit-PP DemPro there
       = 'he's sitting down there that one (is)'
Camille :   [asiː asiː]
         {assis, assis}
         sit-PP sit-PP
         = 'sitting, sitting'

Here, the adult reformulation supplied a subject pronoun and an auxiliary verb for the past participle of the class 3 verb 'to sit'. Notice that Camille corrected her own pronunciation of *assis* after the adult's reformulation.

3.4.4 Contrasting verb forms

Which forms of which verbs did Camille produce initially, and how soon did she begin to produce two contrasting forms for a verb? We have already pointed out that the verbs in the exchanges analyzed here belonged either to class 1 (the large regular set of verbs in *-er*) or to class 3 (especially those traditionally viewed as irregular but frequent verbs, in *-re* or *-oir*). Camille produced only single forms of most of her verbs up until the recording session at age 1;9 when she began to produce a contrasting verb form for a few of her verbs. By 1;10, Gaël also began to produce two different forms for one or more verbs in a single session, but did so much less often than Camille (see Veneziano 2003; Veneziano and Parisse 2005, 2010). Camille did this for 4 verbs at 1;10.12 (*donner* 'give', *tomber* 'fall', *aller* 'go', *dormir* 'sleep'), and for a further 5 verbs by 2;2.6 (*être* 'be', *mettre* 'put', *enfiler* 'put on', *enlever* 'lift up', *faire* 'do, make'). At 1;10.12, she contrasted some past participial forms with present tense (3P) forms, as shown for the class 3 verb *dormir* 'sleep', in (17) and (18):

(17)   Camille (1;10,12): [domi]
                   {dormi}
                   sleep-PP
                   = 'slept'
     Adult: <u>il a</u> dormi ?
         he have-Aux-3Psg-Pres sleep-PP
         = 'he slept?'
     Camille: *oui*
         = 'yes'

(18)   Camille (1;10,12):   [bebe i dor]
                          {bébé il dort}
                          baby he sleep-3Psg-Pres
                          = 'baby he's sleeping'

By 2;2, she had some contrasting uses of present vs. future forms (with periphrastic *aller*), as shown in (19) and (20) for class 3 *mettre* 'put (on)':

(19)   Adult : comment on fait ça ?
                  how one do-3Psg-Pres that
                  = 'how do you do that?'
         Camille : [kom sa ɔ̃ mɛ]
                  {comme ça on met}
                  like this one put-3Psg-Pres
                  = 'you put it like this'

(20)   Adult : t'as lavé maintenant ?
                  you have-Aux-2Psg-Pres wash-PP now
                  = 'have you washed (it) yet?'
         Camille : [wi mɑ lave le ʃəvø ɔ̃ va mɛt sɑ]
                  {oui moi lavé les cheveux, on va mettre ça}
                  yes me wash-PP Art hair one go-Aux-3Psg-Pres put-Inf that
                  = 'yes, me washed hair – we're going to put on these'
                  (she picks up the shoes for the doll)

Camille also began to contrast a few present versus infinitive forms, as shown in
(21) and (22) for class 3 *faire* 'do, make':

(21)   Camille : [pukwa ɑ lə məsiø i fe e foto] ? [mamɔ̃]
                  {pourquoi là le monsieur il fait les photos? maman}
                  why there the man he makes Art photos mummy
                  = 'why is that man taking photos? mummy'
         Adult : peut-être pour le cinéma tu vois /
                  perhaps for the cinema you see
                  = 'maybe for the cinema, you know'
                  il fait peut-être un film pour le cinéma /
                  he do-3Psg-Pres perhaps a film for the cinema
                  = 'maybe he's making a film for the cinema'

(22)   Camille : [lɑ pu fɛr kwa vek sɑ] ?
                  {là pour faire quoi avec ça}
                  there for do-Inf what with that
                  = 'what are we going to do with that?'
                  (puts the doll down in front of the adult)

And she contrasted a few singular versus plural verb forms, as shown in (23) and
(24) for class 3 *être* 'be', used as a copula:

(23)   Camille : [mamɔ̃ el ɛ bel]
                  {maman elle est belle}
                  mummy she is pretty
                  = 'she's pretty, mummy'
                  (shows her mother the doll that she dressed)
         Adult : oh elle est belle bravo
                  = 'oh she is pretty, bravo'

(24)   Adult : les talons aussi hein ils sont tout noirs les talons
                      the-Art-pl heels too eh they be-3Ppl-Pres all black-pl Art-pl heels
                      = 'the heels too, they're all black'
           Camille : [le pie i sɔ̃ al]
                        {les pieds ils sont sales}
                        the feet they be-3Ppl-Pres dirty-pl
                        = 'the (doll's) feet are all dirty'

and she contrasted some past tense versus infinitival forms, as shown in (25) and
(26) for class 1 *enfiler* 'put on (thread on)'

(25)   Adult : qu'est-ce que tu as fait derrière ?
                      what is-it that you have-Aux-2Psg-Pres do-PP behind
                      = 'what did you do at the back?'
           Camille : [e ɔ̃file la rob]
                        {ai enfilé la robe}
                        = '(I) put on her dress'

(26)   Adult : moi qu'est-ce que je dois faire alors ?
                      me what be-3Psg-Pres it that I must-1Psg-Pres do-Inf then
                      = 'so what have I got to do now?'
           Camille : [lɑ ɛ̃fide]
                        {là enfiler}
                        there put-on-Inf
                        = 'put (that) on there'
                        (shows the dress that needs to be put on)

For more on emerging contrasts within verbs, see Veneziano and Parisse (2005,
2010).

3.5 Construals in context

Speakers make use of tense in order to encode the time of the event being talked
about. Talk about a future event calls for a future tense inflection attached to the
verb stem, or (more commonly) a periphrastic future form with the verb *aller*
'go-Inf' in construction with an infinitive for the verb describing the event antici-
pated. For each event for which the child initiated an exchange by using a single-
word utterance consisting of a verb, we coded whether the child said the verb before
the event began, while it was going on, or after it was completed. We then looked at
how the adult construed the child's utterance, and whether, in any subsequent
reformulation, the adult used a tense-marking consistent with the relation between
the timing of the child's utterance and the event. Overall, for the 93 episodes where
the adult used the same verb as Camille, the Spearman correlation of adult utterance
meaning to child timing was 0.712. And, as we noted earlier, the adult generally
used modals or the future with *aller* 'go' in construction with the infinitive form of

the child's verb for anticipated events; present-tense forms of the child's verb for simultaneous events, and past tense forms for completed events (see Table 3).

When we distinguished class 1 from class 3 verb uses, the correlations for same-verb reformulations for the child's timing were $r = .794$ for class 1 (mainly regular verbs in -er), used in 54 episodes, and $r = .699$, for class 3 verbs (in -re, -oir, and in -ir) used in 33 episodes. In short, the adult attended to the timing of the child's utterances relative to the event, and offered construals that presented the child with an appropriate set of constructions for the expression of that timing.

For Gaël, the Spearman correlation of adult utterance meaning to child's timing, for the 62 episodes where the adult used the same verb for an event that occurred before, during, or after the action denoted, was $r = .79$. The adult's class 1 verb reformulations were very highly correlated with the child's timing, $r = .97$ (in 30 episodes), as were their class 3 verb reformulations, $r = .71$ (in 24 episodes). In short, adults construed the children's verb uses as having the same temporal relation to the events being talked about as the timing of the children's own utterances suggested.

3.5.1 Dominant verb forms in adult speech

Did adult construals offer contrasting constructions for the same verb reformulated on different occasions? For instance, did the children hear a verb like *tomber* 'fall' both in infinitival constructions, for anticipatory uses, and in past participial constructions for completed uses? Or did adults favour only certain forms for certain verbs? Bloom et al. (1980), for example, observed that, in English child-directed speech, adults tended to use past tense forms with some verbs more often than for others, and the -*ing* present for some verbs and not others. Their choices were related to the inherent meanings of the verbs: telic verbs were more likely to be used with past tense inflections and activity verbs with -*ing*. These patterns in turn are reflected in children's first uses of inflected forms, in Italian as well as English (e.g., Antinucci and Miller 1976; Bloom et al. 1980; Clark 1996).

The adult speech to Camille indeed displayed a number of asymmetries in verb form uses. For example, some verbs appeared mainly in the present tense, and even in the 2Psg present (e.g., *veux* (*vouloir*) 'want', *essaies* (*essayer*) 'try'), and hardly appeared in any other form in the transcripts analyzed here. Others like *casser* 'break', *tomber* 'fall', and *asseoir* 'sit' appeared mainly or only in the past tense (passé composé), with the appropriate auxiliary verb. And others still appeared mainly in infinitival constructions (e.g., *enlever* 'take off', *laver* 'wash').

We therefore looked at all the tokens of adult verbs in speech to Camille from 1;6.22 to 1;8.15, a period when Camille herself still produced only one form per verb. In Table 7, we list the nine adult verbs that appeared in a dominant form. Three additional verbs appeared only in formulaic utterances: *coucher* 'lie down' (once, in PP form), *lire* 'read' (twice in 3Psg-Pres), and *sonner* 'ring' (once in 3Psg-Pres).

Table 7 Adult verbs used in speech to Camille (aged 1;6.22–1;8.15)

Verb		N	Dominant form		Other forms		
asseoir	sit	11	assis	PP			
avoir	have	150	a	3Psg-Pres	4 ont	3 avoir	2 eu
boire	drink	21	boire	Inf	5 boit		
casser	break	13	casser/cassé	Inf/PP	1 casse		
courir	run	6	court	3Psg-Pres			
fermer	shut	6	fermer/fermé	Inf/PP	1 ferme		
piquer	sting	5	pique	3Psg-Pres			
pleurer	cry	6	pleure	3Psg-Pres	2 pleurer		
pouvoir	be able	35	peux/t	Pres	1 pouvez 1 puisse		

Table 8 Adult verbs used in multiple forms in speech to Camille (aged 1;6.22–1;8.15)

Verb		Contrasting verb forms
chercher	look for	9 chercher/cherché-Inf/PP, 6 cherche-3Psg-Pres, 1 cherchera-3Psg-Fut
donner	give	13 donner-Inf/PP, 10 donne-1P/3Psg-Pres
(en)dormir	sleep	1 dormir-Inf, 1 dort-3Psg-Pres
enlever	remove	11 enlever-Inf/PP, 7 enlève-3Psg-Pres
(re)mettre	put	32 mettre-Inf, 30 met-3Psg-Pres, 17 mis-PP
ouvrir	open	4 ouvrir-Inf, 3 ouvre-3Psg-Pres
tourner	turn	27 tourne-1P/3Psg-Pres, 18 tourner-Inf
aller	go	97 va-3Psg-Pres, 27 vais-1Psg-Pres, 13 aller-Inf, 1 ira-Fut, 1 vont-3Ppl-Pres
être	be	329 est-3Psg-Pres, 37 était-3Psg-Imperf, 24 sont-3Ppl-Pres, 4 été-PP, 1 suis-1Psg-Pres
faire	do, make	98 fait-3Psg-Pres, 22 fair-Inf, 10 font-3Ppl-Pres, 1 faisait-3Psg-Imperf
tomber	fall	30 tomber-Inf/PP, 2 tombe-1P/3Psg-Pres

Adults used other verbs in multiple forms, as shown in Table 8. These verbs appeared in between 2 and 5 contrasting forms in adult speech. Those in the top half of Table 8 appeared to have no dominant form, while the last four, in the bottom half, seem to have one form that is more frequent than the others. Notice that three of these four verbs are general purpose verbs, a factor that contributes to greater frequency: *aller* 'go', *faire* 'do, make', and *être* 'be'. These verbs are produced by adults in a range of contexts: *aller* and *être* often appear as auxiliary forms (73/97 for the form *va*, 81/329 for *est*); and *faire* appears in causative constructions as well as in various fixed expressions (*faire du bruit* 'make a noise', *faire dodo* 'sleep').

The one-form adult verbs (Table 7) are distinguished from their multiple-form verbs (Table 8) in the timing of the first appearance of each verb in Camille's speech. Most of the one-form adult verbs appeared in Camille's speech in the early recording sessions, but, of multiple-form verbs, five appeared early (before 1;8.15) but in only one form, namely *tomber* 'fall', *tourner* 'turn', *être* 'be', *enlever* 'take

off', and *mettre* 'put (on)', and the remainder only emerged in Camille's speech in later recording sessions (see further Veneziano and Parisse 2010).

Do adult uses of multiple forms of a verb aid children's uptake of contrasting forms early on? This seems very probable. Nine of the 14 verbs that Camille used in a single form had a dominant form in adult speech.. Among the verbs without a dominant form, Camille took up and used *aller* 'go', *donner* 'give', and *enfiler* 'put on' in two forms right away in different temporal contexts, and produced the passé composé appropriately for both *aller* and *enfiler*.

These observations are consistent with other findings on children's earlier uptake of more frequent forms in parental speech. For example, in a study of two children's acquisition of locative verbs in French, Chenu and Jisa (2006) found that general purpose *mettre* 'put' was dominant in one mother's speech, but, while frequent, in the other mother's speech, *mettre* was used in contrast to other, more specific, locative verbs—*attacher* 'fix onto', *poser* 'lay down', and *accrocher* 'hang'. The child of the dominant-form mother produced only *mettre* for talking about where to place things, while the other child at the same age produced more specific locative verbs as well. In summary, this suggests that in verb acquisition children are sensitive to dominant forms in adult speech and use them as starting points in the acquisition of verbs (see Veneziano and Parisse 2010, and also de Villiers 1985; Naigles and Hoff-Ginsburg 1998).

3.5.2 Verbs and constructions

In adult speech to Camille, the three general-purpose verbs—*aller* 'go', *faire* 'do, make', and *mettre* 'put' were by far the most frequent verbs adults produced (see Clark 1978; Huttenlocher et al. 1983). *Aller* as a main verb marks general motion, but it is also frequent as the periphrastic future: it introduced future infinitival constructions and was common in 2Psg and 3Psg present tense forms (*vas, va;* both pronounced /va/). *Faire* appeared as an auxiliary for the periphrastic causative, as a main verb in the past tense and, more frequent still, as a 2Psg or, more often, 3Psg, present tense form (*fais*, *fait;* both pronounced /fe/). M*ettre* also appeared in three forms, infinitival for anticipated placements, past tense (with auxiliary *avoir*), and as a 2Psg or 3Psg present tense form (*mets, met;* both /me/).

Adults used two groups of constructions with verbs in talking to Camille. First, they used the auxiliaries *avoir* and *être* with past participles for completed events with 64% of class 1 verb-types (14/22), and with 41% of class 3 verb-types (7/17). Second, they relied on a variety of infinitival constructions, mainly for anticipated but sometimes for ongoing events. These infinitival constructions are shown in Table 9. The number of different constructions used with each verb-type ranged from 1 to 7. Adults used seven different constructions with the main verb *mettre* 'put', for example. They used six each with main verbs *faire* 'do, make' and *voir* 'see', and five with main verb *aller* 'go'. Remember that three of these four verbs are general-purpose verbs (Clark 1978). They were also the most frequent overall in adult use (*aller* with 129 uses, *faire* 185 uses, and *mettre* 129 uses).

Table 9 Constructions in adult reformulations used with verb-types from each verb class (in percentages) with Camille

Adult construction	Function/meaning	Used with class 1 verbs ($n = 22$)	Used with class 3 verbs ($n = 17$)
Aller + infinitive	Future	59	41
Vouloir + infinitive	Modal (want)	18	35
Pouvoir + infinitive	Modal (can)	18	18
Falloir + infinitive	Modal (must)	9	18
Faire + infinitive	Causative	14	12
Devoir + infinitive	Modal (must)	0	5
Savoir + infinitive	Know how to	4	0
Aimer + infinitive	Like to	0	18
Pour + infinitive	In order to	0	12
de, à + infinitive	To (complementizer)	8	47

Typical examples of such adult uses are shown in (27)–(29).

(27)   Il veut <u>aller</u> se voir dans la glace le bébé ?
       he want-3Psg-Pres Pro-3P-Refl see-Inf in the mirror the baby
       = 'Does the baby want to see himself in the mirror?'

(28)   Tu veux <u>faire</u> le bain au bébé ?
       you want-2Psg-Pres make-Inf the bath to-the baby
       = 'Do you want to give the baby a bath?'

(29)   Il faut <u>mettre</u> le petit, le petit doigt de la main.
       Pro-3Psg must-3Psg-Pres put-Inf the little, the little finger of the hand
       = 'You have to put in the little one, the little finger of your hand'

These general-purpose main verbs appeared in a variety of constructions for talking about future events, as in (27)–(29), but also for completed events. The range here suggests that adult uses of general-purpose verbs may offer the child constructional templates for other verbs (Ninio 1999), here by 'displaying' the constructions available for marking time relative to an event. Most of the other verbs adults used appeared in just one or two infinitival constructions, and/or in an auxiliary plus past participle construction. For nearly all the verbs (including the general purpose ones), the infinitival constructions also contrasted with present tense forms in adult speech to Camille. This was true for 16 of 22 class 1 verbs and for 16 of 17 class 3 verbs. Previous research suggests that children are sensitive to the constructions adults use verbs in, and learn those that are more frequent first (e.g., de Villiers 1985; Naigles and Hoff-Ginsburg 1998; Chenu and Jisa 2006). The range of constructions adults use, then, offer children highly appropriate verb forms for talking about past, present, and future events.

3.5.3 Distinguishing homophonous forms

Even though adults tended to use each verb in only a limited number of forms, they used contrasting constructions in their reformulations with just over half their class 1 verbs (12 of 22), thereby distinguishing the meanings of the homophonous past participial and infinitival forms. They also used distinct constructions and distinct forms for the same two meanings at issue for some class 3 verbs (5 of 17 reformulated), for the same anticipatory versus completed meanings as in the class 1 verbs. Examples of adult contrasting infinitive vs. past participial forms for class 1 *enlever* 'take off/out' are given in (30), with analogous examples from class 3 *faire* 'do, make' in (31):

(30)   a.   Tu <u>veux lui enlever</u> la jupe ?
              you want-2Psg-Pres to-her take-off-Inf the skirt
              = 'do you want to take off her skirt [of doll]?'
       b.   J'<u>ai enlevé</u> le bouchon. 'I've taken out the stopper'
              I have-1Psg-Pres take-out-PP the stopper
              = 'I took out the stopper'

(31)   a.   Tu <u>vas faire</u> un tour en voiture ?
              you go-2Psg-Pres do-Inf a trip in car
              = 'you're going to take a trip in the car?'
       b.   Qu'est-ce qu'il <u>a fait</u>? Il est tombé.
              what is-it that he have-Aux-3Psg-Pres do-Inf? he be-Aux-3Psg-Pres
               fall-PP
              = 'what did he do? he fell down'

In short, the adult speech children are exposed to in interaction provides direct evidence for the two meanings of the homophonous infinitival and participial forms in class 1 verbs, and also relates such meanings, through use of the same constructions, to the analogous meanings for class 3 verbs. Since adults used the same constructions for class 1 and class 3 verbs, children can infer that the same meaning is being added, through the construction chosen, to the root meaning of each verb used in anticipatory contexts. The same inference holds for verbs used by the adult in the past tense (passé composé) in completed contexts.

3.5.4 Subjects, auxiliaries, and modals in the child

When did the two children start to add some of the grammatical elements that distinguish anticipatory from completed uses of a verb form like /tɔ̃be/? Camille's first subject pronouns, *on* 'one/we' and *il* 'he', appeared initially only in formulaic utterances (e.g., /oli/ 'on lit = we read' to request reading), but by 1;8, she began to produce pronouns in non-formulaic utterances when repeating an adult form, as shown in (32):

(32)   Adult : qu'est-ce qu'il fait là le chien ?
                   what is-it that he do-3Psg-Pres there the dog
                   = 'what's the dog doing there?'
        Camille (1;8.15) : [lɑ] ?
                   = 'there?'
        Adult: oui il court
                   yes he run-3Psg-Pres
                   = 'yes, he's running'
        Camille : [hɛ̃] ?
        Adult : il court
                   he run-3Psg-Pres
                   = 'he's running'
        Camille : [i i kur]
                      {il il court}
                      he he run-3Psg-Pres
                      = 'he– he's running'

At 1;9 she also started to produce them in child-initiated verbs, as in (33):

(33)   Camille (1;9.3) : [i kur e ʃiɛ̃, gɑ i kur e ʃiɛ̃]
                              {il court le chien, regarde, il court le chien}
                              he run-3Psg-Pres the dog, look he run-3Psg-Pres the dog
                              = 'the dog's running, look the dog's running'
        Adult : il court le chien ? fais voir
                   he run-3Psg-Pres the dog ? make-2Psg-Impera see-Inf
                   = 'the dog's running? let's see.

The percentage of verbs used with pronouns in Camille's speech rose from 13% at
1;10.12 to 55% at 2;2.6, with 1Psg and 2Psg used now as well as 3Psg forms and the
occasional lexical subject, as shown in (34)–(36).

(34)   Adult : tu essaies avant de dire que t'arrives pas /
                   you try-2Psg-Pres before COMP say-Inf that you manage-
                   2Psg-Pres not
                   = 'you try before you say you can't'
        Camille (2;2.6) : [ʒariv pɑ]
                              {j'arrive pas}
                              I manage-1Psg-Pres not
                              = 'I can't do it'

(35)   Camille (2;2.6) : [twɑ osi ɑ lave le ʃəvø]
                              {toi aussi as lavé les cheveux}
                              you too have-Aux-2Psg-Pres wash-PP the hair
                              = 'you washed your hair too'

(36)   Adult : qu'est-ce qu'ils font ces enfants là ?
                what is-it that they do-3Ppl-Pres Dem children there
                = 'what are those children doing?'
        Camille (2;2.6) : i sɔ̃ ɔ̃ la nɛʒ]
                    {ils sont en la neige}
                    they be-3Ppl-Pres in the snow
                    = 'they're in the snow'
        Adult : ils sont dans la neige, et puis ça qu'est-ce que ça ?
                they be-3Ppl-Pres in the snow, and now that what is-it that that
                = 'they are in the snow, and now what is that one?'

Gaël's first pronouns, like Camille's, were 3Psg forms (*ça* 'that' and *il* 'he'), and his first non-formulaic uses emerged just before age two, as shown in (37) and (38):

(37)   Adult : ouh un carrousel oui
                oh a carrousel yes
                = 'oh, yes a carrousel'
        Gaël (1;11.25) : [sɑ turn]
                    {ça tourne}
                    that turn-3Psg-Pres
                    = 'that goes round'
        Adult : oui, ça tourne
                yes, that turn-3Psg-Pres
                = 'yes, that goes round'

(38)   Adult : qu'est-ce qu'ils font là alors ?
                what is-it that they do-3Ppl-Pres there then
                = 'what are they doing there then?'
        Gaël (1;11.25) : [i pus]
                    {il pousse}
                    he push-3Psg-Pres
                    = 'he's pushing'
        Adult : le paysan pousse et le cheval tire
                the farmer push-3Psg-Pres and the horse pull-3Psg-Pres
                = 'the farmer is pushing and the horse is pulling'

Lexical subjects remained rare in Camille's utterances, even at 2;2. They appeared only in a handful of 'where' questions, as shown in (39) and (40), and in the occasional repetition of an adult utterance. Gaël used no lexical subjects even at 2;3.

(39)   Camille (1;9.3) : [ɛ u ʃosyr] ?
                    {est où chaussure}
                    be-3Psg-Pres where shoe
                    = 'where's (the) shoe?'

(40)   Camille (1;10.12) : [ɛ u buʃɔ̃] ?
                            {est où bouchon}
                            be-3Psg-Pres where stopper
                            = 'where's (the) stopper?'

Camille also began to produce different auxiliary verbs from 1;10 on (see also Dye, 2009). She expressed the future with the periphrastic *aller*, as in (41), and started to use some modal forms, e.g., *pouvoir* 'be able to' and *falloir* 'must', as in (42) and (43):

(41)   Adult : tiens ça lui fait une petite jupe /
                look that to-her make-3Psg-Pres a little skirt
                = 'look, that makes a little skirt for her'
        Camille (1;10.12) : [o va ɛkoʃe mamɔ̃]
                            {on va accrocher maman}
                            'one go-3Psg-Pres fasten-on-Inf mummy
                            = 'we're going to fasten (it), mummy'

(42)   Camille (2;2.6) : [lotr ʒamb fo mɛtr]
                            {l'autre jambe faut mettre}
                            the other leg must-3Psg-Pres put-Inf
                            = 'we must put the other leg (in)'

(43)   Camille (2;2.6) : [wi ɔ̃ pe ɛve]
                            {oui on peut enlever}
                            yes one can-3Psg-Pres take-off-Inf
                            = 'yes, we can take (it) off'

Unlike Camille, Gaël did not produce any constructions with future or modal forms up to age 1;11,25, and only in the last two recording sessions did he produce contrasting forms of the same verb. Even at 2;2 to 2;3, both children still usually omitted the auxiliaries *avoir* and *être* with past participle for completed events.

4 Conclusion

When adults talk with children in context, they are typically engaged with what the child is doing and saying. But children's first verbs, especially as one-word utterances, often are unclear in meaning, particularly in French, a language with numerous homophones. Prominent among these is the homophony of the infinitive and the past participle for class 1 verbs. However, as we have shown in this paper, adult speech to young children consistently distinguishes infinitival uses from participial ones. First, they are produced in different contexts, depending on the timing of the event being talked about, and second, they are presented in different constructions. In short, adults consistently distinguish the meaning carried by the infinitive from that carried by the past participle.

Children focus on meaning too, from the start: They begin by identifying event types, and relating those to their first verb forms, so they are typically quite accurate

from early on in identifying categories of actions (e.g., Huttenlocher et al. 1983). At the same time, children's choices of an initial form to use for each verb appears to be determined by the dominance of that form in adult speech. That is, they pick up on the dominant, or most frequent form, in adult usage whenever there is one. Only later do they add further forms, and, as a result, additional elements of meaning such as tense or person to their verbs.

Adults frequently offer reformulations or construals of child verbs in context, and thereby offer children information about distinct sets of constructions in which a verb form can appear. One group of constructions, usually a periphrastic future or a modal combined with the target form, is consistently used in contexts where the event is anticipated, yet to occur; another group, consisting of an auxiliary (*avoir* or *être*) and the past participle (the target form), is consistently produced in contexts where the event has been completed. And in contexts where the event is ongoing, adults generally use the present tense form of the target verb. These reformulations of child verb uses serve two functions: they check up on whether what the adult presents was the meaning the child intended, and they offer a conventional, adult, version of how to express that intended meaning (see Chouinard and Clark 2003; Clark 1987; Demetras et al. 1986; Farrar 1992; Saxton 2000; Saxton et al. 2005). What is critical is that the adult's version should match what the child intended, but contrast with it in form. This offers the child direct information in context about how to express that meaning and also identifies erroneous child forms (e.g., the choice of a wrong preposition: *en* in place of *dans*, say). Reformulations provide a source of information that helps children identify the relevant temporal dimensions of verb meaning, and so distinguish among such homophonous forms as /tɔ̃be/—*tomber* the infinitive and *tombé* the past participle.

Children are sensitive to the differences in construction that adults use with specific verb forms. This becomes apparent as children advance from single-word verb uses to more complex utterances where they begin to add clitic pronouns as subjects (see examples (34)—(38)) as well as modal verbs (examples (41)—(43)). While the immediate contrast between the child's verb and the adult's construal in context is likely to be particularly informative for the child (Clark 1988, 1990), children also hear many other uses of the same constructions in appropriate contexts from the adults talking with them. That is, adults continually present children with information about modulations on verb meanings through specific constructions—modulations that add information about distinctions of person, number, aspect, tense, and mood. And from these variants for each verb, children eventually discover the full nature of the verb paradigm. In the case of French, this means not only identifying the two major verb classes, but also the subclasses within each class (e.g., Le Goffic 1997; Dressler et al. 2006).

4.1 The discovery of verb paradigms

Once children have associated one particular verb form with an event-type, they can assign a preliminary basic meaning to that verb. But that is only the very first step in constructing a verb paradigm. The next step comes when children add a second form of the same verb. For example, their initial use of /tɔ̃be/ in completive contexts

may be supplemented by /tɔb/, a present tense form, with different distributions of these two forms in adult speech. Their paradigm building is also supplemented by the addition of pronoun subjects. These differ for first, second, and third-person forms even when the verb form itself appears to be the same (all three singular forms are pronounced /tɔb/), and also between singular and plural, where some forms differ. In the present case study, the infinitive/participle and the present tense (singular) are generally the first two contrasting forms to emerge for class 1 verbs. But a form like /tɔbe/ may remain indeterminate between an infinitival and a participial interpretation for some time in the child's speech, since the auxiliary verbs, *avoir* and *être*, used to mark past tense forms, enter only after the acquisition of several modal and future auxiliary forms.

Adult usage offers another means of distinguishing homophonous forms in class 1 verbs, namely use of their non-homophonous counterparts in class 3 verbs. When adults contrast the infinitive *mettre* with its past participle *mis*, children hear two distinct forms (and necessarily two meanings) for this class 3 verb, where they would hear only one form (with two meanings) for a class 1 verb. When the contexts share properties in common—an action that is anticipated vs. completed, say—these differences in form within a verb signal two different roles within the paradigm. As children add further forms for each verb, comparisons across both physical and linguistic contexts should help them construct a general paradigm for verb forms, across verb classes.

4.1.1 Asymmetries in adult usage

Adults do not use all the forms of each verb with equal frequency. Rather, the inherent meanings of verbs lead them to be grouped by event-types such as activities, accomplishments, achievements, and states. These event-types are distinguished by co-occurring tense and aspect marking and by the kinds of temporal phrase that can modify them (see Vendler 1967). And adults favour certain verb forms for certain verbs, as we have already noted. Such asymmetries in use have a clear impact on acquisition. The most frequently used form of a verb (the dominant form) is the one children acquire first, and that form provides their starting point in the construction of the verb paradigm.

Children acquiring French tend to use only one form of each verb for several months. They then start to add forms, so they may produce an infinitive or participle and a present tense form for a few verbs by age two. But this is just the start. They need to learn not only how the forms in the present versus past vary with person and number (when they do), but also how these forms differ from those for other tenses like the imperfect, the inflected future, the conditional, and so on. This depends in part on learning how specific verb forms can be used to organize events along a time-line, and how they function in narrative, for instance, for backgrounding vs. foregrounding an event (Berman and Slobin 1994; Bronckart and Sinclair 1973).

4.1.2 Regularity and irregularity: what counts?

In earlier discussions of regularity, researchers like Marcus et al. (1992), using English data, simply categorized verbs as regular or irregular, in the formation of the English past tense in their dual route model of morphological acquisition. In this model, children are assumed to rely on the regular paradigm as the default, only later learning each irregular form (but see Kuczaj 1977; Maratsos 2000). In most languages, though, what counts as irregular is more complicated. Verbs in one class (or subclass) may be regular across all the tenses in the paradigm, or they may be regular in one tense and irregular in another, a common occurrence in the Romance languages (e.g., Orsolini et al. 1998; Pizzuto and Caselli 1992). In French, over 90% of verbs belong to a class 1, a regular paradigm (with an *-er* infinitive), where the forms of all tenses, for instance, can be predicted from knowing just one or two reference forms (Carstairs-McCarthy 1992). The remaining verbs, in class 3, fall into a number of (often small) subclasses, where, for instance, for those in *-ir,* the full set of tenses can generally be predicted from a small number of reference forms, as in class 1 verbs. But the remaining class 3 verbs are generally irregular in a variety of different ways, and so require knowledge of many more such reference forms in order to grasp the full paradigm for a specific verb.

This can make the acquisition of a specific form like the past participle rather complicated: Children need to know which class—and subclass—a verb belongs to, and, for instance, what its infinitive is, in order to construct a past participial form. And many class 3 verbs have an irregular past participle. Yet, by age 5 or so, children are quite skillful at making use of the information given by the infinitive form as they construct past participles (de Marneffe 2009). Children face similar difficulties in establishing the present tense forms for each verb. We emphasize, again, that learning an initial contrast in meaning and form for a verb is just the beginning as children set out to construct verb paradigms.

4.2 Summary

This case study has traced one part of the route for children's acquisition of the homophonous forms for the infinitive and the past participle of first conjugation verbs in French. Their use of adult input, with the appropriate grammatical morphemes added to each of the homophonous forms and so distinguishing the infinitive from the past participle through the constructions they each appear in, suggests that adult construals play an important role in the course of acquisition. This is further supported by the information that adults offer about the relevant meaning/form relations for verbs from class 3. Class 2 verbs in *-ir*, for instance, have a regular contrast in form for the infinitive and the past participle (e.g., *finir* 'finish-Inf' vs. *fini* 'finish-PP', *saisir* 'take-Inf' vs. *saisi* 'take-PP', etc.). The distinction between the infinitive and past participle also holds for such common and frequently used irregular verbs in *-ir* as 'sit', 'come', and 'to take': *s'asseoir* versus *assis* ('sit-Inf', 'sit-PP'), *venir* versus *venu* ('come-Inf', 'come-PP'), *prendre* versus *pris* ('take-Inf', 'take-PP'). In short, when adults talk with young children, they offer verbs in constructions, with their concomitant grammatical forms. Since they use

these constructions with both class 1 and class 3 verbs, the different forms of class 3 verb infinitives and participles help disambiguate the analogous homophonous forms in class 1 verbs.

Children, we have argued, can start to solve the homophony problem for class 1 verbs in French by attending to the constructions used in the relevant adult construals, on the one hand, and to the patterning of the relevant meaning types within class 3 verbs, in the same constructions, on the other. The syntactic constructions used for talking about anticipated, ongoing, and completed events offer consistency of interpretation for the basic verb meanings plus the element of meaning added by the temporal relation between the speaker's utterance and the event, for all verbs in adult speech.

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