

In Torrens, V. & Escobar, L. (eds) (2006) *The acquisition of syntax in Romance languages*. Amsterdam: Johns Benjamins. pp23-49.

**On the acquisition of ambiguous Valency-Marking Morphemes: insights from the acquisition of French SE**  
Isabelle Barriere & Marjorie Perlman Lorch

**1. Introduction**

The study reported here focuses on an ambiguous Valency-Marking Morpheme, the French clitic SE that appears in Reflexive and Reciprocal (with animate subjects), Anticausative (no implied agent) and Middle-Passive (implied agent) (with inanimate subjects). On the basis of cross-linguistic findings on the acquisition of argument structure, a modified version of Borer & Wexler (1987) Maturation Hypothesis is proposed and enables us to test three predictions on a) the order of acquisition of different types of SE-constructions, b) the manifestations of overgeneralizations of argument structure alternations produced by children and c) the order of acquisition of SE-constructions and *be*-passives. These hypotheses are tested using a range of research strategies, including a) the analyses of a large corpus of speech production (3 diary studies, 2 CHILDES corpora, 2 cross sectional corpora of children aged between 2-4 and 6-7) collected on 200 children and b) two experimental tasks: a comprehension task (act-out) using existing verbs and a grammaticality judgment task using nonsense verbs that were administered to 2 groups of children, 18 aged 3-4 and 18 aged 5-6, and to 10 adults.

The results confirm the order of acquisition and the manifestations of overgeneralizations predicted by the Barriere Version of the Maturation Hypothesis. The relevance of this study for current accounts of the acquisition of argument structure- including Bowerman (1974) Causativity Hypothesis, the Semantic (Pinker, 1989) and the Syntactic (Landau & Gleitman, 1985, Gleitman, 1989) Bootstrapping hypotheses are discussed. It is argued that the considerations of ambiguous Valency-Marking Morphemes is essential to hypotheses that claim to be compatible with what is known about the nature of the input and cross-linguistically valid. The findings that emerge from this study are shown to shed light on the interpretation of implied arguments and to necessitate principles on the learnability of syncretic morphemes.

**2. Hypotheses on the acquisition of Argument Structure**

Since the seminal work of Bowerman (1974) much ink has been spilled on the acquisition of verb argument structure. At least four hypotheses have attempted to account for children's production, comprehension and grammaticality judgments of adult-like and unadult-like verb argument structures: Bowerman Causativity Hypothesis (Bowerman, 1974, Allen, 1996), the Syntactic Bootstrapping Hypothesis (Landau & Gleitman, 1985, Gleitman, 1989), the Maturation Hypothesis (Borer & Wexler, 1987) and the Semantic Bootstrapping Hypothesis (Pinker, 1989). These hypotheses differ along three dimensions: their conceptualizations of a) the contribution of the child, b) the cues that the events the child perceives provide and c) the information made available by the linguistic context.

According to Bowerman (1974) Causativity Hypothesis, children have a strong tendency to add CAUSE to their semantic representation of verbs and therefore to their representation of the event that the verb expresses. Thus if children are exposed to a new verb, for instance the nonsense verb *gorp*, whether they hear it in *the tiger gorps* or *the girl gorps the tiger* they will infer that it refers to an event that involves an instigator. Children are therefore more likely to match these two sentences to picture set 1 below, rather than picture set 2.

<INSERT PICTURE SET 1>

<INSERT PICTURE SET 2>

Bowerman (1974) proposed this Hypothesis to account for the overgeneralizations she identified in children's speech production in which some intransitives are used as transitive with a causative meaning (e.g. *giggle*) and some non-causative transitives are used as causative transitives (e.g. *eat* used to refer to *feed*).

The Semantic Bootstrapping Hypothesis (Pinker, 1989) differs from Bowerman Causativity Hypothesis in that instead of assuming that children have a tendency to add CAUSE it proposes that they have the ability a) to focus on salient aspects of events, b) to categorize events into different types such as causative versus non causative and c) to infer the intention of the speaker when interpreting a sentence. Thus when exposed to Picture set 1 above and to the sentence *the tiger is gorping*, depending on the focus of the speaker, children may either interpret it as *the tiger is drinking*, in which case the participant/thematic role assigned to *tiger* is the Agent or as *the tiger is being turned into a lion by the girl* in which case the tiger is assigned the role of the theme.

According to this Hypothesis overgeneralizations of argument structure alternations such as those identified by Bowerman (1974) mentioned above stem from one of three sources:  
a. children's semantic misrepresentations trigger overextensions;  
b. the semantic restrictions on lexical causative alternations fail to be noticed by children;  
c. or children entertain adult-like representations of the meaning and thematic roles associated with a verb but under discourse pressure they retrieve an inappropriate verb.

This Hypothesis fails to explain the patterns of overgeneralizations produced by Kiche (Pye, 1994) and Inuktitut (Allen, 1996) speaking children: in these two morphologically ergative languages, the unadultlike use of transitive causative by children involves

the production of inappropriate allomorphs rather than the retrieval of inappropriate verbs (see Barriere, Perlman Lorch & Le Normand, 1999, 2000, 2001 for discussion of these findings and for a new categorization of these overgeneralizations).

Both the Maturation Hypothesis (Borer and Wexler, 1987) and the Syntactic Bootstrapping Hypothesis (Landau & Gleitman, 1985, Gleitman, 1989) differ from the Semantic Bootstrapping Hypothesis in that they assume that the child applies an economy principle when hearing a verb and its arguments: they only assume that a participant is relevant only when it is explicitly expressed. When children hear a sentence such as *the tiger gorps*, they assume that the only important participant is *the tiger*. They would therefore map this sentence onto picture set 2 above, rather than picture set 1, that requires the postulation of an implicit argument mapping onto a participant.

In addition to this economy principle, the Maturation Hypothesis (Borer & Wexler, 1987) also relies on the distinction between two types of constructions, those that involve A-chains and those that do not. Constructions that involve A-chains result in the movement of the object - which is assigned the thematic role of Theme- to the subject position. In English this principle characterizes verbal as opposed to adjectival passives and the class of intransitive verbs- e.g. *break, move*- that can also be used as transitives (Burzio, 1986). The Maturation Hypothesis proposes that before around age 4, children do not have access to A-chains, which explains a) their lack of understanding of verbal passives (especially reversible ones- eg. *The cow was hit by the horse*- given that semantic cues such as animacy cannot be used to interpret the sentences) and b) their use of intransitives as transitives given their inability to distinguish between those intransitive that are underpinned by A-chains and those that are not (Borer & Wexler, 1987). While this Hypothesis also explains similar findings that emerge from the acquisition of verb argument structure by children acquiring Hebrew (Borer & Wexler, 1987) and Russian (Babyonishv et al., 2001), it fails to explain the early acquisition of passives (much before 4) in Kiche (Pye, 1994), Inuktitut (Allen, 1996) and Sesotho (Demuth, 1989, 1990).

At least two features that characterize these languages may explain the early acquisition of verbal passives. First, Inuktitut (Allen, 1996) and Sesotho (Demuth, 1990) differ from English in that in these languages short passives are not ambiguous. In English *the island was deserted* has two possible interpretations: a) an adjectival one referring to the properties of an endstate – which does not involve A-chains- and a verbal one that refers to an event and implies an agent (Wasow, 1977, Fellbaum & Zribi-Hertz, 1989). In contrast in Inuktitut (Allen, 1996) and Sesotho (Demuth, 1989, 1990) the counterpart construction is only verbal: it systematically implies the involvement of an agent. Secondly Kiche (Pye, 1994) and Inuktitut (Alle, 1996) are both morphologically ergative languages that make use of numerous, overt and systematic cues including verbal morphology and case-marking to indicate ‘who is doing what to whom’. Very young children acquiring Kiche have been shown to be sensitive to the morphological markers of their language (Pye, 1983) which they may use in order to interpret constructions involving A-chains before they have access to this linguistic principle, just like young English-speaking children make use of animacy features when interpreting irreversible passives, before they have access to A-chains.

It seems that in addition to A-chains, two factors have an effect on the acquisition of argument structure: a) the degree of ambiguity of a construction and b) the presence of overt and systematic cues indicating ‘who is doing what to whom’ that typically take the form of case-marking or verb morphology.

The Barriere Modified Version of the Maturation Hypothesis (henceforth BVMH) encompasses the two elements that make up Borer & Wexler (1987) Maturation Hypothesis- i.e. the economy principle and the late access to A-chains- and also considers a) the ambiguity of a construction- the more ambiguous the longer it will take to master and b) the fact that young children make use of overt and systematic cues when assigning participant roles to arguments.

### 3. French SE-cliticization and argument structure alternations

The French SE-clitic is an interesting test case for the BVMH for two main reasons. First, some SE-constructions involve A-chains while others do not. Secondly, French SE-constructions and short passives exhibit different degrees of ambiguity.

According to Wehrli (1986), SE- constructions that do not involve A-chains include: Reflexives, Reciprocal, and Inherent SE (i.e. verbs that always require SE cliticizations and cannot be used as transitives). An example of each of them is presented below.

- (1) *La fille se lave*  
The girl SE-3<sup>rd</sup> person singular wash  
The girl washes herself
- (2) *Les filles se battent*  
The girls SE-3<sup>rd</sup> person singular fight  
The girls fight with one another.
- (3a) *Marie s'evanouit*  
Marie SE-3<sup>rd</sup> person singular faints  
Marie faints
- (3b) *\*Pierre evanouit Marie*  
\*Pierre faints Mary

Two other SE-constructions involve A-chains: anticausative SE (illustrated in example 4b below) and Middle-Passive SE (illustrated in example 6b below). In both of these constructions the object- to which the role of theme is assigned- has moved to the subject position.

- (4.a) *J'ai rechauffé l'eau*  
I have warmed the water  
I have warmed up the water
- (4.b) *L'eau s'est rechauffée*  
The water SE-3<sup>rd</sup> person singular has warmed  
The water has warmed up
- (5.a) *J'ai refroidi l'eau*  
I have cooled the water  
I have cooled down the water
- (5.b) *L'eau a refroidi*  
The water has cooled  
The water has cooled down
- (6.a) *Je mange le chocolat en buvant du cognac*  
I eat chocolate while drinking cognac  
I eat chocolate accompanied with cognac
- (6.b) *Le chocolat se mange en buvant du cognac*  
Chocolate SE-3<sup>rd</sup> person singular eats while drinking cognac.  
Chocolate is best eaten accompanied with cognac

It is important to note the features that distinguish these two constructions. First the French Middle-Passive systematically implies the involvement of an animate agent, just like its English counterpart e.g. *This book reads well* (Wehrli, 1986, Fellbaum & Zribi-Hertz, 1989). Secondly, in contrast to English (e.g. *\*Greek writes easily*), all French transitive verbs except cognitive verbs can be used in Middle-Passive constructions (Wehrli, 1986, Fellbaum & Zribi-Hertz, 1989). Thirdly French Middle-Passive constructions systematically involve the use of SE-cliticization (Wehrli, 1986, Fellbaum & Zribi-Hertz, 1989). In contrast not all French transitive verbs can undergo the anticausative alternations (Zubizarreta, 1982, 1985, Wehrli, 1986, Fellbaum & Zribi-Hertz, 1989). Among those that undergo this alternation, some of them require SE-cliticization (as in example 4 above) while others do not (as in example 5 above). Finally Middle-Passive constructions tend to be used with non-punctual tenses while anticausatives are used with both punctual and non-punctual tenses.

With respect to the degree of ambiguity of these two constructions it is important to note that all verbs that can undergo the anticausative alternations involving SE-cliticization can also be used in Middle-Passive constructions, thus a construction such as *la branche se casse/the branch breaks*, just like its English counterpart, is ambiguous: it may or may not involve an agent.

In the literature on linguistic theory and acquisition this type of ambiguity has been discussed with respect to English short passives (e.g. Wasow, 1977, Borer & Wexler, 1987, among others). As explained in section 2, a construction such as *the island was deserted* may either give rise to a verbal passive interpretation, in which case it involves an implied agent or an adjectival interpretation in which case the sentence describes a property of *the island* and no agent is involved (Fellbaum & Zribi-Hertz, 1989). This ambiguity is triggered by a) the fact that the auxiliary *be* and the copula *be* share the same form and b) the fact that *-ed* is the morphological marker used to mark past participle and also a derivational morpheme used to form adjectives (as in *one-legged, uninhabited*). Although French short passives, like English passives, may also give rise to ambiguity, such ambiguity characterizes less constructions: the derivation of French adjective in *-é* is less productive than that in *-ed* in English (Fellbaum & Zribi-Hertz, 1989), thus less French past participles and adjectives share the same forms: for instance the ambiguous English past participle/adjective *deserted* is translated into French as *désert(e)* (adjective) or *déserté(e)* (past participle).

Given that the BVMH considers a) the lack of access to A-chains in the early stages of the acquisition of argument structure, b) the economy principle with respect to the assignment of thematic roles, c) the fact that children pay attention to Valency-Marking Morphemes and d) that the more ambiguous a construction, the longer it takes to be mastered, it enables us to formulate three predictions with respect to the acquisition of SE-cliticization and passives that are outlined below.

Given that Reflexive, Reciprocal and Inherent SE do not involve A-chains, they are expected to be acquired early by children. Although Anticausative SE involves A-chain, it does not require the postulation of an implicit argument, it is therefore also expected to be mastered early. In contrast, Middle-Passive SE involves both A-chains and the postulation of an implied argument, it is thus expected to be acquired late, after 4.

Prediction I: order of acquisition of SE-constructions

Reflexive/Reciprocal, Inherent and Anticausative SE are acquired before Middle-Passive SE.

The second prediction which the BVMH enables us to formulate concerns the manifestations of overgeneralizations of argument structure alternations. It is important to bear in mind that Prediction I is assumed, in that no overgeneralization of Middle-Passive constructions is predicted. A new classification of overgeneralizations first proposed by Barriere, Perlman Lorch & Le Normand (2000) to better account for overgeneralizations produced by children acquiring morphologically rich languages (including Hebrew, Inuktitut and Kiche) than the traditional distinction between Increased Valency and Decreased Valency (Figueira, 1984, Allen, 1996) is used here.

Predictions II: manifestations of overgeneralizations of argument structure alternations

1. Three types of \*Increased Valency

1. a) Use of intransitive verbs in the same form in transitive constructions (i.e. with NP objects or object clitics);

1. b) Overgeneralized \*SE-affixation when intransitives are assigned a Reflexive/Reciprocal interpretation;

1. c) Overgeneralized (\*) SE omission applied to Inherent SE-verbs when assigned a causative interpretation which requires transitivity;

2. Four types of Maintained Valency and (\*) SE-cliticization/omission

2. a) Overgeneralized (\*) SE omission applied to Inherent SE-verbs still used as intransitives;

2. b) Overgeneralized (\*) SE-cliticization applied to intransitive verbs (which do not allow transitivity): pattern of Inherent SE applied;

2. c) Overgeneralized (\*) SE-omission applied to verbs the Anticausative form of which requires SE-cliticization;

2. d) Overgeneralized (\*) SE-cliticization applied to Anticausative verbs which do not require SE-cliticization;

3. Two types of \*Decreased Valency

3. a) Overgeneralized (\*) SE-omission applied to transitive verbs the Anticausative form of which does not exist;

3. b) Overgeneralized (\*) SE-cliticization applied to transitive verbs the Anticausative form of which does not exist

It is important to note that since the number of Inherent SE-verbs is extremely limited in the adult language, 1.c is still expected to occur once children have access to A-chains (as demonstrated for a similar phenomenon in Hebrew by Borer & Wexler, 1987, see also a discussion in Barriere, Perlman Lorch & Le Normand, 1999).

Secondly, the hypotheses formulated above predict the overgeneralizations of an alternation-- the transitive/intransitive alternation which gives rise to Anticausative constructions-- which has been shown to be less productive than its surface counterpart in the adult grammar, i.e. the Middle-Passive. This should not be surprising in light of the acquisition findings that emerge from Hebrew (Berman, 1982, 1993, 1994) and Inuktitut (Allen, 1996) that demonstrates that productivity in the adult grammar does not systematically predict children's patterns of overgeneralization (see discussion in Barriere, Perlman Lorch and Le Normand, 2001, 2001).

While according to the Maturation Hypothesis (Borer & Wexler, 1987) lack of access to A-chains explains the late acquisition of *be*-verbal passives, the BVMH also considers the degree of overlap between homophonous constructions. Ambiguous constructions such as the short verbal *be*-passive and the adjectival *be*-passives, on the one hand and the Middle-Passive and Anticausative, on the other hand, have a different status with respect to A-chain formation and the Thematic Inference Principle. The Maturation Hypothesis predicts the order of acquisition outlined in Table 1 below:

<INSERT TABLE 1>

The BVMH makes slightly different predictions. The account presented above for SE-cliticization and *be*-passive has demonstrated that in French, Anticausative and Middle-Passive constructions exhibit a great degree of overlap while short verbal *be*-passive and adjectival *be*-passive exhibit a lower degree of overlap (Fellbaum & Zribi-Hertz, 1989). This fact is taken into account by the BVMH according to which the greater the overlap between two constructions, the more time it will take a child to acquire that which requires access to late acquired principles. Thus the BVMH enables us to formulate Prediction III below:

*Prediction III: the order of acquisition of SE-constructions and be-passives*

*Short be-passive and Anticausative construction are acquired before the long be-passive which in turn is acquired before the Middle-Passive.*

#### 4. Research strategies

In order to test the hypotheses listed above, two research strategies were used: the analysis of a large corpus of speech production data and the development and administration of two experimental tasks. The essential features of each of these are briefly outlined below.

Table 2 below presents the sources of spontaneous speech production data:

<INSERT TABLE 2>

Preliminary analyses of these corpora included a) the identifications of contexts in which SE occurs- i.e. utterances that contain verbs, b) identification of SE-constructions and c) a detailed assessment of the productivity of SE according to conservative criteria developed for the purpose of this study. These included the considerations of appropriate versus inappropriate uses of SE, whether it exhibited agreement with the subject (given that lack of agreement is ungrammatical in the adult grammar and that different person and number exhibit different forms), the relation of SE with its host (i.e. verbs) – including whether the same verbs appear with and without SE in the same speech sample, the placement of SE before the auxiliary and the verb (grammatical) or between the auxiliary and the verb (ungrammatical), the lexical innovations that involved the omission of SE with inherent SE-verbs and the use of SE with verbs that do not allow it- and self repairs (for details on this aspect of the study, see Barriere, Perlman Lorch and Le Normand, in press). The results show that the majority of children start using SE productively between 2;9 and 3;3 (See Barriere, Perlman Lorch & Le Normand, in press, for details).

The two experimental tasks were developed to test hypotheses that could not be fully tested on the analysis of speech production data, for reasons outlined in the sections below. The participants in these tasks included two groups of children: 18 (9 boys and 9 girls) aged between 3 and 4 (i.e. an age at which not all children are expected to have access to A-chains) and 18 (9 boys, 9 girls) between 5 and 6 (i.e. an age at which most children are expected to have access to A-chains) and 10 adults, 5 of whom were parents of the children. Relevant aspects of each experiment are presented in each section below.

## 5. Testing prediction 1: order of acquisition of SE-constructions

### 5.1 Analyses of speech production corpora

All the SE-constructions that appear in the speech production samples were categorized (see Barriere, Perlman Lorch & Le Normand, in press, b, for details of the categorization). While clear criteria could be established to distinguish between Reflexive/Reciprocal, Inherent and Anticausative/Middle-Passive SE constructions, no clear criterion could be systematically used to draw a distinction between Anticausative and Middle-Passive SE-constructions. The data analysis reveals that ambiguous Anticausative/Middle-Passive SE-constructions are more likely to be identified when children's use of SE-cliticization is productive than when it is not (see the summary of the results presented in table 3 below). In addition it is only in the cross-sectional corpus collected on 6 year olds that one instance of unambiguous Middle-Passive SE was identified. However three factors favor an Anticausative (no involvement of an agent) interpretation of the ambiguous Inanimate-SE-V constructions identified in children's samples: a) the absence of adverbials implying an agent, b) the semantic category of the verbs that appear in the constructions that can typically have the Anticausative alternation and c) the frequent use of punctual tense markers typically associated with Anticausative constructions.

<INSERT TABLE 3>

As predicted by both the Maturation Hypothesis (Borer & Wexler, 1987) and the BVMH, Reflexive/Reciprocal and Inherent SE are acquired early and a number of factors indicate that ambiguous Anticausative/Middle-Passive SE-constructions identified in children's speech samples are best interpreted as Anticausative. In order to test this Hypothesis further experimental evidence was collected.

### 5.2 Experimental evidence

Two tasks were developed: a comprehension task and a grammaticality judgment task. Relevant aspects of the procedure and of the results are summarized below.

The comprehension of Reflexive, Reciprocal and Middle-Passive SE-constructions by children and adults (see description of participants in section 4 above) was tested using an act-out task: participants were asked to enact sentences that contained either the verb *brush/brosser* or *laver/wash* using a set of toys. The context of the experiment encouraged a Middle-Passive interpretation of the Inanimate-SE V constructions as both verbs can be used in Middle-Passive constructions, *brosser/brush* in the adult grammar cannot be used in Anticausative constructions (in that it systematically implies the involvement of an animate agent) and it is difficult- if not impossible- to enact an Anticausative construction.

The training phase stimuli included sentences that were ambiguous with respect to the identity of the subject and the object. The purpose of this strategy was to check whether the difficulty children may experience acting out a Middle-Passive SE construction comes from the fact that it is ambiguous with respect to the identity of the implied agent.

All groups of participants perform significantly above chance when acting out the Reflexive/Reciprocal stimuli and the ambiguous control stimuli (that involve the use of subject clitics and object clitics- rather than lexically realized arguments). In contrast only the adults perform above chance (at ceiling) when enacting the Middle-Passive SE constructions.

This result partly supports prediction I in that it demonstrates that Reflexive/Reciprocal SE is understood before Middle-Passive SE. However it exhibits two limitations: a) as it relies on the understanding of existing verbs the results may reflect the participants' knowledge of these particular lexical items and the constructions in which they appear rather than general grammatical principles and b) it did not enable us to determine whether children understand Anticausative before Middle-Passive SE. In order to address this limitation a grammaticality task using nonsense verbs was developed for the purpose of this study (see details of this task in Barriere & Perlman Lorch, 2000 and in press). As in the experiment carried out by Pye & Quixtan Poz (1988) that test the comprehension of active and passive constructions by Kiche-speaking children, in order to neutralize the animacy factors, an animal was used in the roles of both agent and theme: in theories describing thematic roles on a scale the degree of agency of an animal is lower than a human (Gropen, 1990, among others). The 4 nonsense verbs used were representative of those appearing in Inanimate SE-V constructions in children's speech samples at a phonological, morphological and semantic levels. Given that visual stimuli were used, the change of state had to be visible: inspired by the stimuli used in Keil (1989) they depicted animals turning into other animals, including a tiger into a lion, a rat into a rabbit, a horse into a zebra and a dog into a cat. The set of visual stimuli depicted the tiger turning into a lion is reproduced below with the verbal stimuli illustrating the uses of one of the nonsense verbs. For the sake of clarity the pairs of verbal experimental stimuli are presented in the same order below. This does not reflect the order in which they were presented to children.

<INSERT PICTURE 3 HERE>

Puppet 1: la fille elle vile le tigre

Puppet 2: la fille elle vile le tigre

The girl, she gorps the tiger

Puppet 1: la fille elle le vile

The girl, she IT gorps

The girl she gorps it

Puppet 2: \*la fille elle lui vile

The girl she TO IT gorps

The girl she gorps to it

<INSERT PICTURE 4 HERE>

Puppet 1: le tigre il se vile

The tiger it SE gorps  
The tiger it gorps itself

Puppet 2: \*le tigre il vile  
The tiger it gorps

<INSERT PICTURE 5 HERE>

Puppet 1: les tigres ils se vilent  
The tigers they SE gorps  
The tigers they gorp each other

Puppet 2: \*les tigres ils vilent  
The tigers they gorp

<INSERT PICTURE 6 HERE>

Puppet 1: le tigre il se vile  
The tiger it SE gorps  
The tiger it gorps itself

Puppet 2: le tigre il vile  
The tiger it gorps

<INSERT PICTURE 7 HERE>

Puppet 1: le tigre il se vile  
The tiger it SE gorps  
The tiger it gorps itself

Puppet 2: \*le tigre il vile  
The tiger it gorps

The procedure used for this task is briefly outlined below.

Training phase for each picture set and verb

For each nonce-verb, each subject was:

1. Exposed to a set of pictures (set 3 above) depicting a causative event (causation of change of state) and to an auditory stimulus (when exposed to the second and third picture of the set, see Ambalu & Chiat, 1997 for the effect of verb timing on comprehension of verbs) which consisted of transitive constructions involving the use of lexically realized NP arguments;
2. Asked to describe this event: this aimed at checking that children related the drinking to the transformation and were therefore able to identify the causal relation between these two events: all children were able to do so;
3. Exposed to the same visual stimuli and two different constructions (Indirect object clitics versus Direct Object clitics) produced by two different puppets;
4. Asked to select and repeat the appropriate construction and provided with feedback. It is interesting to note that although no subject selected \*LUI constructions for all verbs, among the youngest subjects, four chose \*LUI for one of the verbs (this is not surprising in light of the findings of Carpentier, 1968 and Jakubowicz, 1991 according to which children make errors of cases in their speech production).

Experimental phase for each set of pictures and each verb

For each nonce-verb, each participant was:

5. Exposed in turn to sets of pictures depicting the Reflexive, Reciprocal, Anticausative and Middle-passive versions of this event (reflected in the depiction of the characters involved in the event);
6. Asked to describe the set of pictures to ensure that children "understood" the involvement of the participants in the event: for instance with respect to the Anticausative construction, that they did not imagine that the girl had caused the change of state but that she could not be seen, as this would not correspond to a Anticausative interpretation, i.e. a change of state not brought about by an agent. All children demonstrated an appropriate understanding of the event and the role of the participants involved.
7. to SE versus no SE- verb constructions produced by the puppets and asked to choose and repeat appropriate constructions.

The order in which they heard the LE/LUI (training phase 2) and SE/non-SE (experimental phase) constructions and the puppet who produced this utterance were counterbalanced. The mapping between the set of pictures and the nonce verbs and the order in which picture sets were presented were randomized across subjects.

An important characteristic of the stimuli that was taken into consideration in the analysis of the results below pertains to the grammaticality of the Anticausative with and without SE-cliticization. In contrast, in the adult grammar the other picture sets can only be mapped onto SE-constructions. Children's performance was compared to that of adults: adults select SE-constructions 100% of the time for Reflexive, Reciprocal and Middle-Passive events. In contrast, the percentage of selection of SE-cliticization for the Anticausative constructions is lower, which is not surprising given that some existing verbs Anticausative alternation involve SE-cliticization while others do not: the adult participants selected SE 77.5% of the time. The performance of the children was compared to that of the adults.

The performance of children was above chance on Reflexive and Reciprocal constructions and although there was a significant difference between the two groups of children, the significance of this difference was low and no significant difference was found between the 5-6 and the adults on Reflexive and Reciprocal. In contrast, children's selection of SE-clitic in the context of the Middle-

Passive event was below chance and significant differences were identified between the two groups of children and the 5-6 year olds and the adults. With respect to the Anticausative constructions, both the proportions of selection of SE and of correct replies (SE or no SE) were above chance.

The results of this experiment demonstrate that SE-cliticization is relatively systematically matched to Reflexive and Reciprocal events by children, but not to Middle-Passive events. When exposed to Anticausative constructions, most children choose a morphosyntactic construction found in the adult language. The results obtained by each participant were checked and none of them provides a higher percentage of correct replies on Middle-Passive than on Anticausative constructions. When exposed to an Anticausative version of the event no single child always chooses either SE or NO-SE constructions. Thus it seems that on the whole the developmental pattern predicted with respect to the order of acquisition of SE constructions was born out.

### 5.3 Conclusions

The analyses of speech production samples revealed that Inherent and Reflexive/Reciprocal SE constructions are produced by very young children, as soon as SE emerges. The limitation of this analyses is that it did not enable us to disambiguate between Anticausative and Middle-Passive SE constructions. The results of the comprehension task show that at an age when they understand Reflexive and Reciprocal SE, French speaking children do not understand Middle-Passive SE constructions. The grammaticality task using nonsense verbs further demonstrates that young children map SE-constructions to Reflexive/Reciprocal and Anticausative events more systematically than to Middle-Passive events. The order of acquisition predicted by the BVMH- Reflexive/Reciprocal, Inherent and Anticausative SE before Middle-Passive SE- is confirmed.

Borer & Wexler (1987) Maturation Hypothesis also predicts this order of acquisition while Bowerman (1974) causativity Hypothesis and Pinker (1989) Semantic Bootstrapping Hypothesis do not. According to Bowerman (1974) young children have a tendency to add CAUSE to the semantic representations of verbs. Thus the Anticausative events should be the one that French-speaking children find problematic and all the other events- Reflexive, Reciprocal and Middle-Passive- should be understood and mapped onto SE-constructions. Our results do not confirm this prediction: young children do not understand Middle-Passive SE and map SE-constructions less systematically to a Middle-Passive event than to an Anticausative one. In contrast, according to Pinker (1989) Semantic Bootstrapping Hypothesis, given young children's ability to categorize events and to attend to the focus of the speaker describing the event, all four – Reflexive, Reciprocal, Anticausative, and Middle-Passive- constructions should be produced, understood and mapped onto SE-construction by young children. Our results show that this is not the case.

## 6. Testing prediction 2: manifestations of overgeneralizations of argument structure alternations

### 6.1 Analyses of speech production corpora

Instances of \*Increased Valency, \*Maintained Valency and \*Decreased Valency were identified in the three sources of speech production data. Examples are briefly described and discussed below (for detailed discussion see Barriere, Perlman Lorch & Le Normand, 1999, 2000, 2001). Given that more contextual information was provided in the Diary Studies than in the Longitudinal Corpora, and in the Longitudinal Corpora than in the Cross-Sectional Corpora, it is important to bear in mind that the findings presented below may reflect this artefact of each source of data.

Among intransitives used as causative transitives in the same forms, the following verbs occur with NP objects: *tomber* 'fall' [2;5] (Grégoire, 1947, p137), *siffler* 'whistle' [4;6] (Mereasse-Polart, 1969) and *gigoter* 'fidget' [3;6] (François, 1978, p87). In the same speech sample, the verb *gigoter* 'fidget' also appears in the utterance(\*) *je me gigote* 'I SE-1st person singular fidget' in which the SE-affixation constitutes an instance of reflexivization. The same process of Reflexivization is applied to the verb *mourir* 'die' [3;2] (Grégoire, 1947). According to Grégoire (1947, p137) *mourir* 'die' is used causatively to refer to *tuer* 'kill'. The third type of transitivization is exhibited by the omission of Inherent-SE applied to the verb *s'envoler* 'fly away' [6;0] in the data collected by Mereasse-Polart (1969) where (\*)*envoler* is used as a causative to refer to 'make fly away' (p258).

The occurrences of the above examples in children's speech confirm Prediction II in that they exhibit the three types of overgeneralizations which our account predicts, namely: use of intransitive verbs in the same form with NP-objects or object clitics; ungrammatical SE-affixation applied to intransitive verbs when assigned a Reflexive/Reciprocal interpretation; ungrammatical SE-omission with inherent/intrinsic SE-verbs used as Causatives transitives.

Among instances of maintained valency, overgeneralized SE-omissions applied to Inherent SE verbs were applied to *dépêcher* 'hurry' [3;0] (Le Normand, 1986; 1996) and to *sauver* 'escape' [3;3] (Le Normand, 1986, 1996) (Note that given the context in which this verb was used- in alternation with *sortir* 'leave'- in the child's sample, it was clear that the child's intended meaning was *se sauver* 'to escape' - Inherent SE- and not *sauver* 'save' - a transitive verb which can appear with Reflexive/Reciprocal and Middle-Passive SE and without SE). With respect to the overgeneralization of the pattern of inherent SE, the two instances which were identified raise problems with respect to their classification. In the cross-sectional corpus, SE is affixed to the verb *nager* 'swim' [3;0] (Le Normand, 1986; 1996).

Among instances of overgeneralized ungrammatical SE-omissions applied to verbs the Anticausative form of which requires SE-affixation, the verb *couper* 'cut' [2;8] is reported to be used without SE as an intransitive (Grégoire, 1947). Instances of SE-affixation applied to Anticausative constructions which do not require SE-affixation were also identified. They include the use of *se commencer* 'start' [5;6] (Grégoire, 1947, p138) and *se fondre* 'melt' [3;9] (Le Normand, 1986; 1996).

With respect to decreased valency, ungrammatical SE-omissions applied to those verbs the Anticausative form of which does not exist were found. They included for instance the use of *mettre* 'place' as an intransitive [3;6] (Le Normand, 1986; 1996). Semantically,

other verbs that express changes of location undergo such an intransitivization process in the adult grammar, for instance *bouger* 'move'.

## 6.2 Conclusions

First, overgeneralizations were found to occur in children's speech samples that exhibit strong evidence of SE-productivity. Secondly instances of \*Increased Valency, \*Decreased Valency and \*Maintained Valency were identified and in most corpora more than one type of overgeneralizations was identified, although none of them were collected in order to investigate this issue. Therefore prediction II on overgeneralizations is confirmed.

Bowerman (1974) Causativity Hypothesis predicts only one type of overgeneralizations involving SE-cliticization, namely the omission of SE with inherent SE verbs that are used as causative transitives. It is not clear how Bowerman (1974) would also account for the other patterns of overgeneralizations involving SE-cliticization reported above.

On the basis of the Semantic Bootstrapping Hypothesis, as mentioned in section 5 above, the simultaneous acquisition of Anticausative and Middle-Passive would also be predicted, which is not confirmed by the outcome of the data analysis. In addition, three predictions can be formulated with respect to the children's ARGUMENT STRUCTURE ALTERNATION overgeneralizations, namely:

- a. children's misrepresentation would trigger overextensions: in this case overgeneralizations of both Anticausative and Middle-Passives (applied to Inherent-SE verbs for instance so that a construction like *l'oiseau s'envole* 'the bird INSE-flies away' i.e. 'the bird flies away' would be interpreted as 'the bird MPSE-flies away', i.e. 'someone makes the bird fly away') are expected;
- b. the semantic restrictions on the lexical causative alternations fail to be noticed by children: in this case overgeneralizations of Anticausative SE to verbs which do not allow this alternation and transitivization of Inherent SE are expected;
- c. Or they entertain an adult-like representation but under discourse pressure the inappropriate verb is retrieved: this is expected to give rise to lexical substitutions rather than \*SE-cliticization and \*SE-omission.

The analysis of overgeneralizations combined with the outcome of the experimental tasks reveal that overgeneralizations to Middle-Passives predicted by the first factor (a) mentioned above are not identified. With respect to the second prediction, while transitivization of Inherent SE are identified, overgeneralizations of Anticausative SE to verbs that do not permit this alternation are not found: all instances of overgeneralizations are found to occur with verbs that express a change of state or location, which the adult grammar allows. This is interesting given that it contrasts with the findings reported on Hebrew (1982), Kiche (1994) and Inuktitut (1996) according to which children's overgeneralizations do not reflect adult-like semantic restrictions. However, in order to gain better insights into the contrasting evidence that emerged from French, the chance that children produce semantically deviant constructions would have to be assessed.

Anticausative constructions produced by children are sometimes inappropriately used with or without SE by children, which leads us to the last prediction (c) formulated on the basis of the semantic Bootstrapping Hypothesis (Pinker, 1989). As in the case of Kiche (Pye, 1994) and Inuktitut (Allen, 1996), the overgeneralizations produced by French-speaking children do not involve lexical substitution but \*SE-cliticization and \*SE-omission.

## 7. Testing prediction 3: Order of acquisition of SE and *be-passive*

### 7.1 Introduction

The Maturation Hypothesis (Borer & Wexler) and the BVMH make different predictions with respect to the order of acquisition of SE and *be-passive* constructions. While the Maturation Hypothesis predicts that both French long *be-passives* and Middle-Passive are acquired simultaneously, after Reflexive/Reciprocal, Anticausative and short *be-passive*, the BVMH that also takes the ambiguity of constructions into account predicts that Reflexive, Reciprocal, Anticausative and short *be-passives* are acquired before long passives that in turn are acquired before Middle-Passives.

### 7.2 Analyses of speech production corpora

An analysis of all the speech production was carried out (see details reported in Barriere, Perlman Lorch & Le Normand, in press, b). Across corpora, no instance of long passives is reported, except in the oldest age group, and in 3 corpora- Fondet, Leveillé and Champaud- Anticausative SE and short passives are found to be used at a time when a) no long passive occurs; b) the linguistic context and/or semantic category of the verbs favour a Anticausative over a Middle-Passive interpretation of constructions involving Inanimate- SE+V. In the Le Normand corpus, all the groups of subjects (including those who exhibit no evidence of SE-productivity) are found to produce short passives, including those whose sample does not contain Anticausative constructions. However, the proportions of both Anticausative SE and short passives are much higher in the group who exhibits strong evidence of SE-productivity: 26% increase in the number of subjects who produce Anticausative SE and 31% increase in the number of subjects who produce short passives. The aim of this section was to test prediction III.

#### Prediction III

Short *be-passive* and Anticausative construction are acquired before the (reversible) Long *be-passive* which in turn is acquired before the Middle-Passive.

Given that only one unambiguous SE-construction and one long passive occur in the corpus collected on the oldest children and that they are not produced by the same child, assuming that all the occurrences of ambiguous Anticausative/Middle-Passives identified are best analysed as Anticausative, the empirical evidence supports the following aspects of Prediction III, namely:

Short Passives, Anticausative SE are acquired before (reversible) Long *be*-Passives and Middle-Passives.

Note that the François corpus provides evidence of the production of Short Passives and does not report the occurrence of Anticausative SE while in the LN corpus short passives are identified in the samples of children who are not found to produce Anticausative SE. However, this does not go against our Hypothesis which does not make predictions about the respective order of acquisition of these two constructions.

In order to investigate whether long *be*-passives are acquired before Middle-Passives alternative research strategies were adopted.

### 7.3 Experimental evidence

The experimental stimuli of the comprehension act-out task mentioned above included irreversible and reversible long *be*-passives, short *be*-passives and Middle-Passives. Given that the BVMH encompasses the Maturation Hypothesis it predicts/assumes that children will make use of semantic cues such as animacy when interpreting constructions such as passive: thus it predicts that children's performance on irreversible passives will be significantly better than on reversible passives in which animacy cues do not help bootstrap into the adult-like interpretation. Thus we focus here on the results obtained on long reversible *be*-passives, short *be*-passives, and Middle-Passives. The performance of the youngest age group is significantly better on short-*be* passives than on the reversible-*be* passives and Middle-Passives. On these two constructions, this group's performance is below chance. Both the Borer & Wexler (1987) Maturation Hypothesis and the BVMH predict these results. In contrast the performance of the 5 year olds is above chance for both the short *be*-passive and the long reversible *be*-passives but below chance on the Middle-Passives. This result is predicted by the BVMH but not by the Maturation Hypothesis that predicts simultaneous acquisition of both long reversible *be*-passives and Middle-Passives.

### 7.4 Conclusion

Neither Bowerman (1974) Causativity Hypothesis nor Pinker Semantic Bootstrapping Hypothesis would predict the late comprehension of Middle-Passives. Although Borer & Wexler (1987) Maturation Hypothesis predicts the late comprehension of Middle-Passives it predicts the simultaneous acquisition of long reversible passives and Middle-Passive which is not borne out by our results. The only hypothesis that predicts the order of acquisition of SE and *be*-passive constructions is the BVMH.

## 8. Conclusion

The examination of the acquisition of an ambiguous valency-marking morpheme- the clitic SE- by a large population of children investigated using different research strategies- analyses of speech production samples, comprehension and grammaticality judgment tasks- cast doubt on the cross-linguistic validity of Bowerman (1974) Causativity Hypothesis, Pinker (1989) Semantic Bootstrapping Hypothesis and Borer & Wexler (1987) Maturation Hypothesis.

## 9. Discussion

Like the Maturation Hypothesis, the BVMH was formulated within the P&P framework that encompasses the notion of A-chain. The aim of this section is to demonstrate that the consideration of ambiguous Valency-Marking Morpheme should be integrated to hypotheses on the acquisition of Argument Structure Alternation, whatever the linguistic theory used.

As emphasized by Pinker (1989), Landau & Gleitman (1985), Gleitman (1990), Ingham (1993) and Chiat (2000), two sources of information may be used by the child in order to acquire the Argument Structure of a verb, namely:

- a. The event that they observe
- b. The utterance that describes the event.

As Gleitman (1990) has convincingly argued, there is no one to one correspondence between these two sources of information and on the basis of her study of the acquisition of Argument Structure by blind children, Landau & Gleitman (1985) have demonstrated that the number, nature and distribution of lexically-realized arguments provide a more reliable source of information than the extra-linguistic context in which the utterance is produced. Gleitman (1990) notes:

*“the subcategorization frames, if their semantic values are known<sup>4</sup> can convey important information to the verb learner”* (p31).

It is hoped that this study of the acquisition of the French clitic SE has demonstrated that the child is also faced with Valency-Marking Morphemes which do not alternate with pronominal or nominal expressions to express the same meaning: in this sense Valency-Marking Morphemes are distinct from pronouns. These Valency-Marking Morphemes may be ambiguous in that they may or may not imply a thematic role (Inherent and Anticausative SE versus Middle-Passive SE) and in different constructions they involve distinct Thematic roles. The Syntactic Bootstrapping Hypothesis constitutes an attempt to formulate predictions that consider the nature of

---

<sup>4</sup> IB's emphasis

the input (Gleitman, 1990). Such consideration is essential to all language acquisition hypotheses (Pinker, 1989, Gleitman, 1990 and Atkinson, 1992). Although this attempt may be successful for the Syntactic Bootstrapping Hypothesis when focusing on English, it seems that this is not so when investigating the acquisition of other languages. The Syntactic Bootstrapping Hypothesis focuses on the number, nature and distribution of lexically realized arguments. However, working in a functionalist perspective, Du Bois (1985, 1987) has demonstrated that in a number of typologically different languages (including ergative-absolutive and nominative-accusative languages), the maximum number of arguments realized by an NP is one, even in transitive constructions. The other arguments are expressed using pronominal expressions and Valency-Marking Morphemes. French is no exception (Ashby & Bentoviglio, 1993). When taking into account this cross-linguistic phenomenon, it seems that the Syntactic Bootstrapping Hypothesis is untenable, given what is known about the nature of the input. French SE does not constitute an unusual case: the review of Hebrew (Berman, 1994), the re-analyses of Kiche (Pye, 1994) and Inuktitut (Allen, 1996) and the Argument Structure Alternation overgeneralizations and SE-cliticization reported in other Romance languages demonstrate that the limitation raised here applies to a number of typologically different languages. It is hoped that the limitation mentioned above in addition to the proposal for a more accurate categorization of overgeneralizations of Argument Structure Alternation constitute convincing arguments in favor of a hypothesis that considers morphological factors in the acquisition of Argument Structure Alternation.

In formulating the BVMH a number of assumptions that are relevant to a Morphological Bootstrapping Hypothesis for the acquisition of Argument Structure Alternation were adopted, namely: a) the conceptualization of the young child as a good morphologist; b) the role of the animacy of the lexically realized arguments in the interpretation of the Valency-Marking Morphemes; c) the role of the degree of ambiguity of two constructions on the pattern of acquisition; d) a default/unmarked assignment of thematic roles. Each of these assumptions is discussed separately below. Two recently published papers (Chiat, 2001 and Naigles, 2002) emphasize the challenge that the mapping between form and meaning constitute for a child. Both provide useful syntheses on infants' sensitivity to various phonological processes that help children bootstrap into the morphosyntax of their language. However both exhibit the same weakness: probably due to their focus on the acquisition of English, while they mention syntactic dependencies (Naigles, 2002) and the interface between morphology and phonology (Chiat, 2001), they fail to discuss the possible effects of different morphological processes on the form-meaning mapping involved in acquisition. The only cross-linguistic formal difference mentioned by Chiat (2001) as having an effect on acquisition is the phonological saliency of morphemes. Although this effect has been attested (see Demuth, 2000 and Lleo, 2000, that demonstrate the role of prosodic factors in the acquisition of inflectional morphemes), other factors may also be relevant.

In the generative framework, authors who adopt the Full Competence Hypothesis (Phillips, 1995, Wexler, 1998, Borer & Rohrbacher, 2002) – i.e. that children's early multi-word combinations are underpinned by adult-like phrase structure- appeal to the notion of morphological complexity in order to explain the earlier use of morphological (including case-marking, finite verb forms etc) marking in morphologically rich languages (see Morgan, Barrière & Woll, in press, for a comprehensive review of the cross-linguistic findings to date). Among the three factors that Phillips (1995) identify as relevant to the earlier emergence of functional categories in morphologically rich languages is the notion of paradigmatic complexity (p10, p50). As Phillips (1995) himself admits this is reminiscent of Slobin (1985) and Pinker (1984) (among others) according to whom children "learning more complex inflectional systems do so faster" (Phillips, 1995, p10). The within-individual cross-linguistic patterns of morphosyntactic development exhibited by German-English and Latvian-English simultaneous bilingual children are explained in similar terms by Sinka & Schelleter (1998): "the data show a developmental lead-lag pattern whereby functional categories emerge first in the more inflected language (German and Latvian) and later in English" (p301). However Phillips (1995) and Sinka & Schelleter (1998) differ in that the former places paradigmatic complexity at the interface between Performance and Competence: according to this account children's multi-word combinations in English or other languages does not provide evidence for a lack of knowledge (given the syntactic contexts in which the use of default versus adult-like forms occur) but for the inability to use the full morphological paradigms. In contrast, Sinka & Schelleter (1998) assume that the lack of use provides evidence for the lack of knowledge.

Whether *paradigmatic complexity* is a performance or a competence issue is debated in morphological theory (e.g. Carstairs-McCarthy, 1994, among others) although the authors mentioned above do not mention this literature. Secondly, *morphological richness* and *paradigmatic complexity* could refer to either or both a) the number of contrasts in meaning expressed through morphological processes and b) the number of sub-lexical morphological paradigms for a given lexical class and morph. One of the problems in attempting to disentangle these two factors is that in the languages that have been the focus of acquisition studies, they are typically confounded: Spanish, Latvian, German are morphologically richer than English with respect to both (a) and (b) mentioned above. Thirdly, it is unclear whether Phillips (1995) and Sinka and Schelleter (1998) consider that these factors have the same impact on comprehension and production. This study on the acquisition of French SE brings a contribution to the second factor (b) that may partly characterize paradigmatic complexity. According to this criterion Anticausative constructions in French are more complex than Reflexive, Reciprocal and Middle-Passive in two ways outlined in chapter II: a) Anticausative constructions are restricted to a subclass of transitive verbs while Reflexive, Reciprocal and Middle-Passive restrictions are systematically derived from the transitivity of the verb (Wehrli, 1986) and b) when the Anticausative alternation is allowed, it may or may not involve SE-cliticization whereas Reflexive, Reciprocal and Middle-Passive constructions systematically involve SE-cliticization (Fellbaum & Zribi-Hertz, 1989). The findings that emerge from a) the analysis of speech production in which adult-like and overgeneralized Anticausative constructions that involve \*SE-omission and \*SE-cliticization were identified and b) the results of the grammaticality judgment task which demonstrate that 3 and 5 year olds match the Anticausative versions of the event to constructions that either do or do not involve SE demonstrate that this aspect of the paradigmatic complexity does not predict the pattern of acquisition of SE, given that the less complex Reflexive and Reciprocal and the more complex Anticausative are produced and matched onto appropriate visual stimuli earlier than the less complex Middle-Passive. In this sense, although this study was not carried out to test which specific aspects of paradigmatic complexity contribute to morphosyntactic development, its results suggest that factor (b) does not have a delaying/protracting effect on acquisition. This result is not surprising given the reports on the acquisition of finite forms in Inuktitut (Crago & Allen, 2001) and of argument structure alternation both Kiche (Pye, 1994) and Inuktitut (Allen, 1996) that are complex with respect to this dimension and in which young children on the whole are shown to be able to produce sublexically appropriate morphological marking, despite some instances of overgeneralizations. However, the outcome of our analysis on the acquisition of SE provides more robust evidence: unlike the studies on Inuktitut, it relies on a range of research strategies, including the analyses of

speech production and experimental data, using real and nonce-words. Secondly the two experiments were better controlled than those conducted on Kiche (Pye & Quixtan Poz, 1988, Pye, 1994). The issue of paradigmatic complexity is further discussed below.

Finally, the roles of two other aspects of morphological processes are not discussed by Phillips (1995) and Sinka & Schellletter (1998), namely syncretism and fusion. Fusion is defined as “the morphological phenomenon in which a word consists of several morphemes but in which no one-to-one correspondance can be established between morphemes and morph” (Trask, 1993, p112). Although the challenge that this morphological process may present for the child has not been directly addressed, in descriptive linguistics the tendency for specific morphs to be fused has been noticed: for instance Comrie (1976) notes that in many of the world’s language the morphological marking of tense and aspect are fused. A number of studies in the literature have indirectly addressed this issue. In studies investigating the acquisition of English and Dutch (Hoekstra & Hyams, 1998, Wagner, 2002), the use of past tense markers is currently the focus of intense debates. For some authors (e.g Ingham, 1998, among others) young children first use them as an aspectual rather than temporal marker. The fusion between person agreement and tense marking in French has led Legendre et al. (2002) to devise a research strategy that attempts to distinguish between such marking in the analysis of children’s speech production. Finally Meisel & Ezeizabarrena (1996) suggest that fusion may facilitate the earlier acquisition of subject-agreement (fused with tense-marking) than object agreement (which does not undergo fusion) in Basque. In contrast, according to Imedadze & Tuite (1992), the fusional character of a few morphs in Georgian- on the whole an agglutinative language- delays their acquisition.

While the findings to date suggest that the sub-lexical dimension of paradigmatic complexity does not seem to explain the pattern of acquisition of functional categories and Argument Structure Alternation in Kiche, Inuktitut and French, the impact of fusion on the acquisition of Basque versus Georgian morphology is still debated.

This section has demonstrated that the current literature on the form-mapping process is paradoxical: when discussing the typically developing infant’s sensitivity to forms, Chiat (2001) and Naigles (2002) refer to specific phonological processes but they do not discuss the role of specific morphological processes. When infants’ sensitivity to morphology has been empirically examined (see Soderstrom, 2002 and Santelman & Jusczyk, 1998 who demonstrate 18-19 month olds’ preference for grammatical forms including in passages that contain nonce-words), the focus has been on a morphologically poor language and on morphological processes that exhibit relatively low paradigmatic complexity, while the literature on children’s production of languages that exhibits high paradigmatic complexity (with respect to case-marking and verb finiteness) demonstrate that this factor seems to have a facilitating effect, or at least does not delay acquisition despite the challenge it may place on the form-meaning mapping.

Despite the fact that little is understood with respect to the facilitating versus delaying effect of specific morphological processes, the studies of infants’ sensitivity to grammatical morphemes in a morphologically poor language and the timing of acquisition of inflectional morphemes in languages in which many meaning contrasts are expressed on the basis of morphological processes and that exhibit high paradigmatic complexity suggest that children aged 2 pay attention to morphological factors. This consideration is conceptualized here as the first constraint that children apply when exposed to constructions that involved both lexically-realized arguments and Valency-Marking Morphemes: when systematic mappings between thematic role assignment and morphology (including case-marking and presence and absence of Valency-Marking Morphemes) are exhibited in the language to which they are exposed, children make use of these cues although in the early stages their mapping may not be adult-like. The reliance on this strategy helps explain the findings that emerge on the relatively early acquisition of *be*-passive in morphologically ergative languages.

A number of findings in typologically different languages confirm that children are better morphologists than semanticists. French gender-marking provides a good opportunity to investigate children’s morphological abilities for the reasons outlined below: a) the gender assigned to the vast majority of nouns does not depend on their semantic features and b) the assignment of gender is much less predictable on the basis of the phonology than in other Romance languages such as Italian and Spanish. When carrying out her studies on the acquisition of gender-marking by French-speaking children, Karmiloff-Smith (1979) and Karmiloff-Smith et al. (1997) took these characteristics into account. As emphasized by Karmiloff-Smith et al. (1997, p249), the gender of inanimate words is arbitrary: the same objects can be described using nouns of different genders, for instance *le velo* ‘the-MASC bike’, and *la bicyclette* ‘the-FEM bicycle’. Although semantics is sometimes a predictor for animates with natural gender, as in the cases of *le monsieur* ‘the-MASC gentleman’, *la dame* ‘the-FEM woman’, it “*can be overridden by grammatical gender*” (Karmiloff-Smith, et al. 1997, p249), as illustrated by the examples *la victime* ‘the FEM victim’, *le professeur* ‘the MASC professor’ that refer to both males and females. Word endings can often predict the gender assigned to the nouns: for instance *-ute* constitutes a typical feminine ending as attested by the examples *la flûte* ‘the FEM flute’, *la chute* ‘the FEM fall’. However, as mentioned by Karmiloff-Smith et al. (1997, p249), this only constitutes a tendency. So for instance the gender assignment to some nouns overrides the tendency: for instance *le parachute* ‘the MASC parachute’ is assigned a masculine gender despite its typically feminine ending. Despite its partial irregularity and its complexity given the broad range of endings that characterize French nouns, when deprived of other cues including articles, pronouns and adjectives, adults make use of word endings in order to assign gender to novel nouns (Karmiloff-Smith et al. , 1997, p249). The study carried out by Karmiloff-Smith et al. (1997) demonstrates that young children tend to make use of these formal cues rather than semantic ones in order to assign gender to novel nouns and that between 4 and 5 their mastery of the gender system is almost adult-like.

Another area in which young children have been shown to be sensitive to morphology is the marking of noun types in Bantu languages. These markers share a common characteristic with the French gender system: although historically such markers depended on semantic factors, this is no longer the case (Demuth, 1992). Secondly as (and even more so than) in the case of French gender agreement, the assignment to one class of nouns versus another has all kinds of consequences for the marking of adjectives and verb agreement, pronominal expressions and relatives with different forms corresponding to the different classes of nouns (Demuth, 1992). One of the issues that the study of the acquisition of these markers has raised is the use of semantics by children. In her thorough review of the literature on this topic, Demuth (1992) notes that the role of semantics in their acquisition “*has been largely rejected by all the researchers*” (p588). With respect to the age at which they seem to be used productively and appropriately, it is interesting to note that across a range of Bantu languages, they seem to be mastered between 2;6 and 3: it is also at this age that an increase in the productivity of SE-cliticization was noticed in our analyses of speech production samples. Although French SE-cliticizations and

Bantu noun classes concern different aspects of the morphosyntax, they both pertain to the morphological marking of subcategories and concern phonologically weak items. Another interesting finding that Demuth (1992) mentions is the fact that when instances of overgeneralizations are produced by 4 year olds, they rely on the phonological and morphological features of the nouns rather than on their semantic features (Demuth, 1992, p593).

It seems that between 2 and 3, at the age when children expand their vocabulary, including their verb lexicon, they make use of morphological cues, at least in their acquisition of the French gender system and of the Bantu noun classes. One objection could be raised here against the use of these two sources of evidence as relevant and supporting the use of the same cues in the acquisition of verb Argument Structure: they both involve the acquisition of morphemes which are best described as semantically empty. In contrast in the case of SE-cliticization and other Valency-Marking Morphemes, a semantic mapping between the assignment of thematic roles and the morphological marking is required. A third example of early sensitivity to morphological marking is briefly presented below, that of the acquisition of Argument Structure Alternation in Hebrew. For the purpose of this section, it is relevant to note that according to Berman (1986, 1994), between 2 and 3, although children assign the appropriate number of arguments and thematic roles to verbs, they do not systematically use adult-like morphological patterns. It is around 3 that Hebrew-speaking children start to show evidence of productive use of Argument Structure Alternation, especially of non-causative/causative alternations. Between 4 and 5 the productive use of these morphological patterns to mark Argument Structure Alternation give rise to overgeneralizations and lexical innovations (Berman, 1993/4). Interestingly, Berman (1994) also notes the fact that overgeneralization patterns are not based on semantic cues. The fact that children's overgeneralizations do not seem to be driven by semantic cues was also noted with respect to the Inuktitut data.

In this section, evidence that children are sensitive to morphology from as early as 3 in 3 different areas, ie. gender and noun-class assignments and Argument Structure Alternation- and in typologically drastically different languages has been presented. In light of these findings, the results obtained on our analysis of the emergence and productivity of SE-cliticization are not surprising, as they show that around 2;6-3 the vast majority of children's speech samples exhibit evidence of the productivity of SE-cliticization. Although the 3 linguistic phenomena mentioned above are distinct, like SE-cliticization they all involve subcategorization features applied to lexical classes.

In addition, a number of findings, including those that emerge from a) the acquisition of Argument Structure Alternation in morphologically rich languages, b) the acquisition of tense-marking (as a temporal or aspectual marker) (Behrend, Harris & Cartwright, 1995, Wagner, 2002) suggest that Naigles (2002)'s conclusions that "*learning form is easy, but learning meaning, and especially linking meanings and forms, is hard*" (p157) may be rephrased in the case of 2/2;6 children as "*learning form is easy, but learning [all] [adult-like] meanings, and especially linking meanings and forms [in an adult-like way], is hard*".

One of the assumptions in this study was the role of animacy features in children's interpretation of constructions, which in the case of irreversible passives enables them to reach an adult interpretation at a time when they do not have access to the principles underlying these constructions. In this study, animacy features of the grammatical subject were expected to play an important role in SE-constructions: animate-SE-V were not expected to be treated in the same way as inanimate-SE-V by young children. It is interesting to note that Jakubowicz (1991), for instance, in her picture-matching task assumes that the only possible interpretation of animate-SE-V is Reflexive: she does not even mention the possibility that were children insensitive to animacy features, such constructions would be ambiguous between Reflexive or Anticausative/Middle-Passive.

Findings that emerge from different aspects of morphosyntactic development and obtained by researchers with different theoretical approaches have demonstrated that young children are sensitive to animacy, a semantic feature tied to volition and control (Corrigan, 1988, Pinker, 1989, Gropen, 1990). According to Imedadze & Truite (1992), the analysis of Georgian-speaking two year olds' speech production provides evidence that they "*grasp the relationship between animacy and number agreement*" (p94) that characterizes the adult grammar. The literature on the acquisition of passives has also provided evidence of the children's use of animacy features in their interpretation of these constructions. More recently, Forbes & Poulin-Dubois (1997) have shown that 1;8 children extend the use of verbs to which they have been familiarized to other agents, but not to the same events carried out in a different manner or having a different outcome. The findings of Dodson & Tomasello (1998) demonstrate that children make use of the animacy features of grammatical subjects in producing Argument Structure Alternation (p619). Wagner (2002) also found that agency plays an important role in children's understanding of completion entailments.

The results obtained on the comprehension (act-out) task provide evidence of children's use of animacy features in the interpretation of SE-constructions: it is only in 3 cases that Inanimate-SE-V constructions were interpreted as Reflexive and Reciprocal.

It is interesting to note that an aspect of the status of animacy that may have been overlooked in the acquisition literature is the following: in the case of SE constructions, children paying attention to the animate features of the subject do not interpret Animate-SE-V in the same way as Inanimate-SE-V and considering this semantic feature they come up with different interpretations. In drawing a distinction between constructions that share the same surface forms depending on the animacy features of the grammatical subject they apply a distinction that is found in the adult language. This is not only the case of the interpretation of French-SE constructions. The two uses of *open* in examples 7a and 7b will help illustrate our point:

- (7a) John opened  
(7b) The door opened

In the adult-grammar, the grammatical subject in 7a is likely to be interpreted as an Agent while in 7b it would typically be interpreted as a Theme. A young child interpreting these sentences paying attention to the animacy features of the subject will entertain the same interpretations as an adult. The Argument Structure Alternation illustrated by the constructions with *open* mentioned above is lexically restricted in English while in the cases of both the French Reflexive/Reciprocal and the Middle-Passive, this phenomenon applies to all transitive verbs.

There is one pair of constructions for which this distinction does not hold and this is the case of irreversible and reversible passives, both in French and in English. In ergative languages, young children are able to appropriately use (Inuktitut) and understand (Kiche) passives. One of the distinctions between these ergative languages and French and English is that in the constructions exemplified in 7a and 7b, different case-markers (and different verbal forms) would be used and provided children pay attention to morphological markers – which they do according to the findings that emerge from the literature- they would not entertain the default interpretation that English and French-speaking children first entertain. Thus it seems that, given the empirical evidence reported in the field, the semantic feature animacy plays a crucial role in children's verbal comprehension, and this feature may especially be used as a default strategy when no relevant morphological cues are available.

The main difference between Borer & Wexler (1987) Maturation Hypothesis and the BVMH lies in the consideration of the degree of ambiguity of constructions that plays a role in the latter but not in the former. First it is interesting to note that while lexical ambiguity has been considered in the literature on the acquisition of the lexicon (Baksheider & Gelman, 1995), it has been much less discussed in its own right in relation to morphological development, although, a) this phenomenon has contributed to the current debates on children's use and understanding of tense markers, b) it has given rise to research strategies that attempt to distinguish morphs expressed by a single form and c) it has been assigned contradictory effects.

In this section, hypotheses which have made specific developmental predictions on the basis of the relation between forms and meaning are presented and discussed.

The relation between form and meaning may be characterized in three ways, namely:

- a. 1 form = 1 meaning
- b. > 1 form = 1 meaning
- c. 1 form > 1 meaning

Although this characterization also applies to lexical items and syntactic units, our discussion focuses on morphology. The issues of whether linguistic theory should say anything about morphological paradigms (i.e. whether it belongs to the realm of Competence or Performance) and if it does whether the relations characterized as (b) and (c) are random or constrained (e.g. whether syncretism is principled in the sense that it tends to apply to certain morphs, for instance or to specific cells in the paradigms) (Carstairs-McCarthy, 1994) are debated in morphological theory.

In the literature on acquisition, two hypotheses have been proposed that consider the meaning-form relations listed above relevant. Each of them is briefly outlined below. Karmiloff-Smith (1976, 1983, 1986) proposed a 2-phase developmental pattern according to which between 3-5, relation (c) above is excluded and between 7-10, it is no longer excluded. With respect to lexical development some findings on children's acquisition of homonyms (Bakscheider & Gelman, 1995) have been shown not to support this Hypothesis. With respect to morphosyntactic development, the findings that emerge from this study on French SE and former studies on the acquisition of Romance SE (Gathercole, 1990; Jakubowicz, 1991) do not support this Hypothesis. According to Jakubowicz (1991), the fact that SE exhibits syncretism with respect to case-marking would explain the earlier acquisition of this clitic, compared to object clitics LE and LUI that do not exhibit such syncretism. The problem with the account proposed by Jakubowicz (1991) is that syncretism does not constitute the only difference between SE and LE/LUI.

A different Hypothesis- *the Principle of Contrast*- has been proposed by Clark (1987, 1988, 1990, 1993). This principle – '*every 2 forms contrast in meaning*' (Clark, 1987, p2)- is said to guide acquisition, thus it predicts that in the early stages of development, meaning-form relation characterized as (b) above is excluded. This principle was originally proposed to account for lexical development, but as mentioned by Carstairs-McCarthy (1994), there is no reason why it should not be applied to morphological development. With respect to morphological development there are at least two ways to interpret the Principle of Contrast (Carstairs-McCarthy, 1994). According to the first interpretation, *more than 1 form* can be interpreted as more than one allophone/allomorph, regardless of the lexical item or lexical class. If the Principle of Contrast is to be interpreted in this way, the acquisition literature reports much evidence that does not support it: the findings that have emerged from both the acquisition of functional categories and Argument Structure Alternation in morphologically rich languages demonstrate that (b) does not guide the morphological development of 2 year old children. In addition, this study which documents the acquisition of Anticausative constructions (an instance of (b) above, given that some verbs involve SE-cliticization, while others do not in this construction) *before* the acquisition of Middle-Passive (which systematically involves SE-cliticization), demonstrates that at least the first interpretation of this principle does not account for the acquisition pattern.

According to Carstairs-McCarthy (1994) the Principle of Contrast Hypothesis can also be captured as integrating the inflectional class membership as part of the meaning-- "*under tight conditions- namely if it unambiguously identifies the inflection class of the lexemes to which it attaches*" (p737). Carstairs-McCarthy (1994) proposes a number of principles that the child may use in order to identify inflectional classes and that are shown to be compatible with the Principle of Contrast. Assessing the validity of Carstairs-McCarthy (1994)'s proposal on the basis of the empirical findings on the acquisition of inflectional morphology would require access to details on the morphological paradigms across languages that are not systematically provided in the literature and are beyond the scope of our discussion. Carstairs-McCarthy (1994) does not discuss the application of his proposal to Valency-Marking Morphemes. However, given the importance the author assigns to class membership identifiers, it is unclear how the idiolectal and dialectal variations that French Anticausative exhibits would be dealt with by children: given that the same lexeme may or may not be cliticized SE in this construction depending on one's dialect or idiolect, it should constitute a major challenge for the child (see Imedadze & Tuite, 1992 for evidence that such dialectal variation with respect to inflectional morphology may delay the acquisition of some markers in Georgian and Morgan, Barrière & Woll, in press on the possible effects of the occurrence of both inflected and non-inflected verbs in Child Directed Signing on the acquisition of agreement morphology in British Sign Language). The findings that emerge from the data analysis show that unstable Anticausative constructions are acquired before stable Middle-Passive constructions, suggesting that it does not constitute a major challenge for the child. While such idiolectal and dialectal variation with respect to the expression of

Argument Structure Alternation, including Valency-Marking Morphemes, has been discussed in linguistic theory, it has been not been addressed with respect to hypotheses on the acquisition of Argument Structure Alternation and/or the characterization of the input (Lieven, 1999, Bowerman, 1999).

Given a) what is currently known about the roles of morphological processes in the acquisition of functional categories and subcategorization features and b) the lack of explanatory power of and empirical support for hypotheses that mainly rely on the characterization of form-meaning relations, the consideration of the degree of ambiguity of constructions is relevant *only once the other factors mentioned above and that include sensitivity to morphological patterns and animacy features of the lexically realized arguments do not permit the disambiguation of a construction involving a Valency-Marking Morphemes*. This issue is relevant to the issue of positive evidence, the only type of evidence children are supposed to have access to according to Learnability Principles (Wexler & Culicover, 1980, Pinker, 1989). Given, as mentioned above, the lack of one to one correspondence between utterances and the events they refer to, the higher the degree of ambiguity between two utterances, the longer it will take to gain access to an alternative interpretation, when the two other principles mentioned above do not play a role in the disambiguation process.

The Thematic Inference Principle assumed in this study states that in the process of acquisition, a Thematic role is assumed by a learner only if it can be assigned to an appropriate phrase in the sentence (Borer & Wexler, 1987). In a way, this assumption is compatible with the Syntactic Bootstrapping Hypothesis (Landau & Gleitman, 1985) and the experimental findings that provide evidence in favour of this Hypothesis. While the Syntactic Bootstrapping Hypothesis makes prediction on the cues children use when first exposed to a verb and its arguments, both the MH and BVMH assume that children classify verbs into categories that differ from those of adults. Borer & Wexler (1987) convincingly invoke learnability theory to support the necessity of this assumption. In the context of what is known about a) children's vocabulary development, b) the unsystematic mapping between utterances and the events they refer to and c) the unpredictability of verbs (Fisher et al., 1994, Gillette, et al., 1999), the implication of this assumption for our study deserves our attention.

First it is important to note that one of the limitations of this study on Argument Structure Alternation lies in its focus of Agents and Themes: this applies to most acquisition studies, including those carried out on Inuktitut (Allen, 1996), Kiche (Pye, 1993/4) and most experimental studies carried out on English, including those using the Preferential Paradigm (Golinkoff et al. 1987; Naigles, 1996). One has to bear in mind that when faced with the task of assigning Thematic roles to verb arguments, children are confronted with different possibilities that are not limited to Agents and Themes (see Jackendoff, 1985, for an account of Thematic roles compatible with the Principles and Parameters framework used here). However, given that the SE constructions under investigation differ in their assignments of these two thematic roles, the discussion below is limited to the assignment of Agents and Themes.

According to Fisher et al. (1994) and Gillette et al. (1999), the degree of predictability of nouns is much higher than that of verbs and according to the Syntactic Bootstrapping Hypothesis, children pay attention to the position, the number and the semantic features of the argument(s). Two examples of SE-constructions are presented below with a nonce-verb, to illustrate the point:

- (8.a) Jeanne elle se gabe  
Jeanne SE-nonce verb
- (8.b) La voiture elle se gabe  
The car SE-nonce verb

The adoption of the assumptions outlined above on children's sensitivity to morphological markers and animacy would predict that on hearing the construction exemplified by 8a, children are likely to interpret the subject as an Agent, that is an animate being who exhibits volition and control. In addition, given that the child may have been exposed to *gabe*+ DO, and *gabe* on its own referring to events involving different participants (as they were in the grammaticality judgment task), and to other similar constructions with the same type of arguments used with a different verb, it is reasonable to assume that the child may gain access to the Reflexive interpretation (see also Borer & Wexler, 1987 for a discussion on Reflexives). It is interesting to note that a finding recently reported by Dodson & Tomasello (1998) suggests that this assumption is correct: a Russian-speaking child exposed to a transitive construction involving the use of LRAs subsequently spontaneously produced a Reflexive form of this verb. This finding confirms Borer & Wexler (1987) in that it demonstrates the child's ability to derive Reflexivization from a) the transitivity of the verb and b) the animacy of the subject.

In contrast, in the construction exemplified in 8b, one of the semantic features that characterizes the lexically realized external argument is its inanimacy. However, unlike in the case of the Reflexive, at least two mappings are possible: with or without underlying agent. A few findings that emerge from the data analyses seems to support the consequence of the Thematic Inference Principle, i.e. the fact that in the grammaticality judgment task, when confronted to a nonce-verb, children are more likely to assign an event corresponding to the Anticausative a SE-construction than to the event involving an agent, corresponding to a Middle-Passive. Note that until they have access to A-chains, it seems that children would not be provided with many cues as to the validity of their interpretations: a great number of verbs occur in both Middle-Passive and Anticausative construction (Fellbaum & Zribi-Hertz, 1989) and in both cases the subject is a Theme. The adoption of the most restricted interpretation with respect to the number of Thematic roles is in line with the learnability principle referred to as the Subset Principle discussed in the literature according to which it is logically necessary to assume that children start with the most constrained possibility (Wexler & Culicover, 1980, Pinker, 1989). In addition, the consideration of Agent and Themes presented here is compatible with the empirical findings that emerge from Angiolillo & Goldin-Meadow (1982) regarding the existence of these roles in young children representations and with the principles derived from the Universal Thematic Assignment Hierarchy (see van Kampen, 2002, among others).

It is relevant to note that although the issue of implicit arguments has been discussed in the acquisition literature, it has focused on implicit objects- that is the presence versus absence of lexically realized arguments- as opposed to ambiguous Valency-Marking Morphemes (Resnik, 1996).

To summarize the sections above, Morphological Bootstrapping is best captured as a hierarchy of principles that are predicted to apply to the acquisition of Valency-Marking Morphemes and according to which:

- i. young children pay attention to morphological cues including case-marking, and Valency-Marking Morphemes, a) although the meaning they assign to these Valency-Marking Morphemes may not be adult-like in the early stages of acquisition and b) the sublexical dimension of paradigmatic complexity does not delay the acquisition of Valency-Marking Morphemes;
- ii. Animacy features of lexically realized arguments in constructions that involve the use of Valency-Marking Morphemes play a role in constraining the assignment of thematic roles to lexically realized arguments and Valency-Marking Morphemes, when factors under (i) (i.e. morphological factors) do not provide systematic cues regarding Thematic Role assignment;
- iii. The ambiguity of Valency-Marking Morphemes only contributes to the acquisition patterns if factors (i) and (ii) above do not enable to disambiguate a construction;
- iv. In cases when Valency-Marking Morphemes is ambiguous in that it may or may not imply a Thematic Role, young children apply the Thematic Inference Principle as a default strategy.

Just like Syntactic Bootstrapping may be an inappropriate label in that there is much more to syntax than the number, type and position of lexically realized arguments, Morphological Bootstrapping may also be an inappropriate label for the principles that have been outlined above, in that they constitute principles that are thought to apply to morphosyntactic- in the linguistic sense- cues that may include a number of formal features, not limited to morphological cues. For instance, although this study has focused on SE-cliticization, the selection of auxiliary ETRE/BE versus AVOIR/HAVE (Rouveret, 1998, Legendre, 2003) also constitutes a formal cue French-speaking children may make use of when making predictions on the sub-lexical category to which a verb belongs. It is hoped that the principles outlined above constitute the first step in considering factors in addition to the number, type and nature of arguments in children's subcategorization of verbs.

Ambiguous Valency-Marking Morphemes are found in a number of typologically different languages. The study of their acquisition, taking into account the principles outlined above, would enable us to further explore the acquisition of these types of linguistic items and would enable us to investigate the factors that have been identified as relevant to their acquisition.

The study of the evolution of syncretism between Pidgins and Creoles would also provide useful insights into this broader linguistic phenomenon, i.e. that are not limited to Valency-Marking Morphemes. On the basis of the Morphological Bootstrapping principles outlined above and contrary to Karmiloff-Smith (1979, 1982 and 1986) and Clark (1987), it would be predicted that high degrees of syncretism and paradigmatic complexity could be found in the first creole generation and that such syncretism would be constrained by the principles outlined above, at least with respect to Valency-Marking Morphemes involved in Argument Structure Alternation.

Finally, although Middle-Passive constructions are found in a number of typologically different languages, their acquisition has received little attention. When their early (Hebrew) or late (Inuktitut) acquisition have been reported, no explanatory account has been proposed. In order to fully understand the acquisition of actives and passives, the pattern of development of Middle-Passives must also be understood. It is hoped that this study, which reports and attempts to explain the acquisition of the French Middle-Passive, provides a first systematic step in this direction and that the specific contribution of the study of its acquisition in French lies in the fact that it shares the same surface structure as a number of SE-constructions, including the Anticausative (no agent). It has thereby been shown to constitute a challenge to current hypotheses on the acquisition of Argument Structure Alternation that need to be improved in order to encompass the full range of linguistic phenomena these SE-constructions involve.

## References

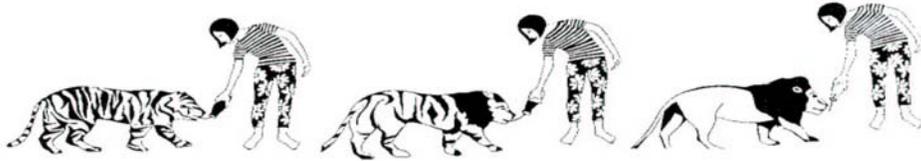
- Allen, S.E.M. 1996. *Aspects of Argument structure acquisition in Inuktitut*. Amsterdam: John Benjamins.
- Ambalu, D., Chiat, S. & Pring, T. 1997. "When is it best to hear a verb? The effects of the timing and focus of verb models on children's learning of verbs" *Journal of Child Language* 24: 25-34.
- Angiolollo, C.J. and Goldin-Meadow, S. 1982. "Experimental evidence for agent-patient categories in child language". *Journal of Child Language* 9: 627-643.
- Anderson R.T. 1998. "The use of reflexive constructions by Spanish-speaking children: differences across functions". *Applied Psycholinguistics* 19: 498-512.
- Ashby, W.J. and Bentivoglio, P. 1993. "Preferred Argument Structure in Spoken French and Spanish". *Language Variation and Change* 5: 61-76.
- Atkinson, M. 1992. *Children's syntax: an introduction to principles and parameters theory*. Oxford: Blackwell.
- Backscheider, A. G. and Gelman, S. A. 1995. "Children's understanding of homonyms". *Journal of Child Language* 22: 107-127.
- Barrière, I. in press. New perspectives on semantic and syntactic bootstrapping and on the acquisition of the passive: a view from the French middle". *Cognition*.
- Barrière, I., Perlman Lorch, M. & Le Normand, M.T. in press. "The acquisition of Argument Structure Alternations by French-speaking children: evidence from the production of different passive and SE constructions". *Applied psycholinguistics*.
- Barrière, I., Lorch, M. P. and Le Normand, M.T. in press. "On the early production of argument structure alternations: evidence from the acquisition of SE-cliticization by French-speaking children". *Journal of Child Language*.
- Bassano, D. 2000. "Early development of nouns and verbs in French: exploring the interface between lexicon and grammar". *Journal of Child Language* 27: 521-559.
- Bassano, D., Maillochon, I. and Eme, E. 1998. "Developmental changes and variability in the early lexicon: a study of French children's naturalistic production". *Journal of Child Language* 25: 493-531.
- Behrend, D.A., Harris, L.L. and Cartwright, K.B. 1995. "Morphological cues to verb meaning: verb inflections and the initial mapping of verb meanings". *Journal of Child Language* 22: 89-106.
- Berman, R.A. 1982. "Verb-pattern alternation: The interface of morphology, syntax and semantics in Hebrew child language" *Journal of Child Language* 9: 169-191.
- Berman, R. A. 1993. "Marking of verb transitivity by Hebrew-speaking children". *Journal of Child Language* 20: 641-669.
- Berman, R.A. 1994. "Developmental perspectives on transitivity: a confluence of cues". In Y. Levy (Ed.) *Other children, other languages: Issues on the theory of language Acquisition*. NJ: Lawrence Erlbaum.
- Borer, H. and Rohrbacher, B. 2002. Minding the absent: arguments for the Full Competence Hypothesis. *Language Acquisition* 10: 123-175.
- Borer, H. and Wexler, K. 1987. "The role of Maturation in the Explanation of Linguistic Development" in *Parameter Setting and Language Acquisition*, T. Roeper and E. Williams (eds.), 123-169. Dordrecht: Reidel.
- Bowerman, M. 1974. "Learning the Structure of Causative verbs: a study in the Relationship of Cognitive, Semantic and Syntactic Development". *Papers and Reports on Child Language Development*: 8: 142-178.
- Bowerman, M. 1999. "Oral Communication. Symposium on Argument structure". *8<sup>th</sup> Conference of the International Association for the Study of Child Language*, San Sebastian.
- Carpentier, C. 1968. *Etude grammaticale du langage des enfants de 3, 4 et 5 ans*. Travail de fin d'étude, Université de Liège.
- Carstairs-McCarthy. 1994. "Inflection classes, gender and the Principle of Contrast". *Language*: 70: 737-788.
- Chiat, S. 2000. *Understanding children with language problems*. Cambridge: Cambridge University Press.
- Chiat, S. 2001. "Mapping theories of developmental language impairment: premises, predictions and evidence". *Language and cognitive processes* 16: 113-142.
- Clark, E.V. 1985. "The Acquisition of Romance, with Special Reference to French." In *The Cross-linguistic Study of Language Acquisition*, D. Slobin (Ed.). New Jersey: Lawrence Erlbaum.
- Clark, E.V. 1987. "The Principle of Contrast: a constraint on language acquisition". In *Mechanisms of language acquisition*, B. MacWhinney (ed.), 1-33, New Jersey: Lawrence Erlbaum.
- Clark, E.V. 1988. "On the logic of contrast". *Journal of Child Language* 15: 317-335.
- Clark, E.V. 1990. "On the pragmatic of contrast". *Journal of Child Language* 17: 417-431.
- Clark, E. 1993. *The lexicon in acquisition*. Cambridge: Cambridge University Press.
- Comrie, B. 1976. *Aspect*. Cambridge: Cambridge University Press.
- Crago, M. and Allen, S.E.M. .2001. "Early finiteness in Inuktitut: the role of language structure and input". *Language acquisition* 9: 59-111.
- Crysmann, B. & Müller, N. 2000. "On the non-parallelism in the acquisition of reflexive and non-reflexive object clitics". In *The Acquisition of Clause Internal Rules: Scrambling and Cliticization*, C. Hamman and S. Powers (eds.). Dordrecht: Kluwer.
- Demuth, K. 2000. "Prosodic constraints on morphological development". In *Approaches to bootstrapping- Vol. 2*. J. Weissenborn and B. Höhle (eds.), 4-21. Amsterdam: John Benjamins.
- Demuth, K., Machobane, M. and Moloji, F. 2003 "Rules and constructions effects in learning the argument structure of verbs". *Journal of Child Language* 30: 797-821.
- Dodson, K. and Tomasello, M. 1998. "Acquiring the transitive constructions in English: the role of animacy and pronouns". *Journal of Child Language* 25: 605-622.
- DuBois, J.W. 1985. "Competing motivations". In *Iconicity and syntax*, J. Haiman (ed.), 343-365. Amsterdam: John Benjamins.
- DuBois, J.W. 1987. The discourse basis of ergativity. *Language* 63: 805-855.
- Fellbaum, C. and Zribi-Hertz, A. 1989. *The middle construction in French and English: a comparative study of its syntax and semantics*. Bloomington: Indiana University Linguistics Club Publications.
- Fisher, C. 2002. "The role of abstract syntactic knowledge in language acquisition: a reply to Tomasello (2000)". *Cognition* 82: 259- 278.
- Fisher, C., Hall, D.G., Rakowitz, S. & Gleitman, L. 1994. "When is it better to receive than to give: syntactic and conceptual constraints on vocabulary growth". *Lingua* 92: 333-375.
- Fondet, C. 1979. *Un enfant apprend à parler: Récit et analyses d'un apprentissage de la langue maternelle de la naissance à six*

- ans. Dijon: les Presses de l'Imprimerie Universitaire.
- Forbes, J.N. and Poulin-Dubois, D. 1997. "Representational change in young children's understanding of familiar verb meaning". *Journal of Child Language* 24: 389-406.
- François, F. 1978. "Syntaxe, lexique et contraintes formelles". In *La Syntaxe de l'Enfant avant 5ans*. F. François, D.François, E. Sabeau-Jouannet and M. Sourdot (eds). Paris: Larousse.
- Gathercole, V.C. 1990 "Multifunctional SE; course of development in Spanish children". *Papers and Reports in Child Language Development* 29, 46-53.
- Gillette, J., Gleitman, H. Gleitman, L. and Lederer, A. 1999. "Human simulations of vocabulary learning" *Cognition* 73: 135-176.
- Gleitman, L.R. 1989 "The structural sources of verb meaning". *Papers and reports on Child Language Development* 28: 1-48.
- Golinkoff, R., Hirsh-Pasek, K., Cauley, K. & Gordon, L. 1987 "The eyes have it: lexical and syntactic comprehension in a new Paradigm". *Journal of Child Language* 14: 23-45.
- Grégoire, A. 1939. *L'apprentissage du langage, Vol.1*. Paris: Droz.
- Grégoire, A. 1947. *L'apprentissage du langage, Vol. 2*. Paris: Droz.
- Gropen, J. 1990. Bootstrapping from agency: early notions of agency according to Pinker's semantic bootstrapping hypothesis. *Papers and Reports in Child Language Development* 29: 148-155.
- Hamman, C., Rizzi, L. and Frauenfelder, U. H. 1995. On the acquisition of the pronominal system in French. *Recherches linguistiques de Vincennes* 24 : 83-102.
- Heinen, S. and Kadow, H. 1990. "The acquisition of French by monolingual children: a review of the literature". In *Two First Languages: Early Grammatical Development in Bilingual Children*, J. Meisel (ed.). Dordrecht: Foris.
- Hoekstra, T., and Hyams, N. 1998. "Aspects of root infinitives". *Lingua* 106: 81-112.
- Horrocks, G. 1987 *Generative grammar*. London: Longman.
- Imedadze, N. and Tuite, K. 1992 "The acquisition of Georgian". In *The cross-linguistic-study of language acquisition, Vol. 3*, D. I. Slobin (ed.), 39-109. New Jersey: Lawrence Erlbaum.
- Ingham, R. 1993 "Critical influences on the acquisition of verb transitivity". In *Critical influences on child language acquisition and development*, D. Messer and G. Turner (eds.), 121-139. New York: St Martin's Press.
- Ingham, R. 1998. "Tense without agreement in early clause structure". *Language Acquisition* 7: 51-81.
- Jackendoff, R. 1985. *Semantics and Cognition*. Cambridge, MA: MIT Press.
- Jackson-Maldonado, D., Maldonado, R. and Thal, D.J. 1998. "Reflexive and middle markers in early child language acquisition: evidence from Mexican Spanish". *First Language* 1: 403-429.
- Jakubowicz, C. 1991. "L'acquisition des anaphores et des pronoms lexicaux en français". In *Grammaire Générative et Syntaxe Comparée*. J. Guéron and J. Y. Pollock (eds.). Paris: CNRS.
- Kaiser, G.A. 1990. "More about INFL-lection and Agreement" In *Two First Languages: Early Grammatical Development in Bilingual Children*, J. Meisel (Ed.), 47-72. Dordrecht: Foris.
- Karmiloff-Smith, A. 1979 "Micro- and macro-developmental changes in language acquisition and representational systems" *Cognitive Science* 3: 91-118.
- Karmiloff-Smith, A. 1983. "Language acquisition as a problem-solving process". *Papers and Reports on Child Language Development* 22.
- Karmiloff-Smith, A. 1986. "From meta-processes to conscious access: Evidence from children's metalinguistic and repair data" *Cognition* 23: 95-147.
- Karmiloff-Smith, A., Grant, J., Berthoud, I., Davies, M., Howlin, P. & Udwin, O. 1997. "Language and Williams Syndrome: How intact is "intact"?" *Child Development* 68: 246-262.
- Koenig, J. P., Mauner, G. and Bienvenue, B. 2003. Arguments for adjuncts. *Cognition* 89: 67-103.
- Landau, B. and Gleitman, L.R. 1985. *Language and experience: Evidence from the Blind child*. Cambridge, MA.: Harvard University Press.
- Legendre, G. 2003 "Optimizing auxiliary selection in Romance". Oral presentation, University of California, Davis.
- Legendre, G. Hagstrom, P., Vainikka, A. and Todorova, M. 2002. "Partial constraint ordering in Child French syntax". *Language Acquisition* 10: 189-227.
- Le Normand, M. T. 1986. A developmental exploration of language used to accompany symbolic play in young normal children. *Child: care, health and development* 12: 121-134.
- Le Normand, M.T. 1996. "Le Paradigme du pronom personnel chez l'enfant entre 2 et 4 ans: l'accès à la morphologie".. *Les Cahiers du Cresleff*, Université de Franche-Comté.
- Lidz, J., Gleitman, H. & Gleitman, L. 2003. Understanding how input matters: verb learning and the footprint of universal grammar. *Cognition* 17: 171-178.
- Lieven, E. 1999. "Oral Communication. Symposium on Argument structure". *8<sup>th</sup> Conference of the International Association for the Study of Child Language*, San Sebastian.
- Lieven, A.V.M., Pine, J.M., Baldwin, G. 1997 "Lexically based learning and early grammatical development". *Journal of Child Language* 24: 187-217.
- Lleó, C. 2000. "The interface of Phonology and Syntax: the emergence of the article in the early acquisition of Spanish and German". In *Approaches to bootstrapping- Vol. 2*. J. Weissenborn and B. Höhle (eds.), 23-44. Amsterdam: John Benjamins.
- MacWhinney, B. 2000 *The CHILDES project: tools for analyzing talk*. New Jersey: Lawrence Erlbaum.
- Martinot, C. 1998 "Développement de la construction argumentale des trois verbes essentiels: mettre, prendre, donner". *Langue Française* 118 : 61-83.
- Meisel, J. and Ezeizabarrena, M. 1996. "Subject-Verb and Object-Verb Agreement in Early Basque". In *Language acquisition: empirical findings, theoretical considerations, cross-linguistic comparisons*. H. Clahsen (ed.), 201-239. Amsterdam: John Benjamins.
- Morgan, G., Barrière, I. & Woll, B. in press "The roles of modality and typology in the acquisition of verb morphology in British Sign Language". *First Language*.
- Müller, N., Crysmann, B. & Kaiser, G.A. 1996. Interactions between the acquisition of French object drop and the development of the C-system. *Language acquisition* 5, 35-63.

- Naigles, L.R. 1996. "The use of multiple frames in verb learning via syntactic bootstrapping". *Cognition* 58: 221-251.
- Naigles, L.R. 2002. "Form is easy, meaning is hard: resolving a paradox in early child language". *Cognition*, 86: 157-199.
- Naigles, L.R. and Lehrer, N. 1999. "Cross-linguistic similarities and differences in the acquisition of argument structure: a comparison of French and English". *Paper presented at the VIIIth Congress of the International Association for the Study of Child Language, San Sebastian.*
- Naigles, L.R. and Lehrer, N. 2002. "Language-general and language-specific influences on children's acquisition of argument structure: a comparison of French and English". *Journal of Child Language* 29: 545-566.
- Parisse, C. and Le Normand, M.T. 2000. How children build their morphosyntax: the case of French. *Journal of Child Language* 27: 267-292.
- Phillips, C. 1995. "Syntax at age two: cross-linguistic differences". *MIT working papers in linguistics* 26: 37-93.
- Pinker, S. 1989. *Learnability and Cognition: the Acquisition of Argument Structure*. Cambridge, MA: M.I.T Press.
- Pye, C. 1994. "A cross-linguistic approach to the causative alternation". In Y. Levy (Ed.) *Other children, other languages: Issues in the theory of language acquisition*. New Jersey: Lawrence Erlbaum.
- Resnick, P. .1996. "Selectional constraints: an information-theoretical model and its computational realization". *Cognition* 61: 127-159.
- Santelman, L. and Jusczyck, P. 1998. Sensitivity to discontinuous dependencies in language learners: evidence for limitations in processing space. *Cognition* 69: 105-134.
- Sinka, I. and Schelleter, C. 1998. "Morphosyntactic development in bilingual children". *International Journal of Bilingualism* 2: 301-326.
- Slobin, D.I. 1985 *The cross-linguistic study of language acquisition*. New Jersey: Lawrence Erlbaum.
- Soderstrom, M. 2002. *The acquisition of inflection morphology in early perceptual knowledge of syntax*. Unpublished PhD dissertation, Johns Hopkins University.
- Suppes, P, Smith, R., Leveillé, M. 1973. "The French syntax of a child's noun phrases". *Archive de Psychologie* 42: 207-269.
- Tomasello, M. 1992. *First verbs*. Cambridge: Cambridge University Press.
- Tomasello, M. 2000. "Do young children have syntactic competence?". *Cognition* 74: 209-253.
- Trask, R.L. 1993 *A dictionary of grammatical terms in linguistics*. London: Routledge.
- van Kampen, J. 2002 "Language-specific bootstraps for UG principles". Paper presented at *BOOT-LA workshop*, Indiana University, Bloomington.
- Wagner, L. 2002. "Understanding completion entailments in the absence of agency cues". *Journal of Child Language* 29: 109-125.
- Wehrli, E. 1986. "On some properties of the French clitic SE". In *The Syntax of Pronominal Clitics, Syntax and Semantics*, vol. 19. H. Borer (Ed.). Orlando: Harcourt Brace Jovanovich.
- Wexler, K. 1998. "Very early parameter setting and the unique checking constraint: a new explanation of the optional infinitive Stage". *Lingua* 106: 23-76.
- Wexler, K. & Culicover, P. 1980. *Formal principles of language acquisition*. Cambridge, MA: MIT press.
- Zubizarreta, M. L. 1982. *On the relationship of the lexicon to syntax*. Dordrecht: Foris.
- Zubizarreta, M. L. 1985. "The relation between morphophonology and morphosyntax: the case of Romance causative". *Linguistic Inquiry* 16: 247-289.

Pictures to be inserted

Picture set 1



©MariaSmall

Picture set 2



©MariaSmall

Picture set 3



©MariaSmall

Picture set 4



©MariaSmall

Picture set 5



©MariaSmall

Picture set 6



©MariaSmall

Picture set 7



©MariaSmall

TABLES TO BE INSERTED

Table 7: Order of acquisition of be-passives and Middle-Passives as predicted by the Maturation Hypothesis

Before access to A-chains	<ul style="list-style-type: none"><li>- Adjectival <i>be</i>-passive</li><li>- Anticausative</li></ul>
Access to A-chains	<ul style="list-style-type: none"><li>- Adjectival <i>be</i>-passive</li><li>- Verbal <i>be</i>-passive</li><li>- Anticausative</li><li>- Middle-Passive</li></ul>

Table 2: sources of speech production data

Corpus	Long. versus Cross-sectional (CS)	Recording of Data	Transcription	Number of subjects	Age range
Grégoire (1939-47)	Long.	Note-taking	Phonetic (1st 2 years) –then Orthographic	2 Males	0 to 3;6 0 to 3;3
François (1978)	Long.	Note-taking	Phonetic and Orthographic	1 Female	0;10 to 3;6
Fondet (1979)	Long.	Note-taking (and some recordings)	Phonetic and Orthographic	1 Male	0 to 6
Leveillé	Long.	video-rec.	Orthographic	1 Male	2;1 to 3;3
Champaud	Long.	video-rec.	Orthographic	1 Male	1;9 to 2;5
Le Normand (1986; 1996)	CS	video-rec.	Orthographic	360 (1/2 Male, 1/2 Female in each group)	2 to 4
Mereasse-Polart (1969)	CS	audio-rec	Orthographic	72	6-7

Table 3: Categorization of SE-constructions that pertain to Prediction 1 across corpora  
(and in relation to SE-productivity)

Corpora		Evidence of Productivity (None, weak, strong)	Ref/Rec	Inherent	(Ambiguous) Anticausative/ Middle Passive	Unambiguous Middle/ Passive
D I A R I E S	Grégoire Ch. [from 2;4;31]	strong	+	+	-	-
	Grégoire Ed. [from 3;0;30]	strong	+	+	-	-
	François [from 3;0]	strong	+	+	-	-
	Fondet [from 2;5]	strong	+	+	+	-
C H I L D E S	Leveillé [from 2;1.26]	strong	+	+	+	-
	Champaud [2;5]	strong	+	+	+	-
C R O S S - S E C T I O N A L	LN (n=11) [2-3;3]	none	+	-	-	-
	LN (n=35) [2-4]	weak	+	+	+	-
	LN (n=73) [2-4]	strong	+	+	+	-
	MP [6-7]	(strong)*	+	+	+	+