The Acquisition of Tense and Agreement

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0. INTRODUCTION

The acquisition of syntax has been explained by several theoretical frameworks. Some of these models explain the process of acquisition through principles of adult grammar, like the Theory of Principle and Parameters (Hyams, 1983, 1992; Roeper & Williams, 1987). Alternative models are based on other components of language such as semantics or pragmatics (Bates & MacWhinney, 1987; Bloom, 1991; Bowerman, 1973; Ninio & Snow, 1996). For epistemological reasons, the model of Principles and Parameters was preferred in this research because it is the most parsimonious model and can explain most of the data. Taking into account the available data, models based on other components of language do not justify the need to postulate a child's grammar as being different from an adult's grammar. The proposal of a different grammatical knowledge assumes stages of development that imply big difficulties and mechanisms of change which, in some cases, these models cannot describe and, in others, don't justify the need. In the section on theoretical plausibility in the Discussion, different arguments are presented to propose that the Continuity Models are more suitable.

There has been a debate surrounding the Minimalist framework about sentence structure in children during an early stage. Different proposals try to present a model of this structure. One proposal is based on the so-called Maturation Hypothesis (Felix, 1984, 1987; Radford, 1988, 1990), which proposes that the principles of a child's grammar are not available in the early stages and these principles develop as the child grows. In this proposal we can differentiate several models: the strong version proposes that a child's grammar does not match any adult's grammar (Felix, 1984, 1987), while the weak version proposes that children's grammar is always a possible adult grammar (Borer & Wexler, 1987, 1992; Wexler, 1992, 1998). In the strong version of the Maturation Hypothesis we find the proposal that the acquisition of language depends on the maturation of functional categories like Tense, Agreement, the Complementizer and the Determinant (Lebeaux, 1988; Radford, 1988, 1990). Following this proposal, children's grammar does not have functional categories.

On the other hand, the Continuity Hypothesis (Hyams, 1983, 1992; Pinker, 1984) postulates that all universal principles are present in

children's grammar from the early stages. The changes in a child's grammar, like parameter settings, are due to the *input*. One of the consequences implied by the Continuity Hypothesis is that children's grammar includes all functional categories, and therefore the same sentence structure as an adult's grammar, containing Tense Phrase, Agreement Phrase and the Complementizer Phrase (Hyams, 1992; Poeppel & Wexler, 1993; Weissenborn, 1990).

In this research I assume the Continuity Hypothesis, which proposes that sentences produced by children have the functional categories of Tense and Agreement, and therefore verbs agree for Tense and Agreement. I also assume that the functional category Tense is a maximal projection, and therefore can be occupied by preverbal subjects. In addition, the placement of the category of Negation Phrase in children's grammar is predicted to be correct. Finally, I assume that the subject sentences produced by children will check nominative case in Tense Phrase. This research focuses on the acquisition of Spanish and Catalan. Previous studies on language acquisition in Spanish have been carried out, although from very different theoretical perspectives (Clemente, 1982; Cortés & Vila, 1991; Solé, 1984; Triadó, 1982).

In the theoretical section I have included the different models of the acquisition of syntax in Minimalism. In the empirical section I have described the assumptions on which this research is based and, following the theoretical model, I present the hypothesis and predictions from the Continuity Hypothesis. The design and procedure I used in this research are also presented. In the results section, I compare the predictions with the data collected, and I analyze the data that might contradict the predictions. In this section I have included some research carried out in Spanish and Catalan, as well as studies in other languages where relevant. Prediction nº 1 deals with Agreement; predictions nº 2 and 3 deal with Tense; prediction nº 2 deals with the contexts where finite and non-finite verbs are produced; prediction nº 3 deals with the placement of clitic pronouns; and prediction nº 4 deals with the properties of negation and the placement with respect to the verb. In order to study the existence of Agreement Phrase, prediction nº 5 deals with the presence of preverbal subjects, which also sheds light on the acquisition of Nominative Case. Finally, prediction nº 6 deals with the use of personal pronouns that check Nominative Case.

In the Discussion, I present the results from research carried out in other languages. The goal of the first part is to study the empirical plausibility of the hypothesis based on the generalization of the results to

different languages. The second part of the section deals with the theoretical implications for the Continuity Hypothesis and the Maturation Hypothesis. Finally, in the Conclusion I present the arguments carried out in the research, along with the results.

1. THEORETICAL MODELS

The generativist framework (Chomsky, 1981, 1986, 1995, 2001) proposes that grammar is composed from a set of general principles and different modules with specific properties, and that grammatical knowledge is the result of the interaction of the different modules. Even though we think of language as a set of modules separated from cognition, it has been accepted that both can interact (Roeper, 1988).

Universal principles (i.e., the Subjacency Principle, the Theory of Control, and the Principle of Full Interpretation) determine the variation of parameters (e.g., the Null Subject Parameter and the Head Directionality Parameter) which allow the existence of different languages. The different values of the parameter assume a set of common properties in the languages that share the same value.

Therefore, the process of language acquisition is defined by a set of innate knowledge: a subset of universal principles and a subset of parameters that can take different values. The task of a child is to choose the correct values of the parameters of the language the child is acquiring; this is the view of the Theory of Parameter Setting (Roeper & Williams, 1987). The selection of the correct values is through positive evidence, that is, by the sentences produced by adults. The Learnability Theory (Wexler, & Culicover, 1980; White, 1982) is the model that tries to describe a feasible way of this process taking place.

Two main hypotheses of language acquisition will be presented within the generativist framework: the Continuity Hypothesis and the Maturation Hypothesis.

1.1. The Continuity Hypothesis

The Continuity Hypothesis, following Hyams (1983, 1992a) and Pinker (1984), proposes that all universal principles are present from the beginning of the process of language acquisition. Changes in grammatical knowledge in children, i.e., restructuring (Wexler & Culicover, 1980), are the result of the input of children. With respect to the structure of the sentence, this proposal assumes that the child has all functional categories at the beginning of the language acquisition process, which determines that the child's sentence has the same structure as the adult's. This

hypothesis, also proposed by Weissenborn (1990), is the Full Clause Hypothesis (Hyams, 1992b), which Poeppel & Wexler (1993) call the Full Competence Hypothesis.

1.1.1. The subset principle and the trigger

Following the Continuity Hypothesis, the subset principle and the concept of trigger have been proposed in order to explain the acquisition of language. Languages can have a certain value for each parameter. The subset principle proposes that the number of productions that are generated from the value of a parameter in every language is a subset of the number of productions generated by another value of that parameter in another language. Figure 1 exemplifies the subset principle:

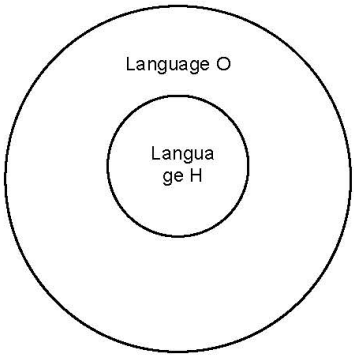

Figure 1. The subset principle, where H is the subset of the productions generated by the grammar of children, and O is the set of the productions generated by the grammar of the language the child has to learn.

The first value in the child's grammar for each parameter corresponds to the value of the parameter that produces the smaller language. In this manner, if the value of the parameter is not correct, the child will know, because adults produce sentences that do not belong to the subset generated by the value of the parameter in the child's grammar. Instead, if the child's grammar has the value of the parameter that produces the biggest set of sentences, and the child does not have the correct value of the parameter, the productions of adults could not supply enough information to change the value of the parameter. Triggers supply

relevant information to acknowledge which language the child is exposed to.

The null subject parameter is a good example of this principle. This parameter describes the fact that some languages can omit the subject of sentences containing a finite verb (languages with this value, such as Italian, Spanish or Catalan, are called *pro-drop*), whereas in other languages it is obligatory to produce the subject of the sentence (languages in this group, such as English or French are called *non-pro-drop*). In addition to this property, languages with the same value for this parameter also share other properties: *non-pro-drop* languages have explicit expletive pronouns, whereas these do not exist in *pro-drop* languages.

The smallest language can only produce sentences with an explicit subject whereas the biggest language allows sentences with or without a subject. Following the subset principle, the child should have the value of the parameter that produces *non-pro-drop* languages. Therefore, if the child has to acquire a *pro-drop* language, when she hears a sentence without a subject the child should change the value of the parameter, because these sentences would be impossible for her grammar (Rizzi, 1986). The figure representing this proposal is below:

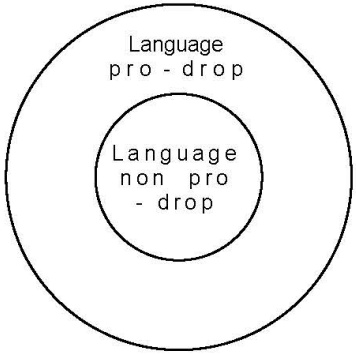

Figure 2. The subset principle applied to the subset parameter.

However, it is not clear if a kind of language is a subset of another language, since *non-pro-drop* languages allow sentences with explicit expletive pronouns (i.e., in English pronouns *it* and *there*), and therefore sentences with explicit expletive pronouns are not a subset of *pro-drop* languages.

Hyams (1983, 1986, 1987) observed sentences without a subject produced by English-speaking children during an early age. Based on this error, Hyams proposed that children have the value of the parameter that corresponds to *pro-drop* languages. In order to explain the change of the value of the parameter, Hyams stated that English-speaking children are exposed to explicit expletive pronouns, which only exist in *non-pro-drop* languages, behaving as triggers. Hyams (1992b) proposed that the initial value would be a *pro-drop* language, and that the uniformity of verbal inflection (the fact that in a language, all or none of the finite verbal forms can be non-finite verbs) and the identification of the subject would be the triggers.

Valian (1990a, 1990b) put forward another proposal with respect to the acquisition of the correct value of the parameter. In addition to saying that, from very early on, the child has both values of the parameter (Valian, 1990a), Valian proposes that there are other triggers, such as the frequency of sentences with or without a subject (Valian, 1990b).

1.1.2. Markedness

Another important concept for the Continuity Hypothesis is Markedness. It has been observed that not all sentences in a language have the same value for each parameter, but rather there is a tendency. The value of the parameter that describes this tendency is *unmarked*; the value of the parameter that describes the reverse tendency is the *marked* value. In principle, the value that the child has set for each parameter is the *unmarked* value (White, 1982), that is, the *unmarked* value of a parameter is the first value acquired (Goodluck, 1991). Chomsky (1981) assumes this notion and proposes that the child is equipped with universal grammar and a Markedness theory that guides the child through the acquisition process. According to Chomsky, the child sets the parameters with the *unmarked* value. Therefore, the child follows a universal process of acquisition and changes the value of the parameters when these do not match the *unmarked* values.

An example of this principle is the head directionality parameter: Spanish speakers produce the head of a Noun Phrase before the complement, that is, they produce the noun before the adjective, and therefore this word order contains the *unmarked* value; the production of the head of the Noun Phrase after the complement is the *marked* value, which is emphatic in Spanish. In English, the *unmarked* value is the production of the head of the Noun Phrase after the complement.

In order to see an example of this notion, I'll describe the acquisition of verb arguments in English. The verb "give" allows two syntactic forms in order to convey the role of theme and recipient in the verbal phrase:

(1) a. John gave the book to Mary
b. John gave Mary the book

The first option is the *unmarked* value and is the most common choice in English. As predicted by the theory, the second option is more difficult to learn for English-speaking children, since it is the most *marked* option, as evidenced by research (Cook, 1976; Roeper et al., 1981).

1.1.3. Order in the acquisition process

One of the assumptions proposed by a number of authors is the Hypothesis of Ordered Input, which says that children learn grammar following the same order. In this vein, adults expose children to some structures before others. This fact is related to the notion of Markedness: following the Continuity Hypothesis, the fact that children do not correct *unmarked* values early on when these are ungrammatical is because triggers are not available in the very early stages of language acquisition.

A general assumption in Learnability Theory is that the child is not exposed to negative evidence (Wexler & Culicover, 1980; Maratsos, 1983). The changes of value in the null subject parameter made by children are caused by exposure to positive evidence, such as the presence of expletive pronouns in *non-pro-drop* (Hyams, 1983, 1986), which are the triggers in this parameter.

On the other hand, Roeper & De Villiers (1992) propose that parameter setting follows an order. According to these authors, if the child hasn't yet acquired a feature, this is because she has not acquired the structure that allows her to learn that feature. The acquisition of the long-distance movement of question marks is an example, because long-distance movement to CP requires the existence of the functional category Complementizer Phrase.

In addition, some data require an analysis beyond the processing limitations of the child, which would determine the process of language acquisition (Roeper, 1983). The maturation of non-linguistic abilities that interact with linguistic abilities can explain the order: short-term memory is a good example because its capacity increases as the child develops. Some data can be found only in complex sentences; if the child cannot

process these sentences because of memory limitations, the data is not yet available to the child.

Clahsen suggests that lexical learning allows us to set universal principles based on the stimulus, and we do not need to propose a fixed order of appearance of universal principles. Following Clahsen (1992) and White (1981), even though the child can access the same stimulus in different stages, the perception of the data is different because of the processing capacity, since short-term memory increases over time, and acts as a filter of the stimulus that the child can perceive.

1.2. The Maturation Hypothesis

This hypothesis postulates that a child's grammatical knowledge is not available in the early stages, and that the grammar appears as the child matures. In this proposal, we can distinguish two positions: the strong version proposes that the grammatical knowledge of the child is a grammar that does not exist in an adult's grammar (Felix, 1984, 1987, 1992); there is a version of this proposal which states that the acquisition of language depends on the maturation of functional categories (Guilfoyle & Noonan, 1988; Lebeaux, 1988; Radford, 1988, 1990); Guilfoyle, Noonan & Lebeaux state that the child cannot have the knowledge of functional categories before she is 2.6; Radford proposes that this knowledge develops when the child is 2.3 (approximately).

With respect to the weak version, the grammatical knowledge of a child is always a possible grammar of adult language (Borer & Wexler, 1987; Sano & Hyams, 1994; Wexler, 1992, 1998). In fact, there is not a big difference between the weak version of the Maturation Hypothesis proposed by Borer & Wexler and the Continuity Hypothesis, since both propose that the knowledge of the child doesn't violate the general principles of language. Weissenborn, Goodluck & Roeper (1992) classify the different proposals mentioned above as the Continuity Hypothesis, which includes the proposal of Borer & Wexler (1987) and Hyams (1983, 1992), and as the Discontinuity Hypothesis, which includes the proposals by Felix (1987, 1992), Radford (1988, 1990) and Lebeaux (1988).

1.2.1. Maturation restricted by Universal Grammar

The proposal of the Maturation Hypothesis by Borer & Wexler (1987, 1992) and Wexler (1998) is that linguistic principles appear gradually because of maturational factors; changes observed in the linguistic competence of the child depend on biological factors. Therefore,

the linguistic data that can trigger a change in a child's grammar does not have any influence because the child hasn't matured enough and cannot take them into account. Once the child has developed, the new grammatical knowledge attained will allow the child to take into account grammatical constituents that she could not analyze. The child will then also be able to change their knowledge of the language that is being acquired. A similar approach is the Truncated Hypothesis (Rizzi, 1993), which proposes that children have not yet acquired complete sentence structure and that it emerges later on in development.

In addition to maintaining that language is a system that matures and is not set when the child is born, Borer and Wexler consider the possibility that non-linguistic capacities also mature. These authors propose the maturation of specific aspects of grammatical knowledge. According to this, the child starts with some aspects of grammatical knowledge and adds others later.

The proposal of Borer and Wexler is different from other proposals of the Maturation Hypothesis because these authors say that the acquisition process is constrained. It is possible that the child's grammar is a reflection of the adult's language. The options for the child to build a grammar are very restricted. Borer and Wexler (1992) propose that the initial grammar does not totally develop the principles, but rather contains proto-principles of Universal Grammar, which generate a set of representations that are a subset of all representations generated by the principles totally developed in an adult's grammar.

The only thing that differentiates the grammatical knowledge of the child from the adult's is that some processes may be missing, e.g., argumental chains (Borer and Wexler, 1987), or that there are specific principles in certain stages (Borer & Wexler, 1992; Sano & Hyams, 1994; Wexler, 1998). With respect to this last case, Italian children produce participle agreement in transitive verbs with a direct object, without a clitic pronoun preceding the verb. In an adult's grammar, the participle of transitive verbs can only agree with the direct object if it is realized as a clitic pronoun that precedes the verb. Borer & Wexler (1992) argue that this is the same structure as the adjectival passive construction in English. This structure is justified because the grammar of the child is restricted by a proto-principle: the Unique External Argument Proto-Principle (UEAPP), which states that every predicate is associated with a unique external argument, and that each external argument is associated with a unique predicate (except the copulative verb, *be*, which is not considered a predicate). In order to explain clitic omission in Catalan, Italian or French, another proposal has been put forward, similar to the Unique Checking

Constraint (UCC) (Wexler, 1998), which states that in the early stages the D-feature is uninterpretable and can only be checked once. If the target language of the child requires a derivation with double-checking of uninterpretable features by a certain grammatical constituent, the child's grammar will render that derivation a violation of the UCC. Therefore, in languages like Italian or Catalan, where the clitic has to check the D-feature against AgrOP and against CliticP, this proposal predicts that clitic omission will be expected. Languages that do not have participle agreement for direct objects, like Spanish or Greek, should have a much lower rate of clitic omission (Gavarró, Torrens and Wexler, 2010; Wexler, Gavarró, Torrens, 2004).

Following Borer and Wexler (1992), determinism is a plausible option because if determinism is not correct, children should produce many grammatical errors, which has not been attested. Borer and Wexler also adduce that determinism makes the acquisition process much more efficient and describes other human cognitive processes as well.

In addition, Borer and Wexler (1987) differentiate the proposal of determinism with respect to hypothesis testing, which consists of the acquisition of a distributional analysis of the frequencies of the different values of a parameter. Following these authors, hypothesis-testing allows for many possibilities from which to choose, as well as correction in the event of an error. Borer and Wexler propose that children create a grammar at a certain maturational stage and that new abilities surface later on. Based on these new linguistic abilities, the child reinterprets former principles according to their new abilities. This reinterpretation is not based on a correction process that requires external data. The child is not forming a hypothesis and corrections, but rather following a biological program in which new principles are developed and the former knowledge attained by the child is reinterpreted.

According to Wexler (1992), the child knows head movement before she is 2.0. In the same vein, non-argumental chains, like wh-movement, are acquired very early. However, argumental chains are acquired later on (Borer and Wexler, 1987).

With respect to the question of the existence of the category, Inflection, Wexler (1992) analyzed verb movement, which is a sort of head movement. In order to analyze Inflection correctly it is necessary to know the chains, the content and the structure of the head of the Inflection Phrase. Borer and Wexler consider Inflection as a morphological process that interacts with syntactic processes (Baker, 1988; Chomsky, 1957, 1989; Emonds, 1973; Pollock, 1989), such as head movement.

Wexler (1992, 1998) observed (in different languages) the use of finite and non-finite verbs by children in contexts where only finite verbs can be produced, and he concluded that there is an *optional infinitive stage*. During this stage, children produce finite and non-finite verbs randomly where non-finite verbs are produced as verbs in the main sentence. When the verb is finite, it is always produced in the correct position. Therefore, even though the child differentiates between finite and non-finite verbs, she produces non-finite verbs in contexts only where finite verbs are produced in an adult's grammar.

Wexler proposes that between the ages of 2.6 and 3.0, the child is not at the *optional infinitive stage*, and she then stops producing non-finite verbs in contexts where only finite verbs are produced in adult grammar. This stage appears only in languages where the subject-verb agreement is not regular, like English, German, or Swedish. In languages like Italian, Spanish or Catalan, this stage is not observed (Guasti, 1992; Torrens, 1995).

1.2.2. The maturation of functional categories

In order to explain early child language, Radford (1988, 1990) proposed the maturation of a more specific aspect: the functional categories of Inflection, Complementizer, Determiner, and Case Theory. Functional categories express and allocate syntactic and semantic properties: Tense, Aspect and Agreement in verbs; and case, gender and number in nouns. In addition, functional categories also describe the position of constituents after movement in interrogative and imperative sentences. Case Theory describes the location of Noun Phrases in the sentence, which need to check the feature of case so that the sentence doesn't crash (Chomsky, 2001).

Radford says that the early sentences of the child are like Small Clauses produced by adults, although with some differences. Radford proposes the existence of the general principles from very early on in the process of language acquisition; the maturation of structures, which will develop as functional categories, mature; the telegraphic look of children's speech is due to the maturation of functional categories because at an early age children do not produce closed class words, such as prepositions and determinants.

The main characteristic of Small Clauses is that they do not have functional categories and therefore also do not have the Complementizer Phrase, Inflection Phrase or Determiner Phrase. Following Radford, Small Clauses are structures that describe a predicative relation between an

argument and a predicate: these have the canonical structure [SN SX], where NP is the subject, and SX is a predicate, which can be an Adjectival Phrase, a Prepositional Phrase, a Noun Phrase, or a Verbal Phrase. I will present some examples of Small Clauses, which correspond to subordinate sentences (some of the examples were taken from Radford, 1988, and Contreras, 1987):

(2) a. I consider [Ann very intelligent]
b. I prefer [the meat well done]
c. Most people consider [syntax difficult]

Since a child's Small Clauses do not have Inflection, in English these cannot have the particle "*to*" in infinitives, or a modal (in the same vein, Small Clauses in adults), since common sentences appear at the position of Inflection:

(3) a. *Let [there to/can be light]
b. *Exercise keeps [you to/can (be) fit]

Another property is that in English, normal finite sentences can be denied by an auxiliar (for example, a negative modal: *can't, won't, shan't, don't*). Since Small Clauses have no Inflection we cannot use a negative modal. Instead, Small Clauses are denied by the negative particle, *not*, and therefore its structure is [NP not XP]:

(4) a. I consider [Rome *not* a good choice]
b. I found [the chair *not* comfortable enough]
c. I consider [that joke *not* in very good taste]

In the previous sentences, *not* is an adjunct of the predicate (which denies the predicate, SX), which expands a Nominal Phrase into another Nominal Phrase, and an Adjectival Phrase into another Adjectival Phrase (SXs into other SXs).

Further, verbs in Small Clauses do not agree for Tense or Agreement, and therefore these have non-finite verbs, gerunds, or particles:

(5) a. don't let [John take/*takes the money]
b. I saw [Laura watching/*watches TV]

So, if Radford proposes that a child's sentences are Small Clauses, children will not have inflection in finite verbs. In English, the position of Inflection in a sentence with a finite verb has to be occupied by:

a) a modal, which generates at the category of Inflection.

(6) [$_{SD}$ He] [$_{F}$ should] [$_{SV}$ be writing it]

b) an auxiliar, inflected for person and number. The auxiliar is base-generated at VP and moves to Inflection.

(7) [$_{SD}$ He] [$_{F}$ had] [$_{SV}$ --- written it]

c) it can be empty, where the verb checks the features of Tense and Agreement. The verb is base-generated in the VP, and the features go to the position of the verb.

(8) [$_{SD}$ He] [$_{F}$ *e*] [$_{SV}$ --- wrote it]

d) the constituent, *do*, which is base-generated in VP and moves to Inflection.

(9) [$_{SD}$ He] [$_{F}$ did] not [$_{SV}$ write it]

Radford (1990) predicts that if Inflection holds the properties of Tense and Agreement, then the child won't know the affixes of Tense or Agreement in finite verbs in English.

The data collected in the acquisition of English show that the first sentences of the child have a) the head of the Verb, without Inflection; b) the gerund + *ing*; c) the participle + *n*. These words are not inflected for Tense or Agreement.

Examples extracted from Radford (1990):

(10) a. Hayley draw it (Hayley, 1.8)
b. Baby talking (Hayley 1.8)
c. Pig go in (Claire, 1.11)
d. That broken (Claire, 1.11)

In addition, when children are asked with a verb inflected by Tense or Agreement, they respond with a verb without Tense or Agreement:

(11)

Adult: What did you draw?

Child: Hayley draw boat (Hayley, 1.8)

(12)

Adult: What does Ashley do?

Child: Ashley do pee ... Ashley do poo (Jem 1.11)

Radford says that these sentences have the structure below:

(13) $[_{VP}\ [_{NP}$ Pig] $[_{V}$ say] oink]

which differs from the structure in the adult:

(14) $[_{IP}[_{DP}$ The pig] $[_{I}$ *e*] $[_{VP}$ --- $[_{V}$ says] oink]]

In addition to the lack of Inflection in finite verbs, sentences produced by children will not need a predicate with a Verbal Phrase. The reason is that Small Clauses, and therefore child's sentences, do not have Inflection, which is the component that subcategorizes the Verbal Phrase.

However, Radford says that there are still some differences between Small Clauses in adult grammar and sentences produced by the child at this stage. With respect to the distribution, Small Clauses in adult grammar can only be produced as complements of a certain group of transitive verbs (*believe, want, find* or *let*), but these cannot be independent. However, in a child's language, verbs can be used independently.

Another difference with respect to Small Clauses in children has to do with Case Theory. In the version of the generative grammar used by Radford (1990), the subject of a normal finite sentence gets the nominative case from Inflection. However, the subject of a Small Clause, since it doesn't have Inflection, gets the accusative case from the verb of the main clause:

(15) I consider that [he/ *him would be unsuitable for the job]
I consider [him/ *he unsuitable for the job]

If the subjects in Small Clauses get accusative case from the verb of the main clause, independent Small Clauses in children cannot have Case.

Since children haven't developed Case Theory yet, Noun Phrases do not check case, and children don't know the requirement that subjects of Small Clauses have to check Case. In order to demonstrate that children haven't acquired the filter of Case, Radford says that children produce Noun Phrases as complements of intransitive verbs:

(16) a. daddy gone van (Daniel 1.10,1)
b. Wayne go river (Daniel 1.10,3)

According to Radford (1990), because children don't have the functional category of Inflection, they won't distinguish between pronominal forms that assign nominative case from pronominal forms that assign other cases.

Radford cites examples of the use of pronominal forms attributed to subject positions which, in adult grammar, are assigned oblique case:

(17) a. Me ask him (Daniel, 1.9)
b. Me do it (Leigh, 2.0)
c. Him gone (Hayley, 1.8)
d. Him asleep (Jem, 2.0)
e. Her climbing ladder (Jem 2.0)

Therefore, Radford justifies his proposal, where sentences produced by children are like Small Clauses in adult grammar, although with some differences. In this research, I will try to supply evidence of the existence of finite verbs in children's grammar, evidence of the existence of Inflection in finite verbs in children's grammar, evidence of the correct use of negation, and correct nominative case assignment to subject pronouns.

1.2.3. Labelling

Clahsen (1986, 1990, 1992) and Clahsen & Penke (1992) propose a very different proposal from previous authors. Their proposal shares certain elements with the Continuity Hypothesis, such as the mechanism

of change, but the description of the grammatical knowledge of the child has clearly different properties from adult grammar.

Clahsen (1992) considers that his proposal is included in the Continuity Hypothesis. He considers the Continuity Hypothesis to be very restrictive and that it therefore has many advantages, since the grammatical knowledge of the child can be described following Universal Grammar. In addition, it avoids *ad hoc* hypotheses, which have to be included in the strong version of the Maturation Hypothesis. Clahsen also considers the Continuity Hypothesis to be parsimonious because it does not assume many changes during development.

Following this proposal, intermediate grammars respect the restrictions of Universal Grammar, and parameters are set from particular lexical items and properties associated with lexicon. This model predicts, therefore, the existence of correlations among certain lexical and morphological items and syntactic structures: since a trigger is available to the child, she should acquire at the same time all the linguistic properties related to the Universal Principles.

However, the solution that Clahsen proposes to describe the structure of the sentence differs from the proposal that most fits the Continuism, which is the Full Clause Hypothesis by Hyams (1992a). Hyams labels the proposal by Clahsen as Short Sentence Hypothesis, differentiating it from the Full Clause Hypothesis by Hyams (1992a) and the Small Clause Hypothesis by Radford (1988, 1990).

The proposed model by Clahsen & Penke (1992) is based on the Split Inflection Hypothesis by Pollock (1989) and Chomsky (1989), where Inflection is split into Tense Phrase and Agreement Phrase. Clahsen & Penke propose three parameters:

1. V2 parameter (Platzack & Holmberg, 1989), which determines whether finiteness operator [+F] is in the Inflection or the Complementizer.
2. Agreement parameter (Platzack & Holmberg, 1989), which determines whether Agreement exists in syntax.
3. Recovery parameter (Rizzi, 1986), which determines whether the category of Agreement can identify phonologically empty subjects.

Clahsen & Penke (1992) describe the different morphemes used in German for Present and Past tenses:

(18)

0:	1st sing. present or past:	ich leb-0(I live)
	3rd sing. past:	er leb-te-0 (he lived)
st:	2nd sing. present or past:	du leb-st(you live)
t:	3rd sing. present:	er leb-t (he lives)
	2nd pl. present or past:	ihr leb-t (you live)
n:	1st pl. present or past:	wir leb-te-n (we live)
	3rd pl. present or past:	sie leb-te-n (they live)

Based on a study of the acquisition of agreement in German, Clahsen & Penke (1992) propose two stages with respect to the structure of the sentence:

a) In the first stage, the child has a reduced set of verbs marked with the feature of [+Finiteness]; the highest position is the maximal projection of this category, which authors call Tense Phrase (Pollock, 1989):

(19) $[_{ST}$ Spec $[_{F'}$ (+F)$[_{SV}$ Spec $[_{V'}$ V]]]]

Clahsen & Penke say that they cannot identify complementizers during this stage. Predicate elements are set in Inflection, which behaves differently in the child. Following Clahsen & Penke, predicate elements can be modals, verbs with Inflection *-t* and verb *sein* (i.e., *to be*); all these verbs have the position [+F], and therefore appear at the V2 position. However, verbs with the morpheme *-n*, which are not marked for [+F] stay at the V position, that is, at the final position. The [+F] feature allows the existence of the empty category, *pro*. However, there is not subject-verb agreement and therefore children do not yet have the features of number and person. However, Weissenborn (1990) postulates that the child already has V2 movement. In sentences with only a modal, Clahsen & Penke propose that, in VP, the verb is omitted and the modal is generated in [+F]. The omission of verbs in certain productions is not solved by their model, though.

b) In the last stage, after the acquisition of subject-verb agreement and following the acquisition of the agreement paradigm (which has consequences for the acquisition of the structure of V2 and omitted subjects), we can assume that the child already has knowledge of the structure below:

(20) $[_{CP}$ Spec $[_{C'}$ C (+F) $[_{AGRP}$ Spec $[_{CP'}[_{VP}$ Spec $[_{V'}$ V]] AGR]]]]

In a higher position to VP we can add the Agreement category, and now [+F] is defined as the head of the Complementizer Phrase. Once the child discovers the morpheme, *-st*, she acquires the agreement of person, which sets the parameter of Agreement in German, following Platzack & Holmberg (1989). After this, the child also acquires number agreement. The knowledge of the agreement paradigm sets the parameter of recovery. Following Rizzi (1986), the category of Agreement can assign features of the empty category, *pro*, and therefore the subject can be recovered. The child discovers that in German the category of Agreement cannot identify the subject, and therefore the child starts to decrease the production of sentences without subject. The change caused by lexical learning is the new labelling of the Inflection Phrase as the Complementizer Phrase, the head of which has the feature [+- finite]. Phrase Agreement is also added to the structure.

The acquisition of the morpheme, *-st*, for the second-person singular is the main factor in the development of sentence structure (Clahsen & Penke, 1992), because at this moment the child productively contrasts the different morphemes of the verb.

Hyams (1992b) proposes that the fact that agreement is not uniform, is the factor allowing the child to discover that, in German, the subject cannot be recovered. This explanation is accepted by Clahsen & Penke (1992).

Once the child has acquired the paradigm of Agreement, verbs are not marked for [+Finite], and all the paradigm of Agreement takes place in the category of Agreement. The feature [+Finite] is then not the head of its own maximal projection, and it is now the head of the category of Complementizer, which constitutes the V2 movement.

Meisel & Müller (1992) have a similar point of view to Clahsen's proposal: they propose that the category Tense Phrase (the head of which has the feature [+- finite]) is recategorized as the Complementizer Phrase, and the Complementizer then has the feature [+- finite]. The initial state of children who are acquiring German is represented as:

(21) $[_{TP}$ Spec $[_{T'}$ T $[_{AGRP}$ Spec $[_{AGR'}[_{VP}$ Spec $[_{V'}[_{NP}$ N]V]] AGR]]]]

For Meisel and Müller the child has the following two categories: the Tense Phrase and the Agreement Phrase. Meisel and Müller call this proposal the Hypothesis of Recategorization. Their proposal suggests that children don't produce complementizers: these authors have observed that

children who acquire German produce subordinate sentences but without complementizers, which have to appear obligatorily in adult German. However, the examples used by these authors are ambiguous and only take four cases into account. These authors also maintain that there is no movement of question marks in the Complementizer Phrase, and propose the lack of inversion of the auxiliar. However, evidence has been found for the existence of these movements (Hyams, 1992a).

1.2.4. The Truncation Hypothesis

Another proposal to describe sentence structure in the early stages of language acquisition was put forward by Rizzi (1993, 1994). Root infinitives have been described as a consequence of a truncated sentence structure. Rizzi proposes that the full sentence structure is not operative and that it matures later on, which is compatible with the view of Borer & Wexler (1987). Following Rizzi (1993), some underspecifications of Universal Grammar might affect the child's grammar. Rizzi proposes that there are two kinds of early null subjects: an empty category which is licensed in the specifier of the root, and another licensed in the subject position of Root Infinitives. This proposal would explain root infinitives, early null subjects, the absence of wh-questions, and the absence of auxiliaries in the early stages. Rizzi's proposal explains that root infinitives appear with declarative sentences but not in wh-questions in French (Crisma, 1992) or German (Weissenborn, 1992). This contrasts with the fact that root infinitives are barely found in the acquisition of Italian (Cipriani et al., 1993; Guasti, 1992). Rizzi's proposal would also explain the lack of subject clitics in French (Pierce, 1989): assuming the analysis of clitics by Pierce (1989), where she proposes that subject clitics are AgrS markers in the early stages of French, Rizzi predicts the absence of clitic pronouns in French. Rizzi also argues that root infinitives are usually lexical verbs, and root infinitive auxiliaries are not attested (Wexler, 1992); since aspectual auxiliaries are related to Tense (Guasti, 1993), the Truncation Hypothesis could explain the lack of root infinitive auxiliaries in Italian. Another structure that could be involved in the description supplied by the Truncation Hypothesis is V2: this proposal would predict the occurrence of V-final finite root clauses in V2 languages. Rizzi (1993) argues that some instances have been found by Deprez & Pierce (1993).

Rizzi (1993) proposes that, in the early stages, the highest projection in a sentence is lower than TP, which allows null subjects in non-null subject languages such as French or English. When CP is

available for children, null subjects are not allowed in child language. The sentence structure in adult French and English is as follows:

22. [$_{CP}$ Spec [$_{CP'}$ C [$_{AGRP}$ Spec [$_{AGR'}$ AGR [$_{TP}$ Spec [$_{T'}$[$_{VP}$ Spec [$_{V'}$[$_{NP}$ N]V]] T]]]]]]

Following Rizzi, the sentence structure that would allow root infinitives in French and English would be as follows:

23. [$_{VP}$ Spec [$_{V'}$[$_{NP}$ N]V]]

Negative sentences have barely been found in root infinitives in French (Friedemann, 1992). This low frequency would be evidence that NegP is in a higher position than TP, and could be explained by the Truncation Hypothesis. Further evidence comes from the acquisition of Dutch (Hoekstra & Jordens, 1991), where children do not produce an adult negative particle when root infinitives are produced, but rather a non-adult form of negative, since the TP structure has not yet been acquired at this stage.

Another prediction of this proposal is that, since sentences do not contain any IP or CP material, we would not find instances of fronted wh-phrases, or subject clitics. However, instances of fronted wh-questions have been found in English by Stromswold (1995); in French by Jakubowicz & Gutierrez (2007) and Bentea & Durrleman (2014); in Italian by De Vincenzi et al. (1999); in Spanish and Catalan by Capdevila (1997); and in Hebrew by Friedmann et al. (2009). In addition, it has been found that children apply correct movement of clitic pronouns in Italian (Guasti, 1992), Spanish and Catalan (Torrens, 1995). In this book, I will present data for the correct use of clitic pronouns in Spanish and Catalan.

We could also add that there are some difficulties with this proposal in terms of describing some types of findings: in some cases, the modality expressed by RIs must imply a higher functional structure incorporating a null modal operator. Therefore, as Hyams (2001) suggests, it is difficult for the Truncation Hypothesis to explain how to derive the modality at a lower projection than CP. All in all, this proposal could explain some of the errors that children make in the early stages, but there is some evidence that could not be described by this model.