

**The Emergence of Inflection in Bilingual First Language
Acquisition: Considerations for Theories of Grammatical
Development**

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Declaration

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Summary

The Emergence of Inflection in Bilingual First Language Acquisition: Considerations for Theories of Grammatical Development

This thesis investigates morphological productivity across two different language types in the early stages of combinatorial speech, based on longitudinal and experimental data from two children who are acquiring two native languages, Italian and English. Generativist-nativist and constructivist models of language development make opposite claims about children's early productivity in the use of Inflection. The former argue for early mastery of inflections owing to the theoretical assumption that Inflection is an innate functional category; hence, they claim that productivity is achieved as soon as children identify the phonological shapes that inflectional items take in the input language(s). The latter assume item-based acquisition and claim that adult-like use of inflections becomes possible only when children have collected a sufficient number of linguistic structures and begin to run analogies across stored constructions. In addition, several generativist-nativist studies of BFLA children acquiring language pairs that differ in the richness of Inflection have identified cross-linguistic discrepancies in the acquisition of functional items. They have pointed to an advantage in the emergence of inflection-bearing material in the morphologically richer language. Under constructivist accounts, these differences are imputable to the fact that children acquiring richly inflected languages have been credited with adult-like use of inflectional morphology exclusively on the basis of their virtually error-free speech production.

BFLA children have often been indicated as excellent testers for cross-linguistic research. In the present study, they are also identified as ideal participants in research about early morphological productivity, because for them the acquisition of each of their languages takes place under reduced exposure, in comparison with their monolingual peers.

The aim of this thesis is threefold: firstly, to determine whether BFLA children display adult-like use of inflectional morphology in the early stages of combinatorial speech and whether asymmetries can be identified in the achievement of paradigmatic mastery between their two languages; secondly, to contribute to the on-going debate about competing theoretical accounts of language development; thirdly, to identify operational

criteria for the analysis of morphological productivity that are appropriate for naturalistic speech sampling.

The factors included in the analysis of productivity are: accuracy in the use of inflections, appearance of bound morphemes with multiple stems, occurrence of function words in varied constructions, knowledge of the obligatory nature of the copula, instances of morphological mixing and production of target-deviant forms. The results from the spontaneously produced speech samples are further tested by examining experimental data, which are used to test the hypothesis that children have knowledge of the obligatory nature of the copula and are able to make contrastive use of verb and noun types in the early stages of combinatorial speech.

The data show that the two bilingual first language acquisition children exhibit productive use of the inflectional items targeted in the analysis of the spontaneously produced speech data and that no relevant asymmetries can be identified in the acquisition of Inflection across their two languages. Contrasting results from the experimental data suggest that demands that elicitation tasks pose on very young children are not exclusively of a linguistic nature and may hinder the objective evaluation of their linguistic abilities.

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CHAPTER 1

Theoretical approaches to language acquisition

1.1 Introduction

One of the central questions in child language acquisition is how much of what is ultimately acquired is provided by an innate endowment and how much must be learnt from environmental evidence. The input is crucial in the acquisition process of a native language, as shown by the fact that all infants become competent users of the language(s) of their community (Gathercole & Hoff, 2007; Valian, 2009). This assumption is of course shared by all theoretical accounts of language development. In the words of Yang (2002, p. 6) “no matter how much innate linguistic knowledge children are endowed with, language still must be acquired from experience”. However, whilst no study has established a minimum-exposure threshold to make language acquisition possible, there are studies that suggest that the sheer amount of input cannot on its own fully account for language acquisition (e.g., Goldin-Meadow, 2003; Bishop & Mogford-Bevan, 1988; Schiff-Myers, 1988; Bickerton, 1984 and 1999; Kegl, 2002; Senghas, 2003; Senghas, Kita & Özyürek, 2004).

The two leading approaches to language acquisition differ in the assumptions they make about children’s innate endowment, which have implications for the claims they put forward about the adult end-state and the processes that lead to the final state. Generativist-nativist accounts place considerable emphasis on children’s initial endowment and claim that the child’s mind has initial, domain specific content, i.e., that syntactic categories and procedures regarding utterance-formation are innate. Constructivist accounts assume very little about the learner’s initial and domain specific content. They deny the existence of innate linguistic knowledge and claim that, although the ability to acquire language is innate, children build their mental grammars from generalised cognitive mechanisms and communicative skills, on the basis of environmental evidence.

One of the most hotly debated issues concerns productivity of inflections in the early stages of combinatorial speech. Since under generativist-nativist accounts, Inflection is an innate category, researchers working within this framework argue for productive use of inflections from the earliest observable stages of language acquisition (e.g., Wexler,

1998). Conversely, constructivist researchers strongly object to the claim that the use of inflections is adult like in the initial stages of speech production, by virtue of the assumption that Inflection is not an innate endowment (e.g., Gathercole, 2007; Freudenthal, Pine & Gobet, 2009).

Thus, early morphological productivity is a central aspect of the debate about the innateness of linguistic content, because, in the initial stages of combinatorial speech, the linguistic knowledge children may have acquired can hardly suffice to account for mastery of inflections. In addition, several studies (e.g., Gawlitzek-Maiwald & Tracy, 1996; Paradis & Genesee, 1996, 1997; Sinka & Schelletter, 1998; Caselli, Casadio & Bates, 1999) have pointed to a cross-linguistic asynchrony in the emergence of Inflection, suggesting that inflectional items emerge earlier in richly inflected languages than in languages with sparse morphology.

The present thesis addresses these issues by investigating the emergence of inflectional morphology in children who are in the early stages of speech production and are acquiring two native languages that vary in morphological richness, namely Italian and English. The bilingual first language acquisition setting (BFLA or 2L1 acquisition) appears to be particularly appropriate for an exploration of early morphological productivity, because of the reduced environmental evidence to which BFLA children are exposed relative to monolingual acquirers of the same languages, at the same developmental stages. It also lends itself well to cross-linguistic comparisons (Meisel, 1990; De Houwer, 1995; Sinka & Schelletter, 1998).

To summarise, the main focus of this thesis is to examine whether children are productive with inflectional morphology at a time when the linguistic knowledge that they may have accumulated from the primary linguistic data cannot fully account for adult-like use of inflections. Through this investigation the present study aims to contribute to the on-going debate about the two major theoretical accounts of language acquisition, i.e., generativist-nativist accounts and constructivist accounts. The following research questions will be addressed:

(i) Are BFLA children productive with inflectional morphology in the early stages of combinatorial speech? If so, do they arrive at productive command of inflectional

morphology earlier in richly inflected languages than in languages with sparse morphology?

(ii) Do morphological overgeneralisations, intra- and cross-linguistic morphological borrowings occur in the early stages of combinatorial speech in the BFLA setting?

(iii) What is the nature of omission, finiteness and agreement errors in the early stages of combinatorial speech in the BFLA setting?

In order to answer these questions, I explore spontaneous and elicited data in each of the children's languages. The spontaneously produced speech samples were collected by audio-recording two bilingual first language acquisition children in interaction with their parents on a monthly basis for a period of 12 months. The children also performed an elicitation task in each language, which provided contexts for the use of the copula and for the production of inflectional suffixes with multiple stems. A questionnaire administered to the parents was employed to gather detailed information about the children's linguistic environment.

In this chapter, I give an overview of the competing theoretical accounts of the nature of the adult end-state proposed by constructivist and generativist-nativist approaches respectively. I also outline the hypotheses they put forward concerning how children's grammars develop into the adult state. In the next chapter, I discuss terminological issues in BFLA acquisition and review current research views on the acquisition of two languages from birth, focusing on concerns that arise when BFLA is compared to monolingual acquisition. In chapter 3, I review studies adhering to generativist-nativist and constructivist accounts that have explored the acquisition of Inflection. I first focus on generativist-nativist studies of monolingual children and BFLA children acquiring language pairs that display a different level of morphological richness. Then, I turn to constructivist studies of monolingual and BFLA children that have explored the acquisition of inflectional features, which are also investigated in this study. Chapter 4 presents the research questions and outlines the competing predictions that can be made about the acquisition of inflectional morphology in the BFLA setting from generativist-nativist and constructivist perspectives. Furthermore, I describe the method of the data collection and of the morphological analyses. In Chapters 5 and 6, I present the results of the analyses of the spontaneous and the elicited data of the two case studies of Italian-English BFLA children. In Chapter 7, I

discuss the implications of the research findings, the contribution to existing knowledge and theory. Finally, I identify the limitations of the current study and the areas that need to be further researched.

1.2 Constructivist accounts

Constructivist accounts assume that what children are acquiring, the adult end-state, constitutes a structured repertoire of utterance templates that vary in sizes and levels of abstraction (Tomasello, 2003; Gathercole 2007). Each template serves certain communicative functions. Because of its focus on the fact that speakers use language to perform some functions, the constructivist approach is also known as the functionalist or usage-based approach (Tomasello, 2003). Each linguistic form or structure is paired with a particular meaning, which provides the child with the motivation to learn the construction (Gathercole, 2007). Thus, these constructions can be learned on the basis of the input and no innate linguistic knowledge needs to be posited. In this view, two components are assumed to be crucial to the development of language: the store of linguistic experience through exposure to linguistic input and general cognitive abilities that are at work in other learning processes (Tomasello & Haberl, 2003). These generalised learning mechanisms include the ability to remember, to pay attention, to monitor the speaker's focus, to infer the speaker's communicative intention, to understand cultural routines, such as mealtime and bedtime. Since cognitive development and language exposure increase steadily, children become able to identify relationships between linguistic forms and meaning. It is at this point that they can start to learn the constructions of the input language(s). Under constructivist accounts, language development is driven by the following principles (Gathercole, 2007):

- *Lexically driven and context-based acquisition.* In the initial stages of language acquisition, children use the ability to store linguistic experience and the knowledge of the surrounding world to learn individual lexical forms. They associate these isolated words only with the contexts in which they have heard them (Bates, Bretherton, Shore & MacNew, 1983). Hence, children's first words are often under-extended. For example, they may associate the word *car* exclusively with cars passing on the street below a window (Bloom, 1973). Studies of lexical learning are

testimony to children's ability to take up linguistic information with a considerable degree of ease (Bloom, Hood & Lightbown 1974; Anglin, 1993; Clark, 1993, 2007). Clark (1993) estimates that children must, on average, acquire nine new words a day from age 2;0 to age 6;0, if they are to reach the 14,000-word productive vocabulary size accepted for this age. Two-year-olds not only pay attention to new words, as evidenced by their repetitions of unfamiliar words (Bloom *et al.*, 1974; Clark, 2007), but also can assign some sort of preliminary meaning to them, as indicated by the fact that they often reuse the new words soon after they have been used by adult speakers (Carey, 1978). Similarly, children learn isolated utterances as rote-learned wholes, also known as FROZEN PHRASES or HOLOPHRASES, associated with their meaning. Furthermore, they are more likely to store linguistic structures from the end than from the beginning of an input utterance. Because of this RECENCY EFFECT and because they learn strings of language directly from the input, in the initial stages of acquisition, they make omission and finiteness errors (e.g., Freudenthal, Pine, Aguado-Orea & Gobet, 2007; Freudenthal, Pine & Gobet, 2009). For example, finiteness errors occur when children omit finiteness-bearing material from a compound finite, i.e., a periphrastic structure where tense and agreement are marked on an auxiliary or a modal.

- *Analogy.* Children arrive at a more abstract level of representation of linguistic structures through the process of analogy. Analogy is the area of the theory that is possibly the most underspecified (Ambridge & Lieven, 2011). The basic idea is that, first, children learn to break the stored utterances into their smaller component parts and, subsequently, they draw analogies across the constructions they have collected, on the basis of common elements and meaning (Tomasello, 2000, 2003). Having acquired a sufficiently large repertoire of utterance wholes, they abstract across them to form lexically specific, partially productive, morphological schemas, labelled as slot-and-frame patterns, each paired with a particular communicative function. For example, from hearing a number of similar sentences in which only one element changes, such as *I'm drinking it*, *I'm eating it*, *I'm hitting it*, they form the schema *I'm ACTIONing it*, to express the meaning of the child performing an action on an object. These schemas are said to be partially productive because there

is only one variable element, the slot, which occurs within an unchangeable schema, the frame. They are lexically specific because the slots within these frames are, at this stage, considered to be semantic rather than syntactic (Lieven, Behrens, Spears & Tomasello, 2003). For example, the above-mentioned ACTION slot is interpreted in terms of a slot for actions that can be performed rather than in terms of a slot for the abstract syntactic category VERB. It is only later in development that children abstract across these schemas to form adult-like constructions of the type [PRONOUN] [BE] [VERB]ing. However, constructivist approaches do not draw a sharp line between the underlying rules that enable utterance formation and the lexicon. This is because, in this view, language learning consists of the acquisition of constructions of different sizes, from a single word to an entire sentence, at different levels of abstraction, from entirely concrete holophrases (e.g., *I'm drinking it*, or the word *drinking*), through partially productive lexically specific constructions (e.g., I'm ACTIONing it) to entirely abstract constructions (e.g., SUBJECT VERB OBJECT) (Ambridge & Lieven, 2011).

The formation of slot-and-frame patterns accounts also for the acquisition of inflectional morphology. For example, from hearing a number of verb forms in which only one part changes, such as *walked*, *played*, *kicked*, *jumped*, children learn the schema *VERBed*, in which the VERB stem represents the variable slot and the inflectional bound morpheme the frame. One factor that affects schematization is the type frequency of the slot position, i.e., the number of items that appear in the variable position in the child's input. Overgeneralisation errors that children make with irregular past-tense forms are taken as evidence of the importance of the role played by the type frequency of the slot in the schematization process (Bybee, 1995). The argument is that as thousands of verbs have a regular past tense in English, children are led to incorrectly insert irregular verbs into this schema (e.g., **runned*). However, the relatively low type frequency of the slot in the irregular pattern means that overgeneralisations with the irregular pattern (e.g., **bept*) are virtually unattested.

Generalisations based on formal and/or functional similarities across stored constructions also explain the acquisition of syntactic categories. Syntactic

categories, such as NOUN and VERB, are not posited as innate endowments that guide the course of language acquisition. Rather, it is claimed that children form syntactic categories through the process of functionally based distributional analysis: children group together words that perform similar functions (e.g., words that describe events) and that appear in similar sentence distributions. For instance, children might group together *eat*, *hit* and *drink* into a VERB class because they all describe actions and are included in the frames *I'm Xing it*, *He's going to X it* and so on.

- *Amount of exposure affects timing of development.* From a constructivist point of view, the amount of input a child receives plays a crucial role in language acquisition. Language is built up through the collection of linguistic structures in different contexts and the abstraction of general patterns from stored structures. Language learning is paced by amount of exposure, because the greater the number of contexts of linguistic exposure the quicker the achievement of a critical mass of linguistic information that enables the child to extract more general patterns.

One linguistic domain in which input variables have been found to affect timing of acquisition is the lexicon. For instance, a four-year longitudinal group study of 42 monolingual English-speaking American families from various socio-economic backgrounds has shown that the number of words children hear may vary considerably across families. On average, children from high-income families heard up to 2153 words per hour and children from low-income families only heard about 616 words per hour (Hart & Risley, 1995). The sheer number of words per hour children heard predicted the number of words they knew. Children in families where parents and caregivers had higher speaking rates had considerably more language input to draw from and knew far more words than children in families where adult talked less. Input frequency has been found to affect lexical development also in bilingual settings. Bilingual children's productive vocabulary size, in each language, has been shown to be a function of the relative amount of exposure to each language (Pearson, Fernandez, Lewedeg & Oller, 1997; Barreña & Iñaki, 2008; Chan & Nicoladis, 2010).

1.3 Generativist-Nativist approaches

According to Chomsky (1986), children are in possession of a body of linguistic knowledge that could not be learnt because much of the relevant information for such learning is not contained in the input, neither in the primary linguistic data nor in the extra-linguistic context. This discrepancy between knowledge and experience, referred to as Plato's problem, constitutes the logical argument of the poverty of the stimulus theory, which claims that language acquisition is "hopelessly undetermined by the fragmentary evidence available" to first language learners (Chomsky, 1975, p.10). Hence, the knowledge constituting the initial state of the language faculty is said to be part of the genetic endowment of humans. In Wexler's words: "the basic tenet of linguistic theory (generative grammar) is that language is a central part of human biology. Grammar is a species specific, genetically encoded system" (1999, p. 69).

Further evidence for the innateness of some linguistic content is offered by the observation that human language is a creative mechanism. Speakers of all languages are able to understand and generate, out of a finite set of words and devices, an infinite number of utterances, which may never have been produced in precisely that form before. It is argued that the universality of humans' linguistic creativity may be explained only by positing that "significant aspects of language development are dictated by our biology" (Gleitman & Newport, 1995, p. 10). Human beings must be biologically endowed with "tacit knowledge of the abstract patterning of language" (Petitto, 2005, p. 91) that acts to extract syntactic patterns from the input and generate new patterns. In addition, speakers of a particular language are able to determine whether or not a novel sequence of words is a well-formed sentence in their language. Chomsky (1957) famously presented the following two illustrative sentences:

1.1 Colorless green ideas sleep furiously.

*Sleep green colorless furiously ideas.

A competent speaker of English is able to determine that the first sequence is grammatical whereas the second is not. Speakers' judgements of the well-formed nature of either sentence cannot be made on the basis of semantics because both sentences are meaningless. Consequently, Chomsky (1957, 1975) argued that speakers must be in possession of a set of rules, i.e., a grammar, for combining words into sentences and adding markers to words

to express grammatical features. He also claimed that these rules could not possibly be formulated in terms of individual words as speakers would have to reformulate each rule whenever they learned a new word and because, as a result, they would have to store an impossibly large number of rules. He proposed that children construct their mental grammars on the basis of the principle of structure dependence: they are born knowing that linguistic rules are formulated in terms of categories and syntactic phrases. Thus, not only does input contain insufficient information because it is fragmentary, i.e., the abstract structures of language are not inferable from its surface structures, but also it could never contain enough information. Children who had no linguistic content in their mind prior to experience would have an endless number of logically possible, combinatorial hypotheses to consider. Since the number of such hypotheses would be infinite, there could never be enough data in the input to rule them all out, irrespective of the amount of language exposure. The principle of structure dependence is only one of a limited set of highly constraining linguistic principles that guide the construction of humans' complex mental grammars. This mental grammar is termed Universal Grammar (UG) by virtue of the fact that it is applicable to all the languages of the world.

1.3.1 Principles and parameters

Because of the claim that humans' mental grammars are made of innate principles that constrain the course of language acquisition, a subset of generativist-nativist theories are also known as principles-and-parameters theories. The innate principles of UG are termed linguistic universals and they can be absolute or relative. Absolute linguistic universals are properties or structures that appear in all languages (Chomsky, 1981). They are innate not only because, by definition, they hold for all languages, but also because they are highly abstract. They could not be learnt since the relevant information does not have an empirical instantiation¹. Relative linguistic universals are of two types: syntactic categories and parameters. Syntactic categories are relative as not each of them surfaces in every language. In addition, the members of a given category may vary across languages. For instance, possessives are determiners in English and adjectives in Italian (Valian, 2009). Parameters

¹ The case-filter is an example of an underlying linguistic structure for which there is no evidence in the surface structures of language (Valian, 2009).

specify all the possible grammatical options. They are relative by virtue of the fact that they are typically binary-valued² and, for each language, only one value is possible. Examples of parameters include whether or not the subject of a finite verb must be overt (pro-drop or null subject parameter, Chomsky, 1981); whether the head of a sentential constituent comes before or after its complement (head-directionality parameter, Chomsky, 1981); whether bare stems can surface as possible words in a given language (stem parameter, Hyams, 1988), whether tense is morphologically marked on verbs (tense parameter, Legate & Yang, 2007).

Parameters are of particular interest both from a cross-linguistic perspective and a language acquisition perspective (Meisel, 1995). From a cross-linguistic perspective, they offer a way of reconciling nativism with the wide range of variations that can be observed across the world's languages. In this view, children are endowed with an innate set of grammatical options for acquiring different language types. Typological differences across languages are explained in terms of different settings along the innate parameters. From a language acquisition perspective, parameters offer a way of accounting for the differences that can be seen between adult and child grammars. Although children are born with innate linguistic knowledge, parameterised values are not determined *a priori*, but need to be set on the basis of information available in the input.

Two possibilities have been suggested in the literature to describe what child grammar looks like before the correct parametric options have been chosen. Parameters might be set to a default value provided by UG, which may or may not be the correct choice for the target language (Hyams, 1986). Alternatively, all parametric options might be available in child early grammars (Lebeaux, 1988; Valian, 1999; Yang, 2002). One example of the default assumption is the early English as Italian hypothesis (Hyams, 1986). According to this hypothesis the pro-drop parameter is initially set to its positive value [+pro-drop]; hence, early grammars generate null-subject languages. One problem with this hypothesis is whether and how the parameter can be reset, as it has been argued that parameters cannot be reset (Clahsen, 1991). Other issues include how to identify the default

² As pointed out by Meisel (1995), the binary setting is not a necessary restriction and multivalued parameters have also been suggested in the literature (Wexler & Manzini, 1987).

specification of each parameter and whether or not a default value should be assumed for all parameters (Meisel, 1995).

As pointed out by Meisel (1995), one important aspect of parameter theory is that there exist at least two types of parameters, one generating two distinct sets of structures, e.g., the head-directionality parameter, and one for which the set of structures generated by one value appears to be a subset of the one generated by the other value, e.g., the pro-drop parameter and the stem parameter. As regards the stem parameter, for example, the argument is that the option [+bare-stem] allows for bare stems to surface as possible words. However, in bare-stem languages, stems can also combine with inflectional markers. Conversely, in non-bare-stem languages stems must always bear an inflectional ending and bare stems are not allowed as possible words. Therefore, the negative setting of the stem parameter is more restrictive. The default value should be the one that generates the smaller set of structures, because it allows the child to realise, on the basis of positive evidence only, that the parameter needs to be reset (Wexler & Manzini, 1987). Indeed, in this view, children can only rely on examples of how a parameter is realised in the input language to identify the value that fits the target language (Valian, 1999). Negative evidence or correction is not needed (Chomsky, 1975) and usually not available because children's grammatical errors are not corrected and corrections, even if given, are likely not understood (Pinker, 1989). Indirect negative evidence, that is hypotheses made by children about the absence of a given structure in the ambient language, is not a reliable learning strategy either, because there is no principled way of knowing how long one should wait before concluding that a given structure will never surface in the input language (Valian, 1999). Moreover, the absence of a structure in the input language does not necessarily mean that that structure is not an option offered by the target grammar (Valian, 1999). Learnability considerations of this kind do not apply to parameters with independent values, which makes it impossible to identify the default value for this type of parameters on the basis of principled reasons, or even to claim that a default value is necessary for them (Meisel, 1995). In the alternative options, at any given time, children can access all parametric values (Valian, 1999) or, have several grammars, each one specifying a particular setting for each parameter, that compete probabilistically to match the environmental linguistic evidence (Yang, 2002).

A crucial issue in parameter theory concerns how one should imagine parameter setting to actually occur. This issue is particularly complex since it relates to the role played by the input in a theory that claims that the input that all children receive is fragmentary and consequently not sufficient to fully account for language acquisition. Moreover, it specifically arises for parameters because non-parameterised properties of UG are not learned but belong to the child's *a priori* knowledge (Meisel, 1995). Two possibilities have been suggested in the literature to answer this question: triggering (e.g., Roeper & Weissenborn, 1990; Fodor, 1998) and hypothesis testing (Valian, 1999; Yang, 2002). According to the former possibility, parameter setting is triggered by well-defined features of the data, possibly by "one unique trigger specified by UG" (Roeper & Weissenborn, 1990, p. 151). This restriction allows the child to deal with the ambiguous character of the linguistic data. For example, in certain contexts, pro-drop languages allow for lexically realised subjects and non-pro-drop languages allow for empty subjects; hence, the child should not take the presence/absence of subject pronouns as unambiguous evidence that in the target language the pro-drop parameter must be set to either value (Haegeman, 2000). Conversely, the presence of expletive subjects provides unambiguous evidence that, in the target language, the pro-drop parameter must be set to its negative value (Hyams, 1986). One problem with the triggering model is that it is not known whether a unique trigger can be identified for each parameter (Meisel, 1995). Furthermore, triggering calls for an abrupt reorganisation of children's grammars for which there is no evidence in the acquisition literature (Yang, 2002). According to the alternative option, children subconsciously move from one linguistic hypothesis to another, on the basis of the linguistic evidence available to them. Hypothesis testing does not idealise language learning as instantaneous; it also provides children with a mechanism that enables them to adequately deal with the ambiguity of the input data (Valian, 1999, Yang, 2002).

The correct setting of a parameter typically yields a cluster of apparently unrelated syntactic phenomena or properties of the target grammar (Chomsky, 1981, p. 6). For instance, the setting of the pro-drop parameter is linked not only to null-subjects but also to other syntactic properties. One is that non-pro-drop languages require expletive subjects like *it* and *there* in *it rains* and *there is*, whereas dummy subject pronouns are never used in pro-drop languages. On the other hand, null-subject languages allow inversion of subjects

in simple sentences, as in Italian *ha telefonato Angela*, *Angela telephoned*. The pro-drop parameter relates also to particular properties of the auxiliary systems: in non-null-subject languages auxiliaries and modals are syntactically and morphologically distinguished from main verbs, whereas in null-subject languages they exhibit the same syntactic and morphological characteristics as main verbs (Hyams, 1986, pp. 26-62).

1.3.2 Syntactic categories and the acquisition of inflections

A further task of first language acquirers is to assign the incoming particular words of the target language to the innate, universal syntactic categories. In this view, children do not have to learn about syntactic categories for these are part of their initial knowledge of language. Language-specific learning involves putting together the list of lexical items representing a given syntactic category (e.g., Noun, Verb, Adjective, Preposition, Determiner, etc.) in the target language. Syntactic categories also include phrases (e.g., Noun Phrase, Verb Phrase, Determiner Phrase, etc.) and functional categories (e.g., Tense, Agreement, Aspect, etc.). Again exposure to the input or positive evidence is sufficient to work out the mapping between particular words and abstract syntactic categories (Valian, 1999). The production of inflected forms is governed by functional categories. In other words, children inflect words by using a general procedure of the type stem + inflection that operates over every inflection-bearing lexical item stored in their lexicon. Although children's innate knowledge includes the fact that every language contains syntactic categories and that morphological marking takes place through a formal rule of inflectional morphology, it is assumed that this innate knowledge does not specify whether a particular syntactic category can surface as a bare stem or receives morphological marking. Children learn from linguistic experience whether bare stems are allowed (Hyams, 1988) and whether verbs receive tense marking (Legate & Yang, 2007).

1.3.3 The 'three factors' approach

A further development within generativist-nativist theories is represented by the 'three factors' approach (Chomsky, 2005). In the principles and parameters model the suggestion is made that the properties characterising the language that a child eventually comes to acquire can best be explained with the existence of a fixed set of principles valid for all

languages combined with settings for a finite set of switches. The ‘three factors’ approach does not depart from these fundamental assumptions but more explicitly aims to discover the mechanisms that limit natural languages to “optimal types” (Chomsky, 2005, p. 5). It is claimed that “a core problem of the study of the faculty of language” (Chomsky, 2005, p. 5) is to discover how much of the principles and parameters model can be taken as a result of this optimal design of the human language. The ‘three factors’ approach adopts a biolinguistic perspective and assumes that important aspects of language can be studied as part of the natural world. In this view, the language faculty is conceived as an “organ of the body” (Chomsky, 2005, p. 1) resembling systems such as mammalian vision and insect navigation. The attained language is seen as a state of the language faculty; it is technically termed *Internal language* or *I-language*, as it refers to the subconscious linguistic knowledge that a native speaker of a language has. The assumption that the language faculty has the same general properties as other biological systems leads to the claim that language development can more accurately be described as a process of growth rather than learning. In this view, the growth of an individual’s language is induced by the interaction of three factors: Universal Grammar, which is genetically endowed to humans, external experience, which leads to variation within a narrow range, and principles that are not specific to the faculty of language and possibly not even species-specific. In relation to the second factor, variation can only occur along predetermined lines of modification that lead to limited kinds of varieties. In Chomsky’s words:

If acquisition is a matter of selection among options made available by the format provided by UG, then the format must be rich and highly articulated, allowing relatively few options; otherwise, explanatory adequacy is out of reach.

(Chomsky, 2005, p. 8)

Principles, which represent the third factor, can be divided between two subtypes: principles of data analysis and principles of computation.

Under the ‘three factors’ approach, communicative needs cannot explain the creation of language because what makes language unique is not the fact that it provides humans with a means to communicate actions that need to be performed but the fact that it enables them to engage in abstract thinking. Indeed, it is claimed that, from an evolutionary perspective, language played a crucial role in the emergence of the human intellectual

capacity. Language shapes humans' knowledge of the surrounding world and produces their capacity for symbolic thinking and planning as it allows "infinite combinations of symbols" and therefore "mental creation of possible worlds" (Jacob, 1982, p. 59). Therefore UG, the first factor, must provide:

the core semantics of minimal meaning-bearing elements, including the simplest of them and the principles that allow infinite combinations of symbols, hierarchically organized, which provide the means for use of language in its many aspects.

(Chomsky, 2005, p. 4)

These mechanisms can be thought of as biological systems that change state under the triggering and shaping effect of external factors in accordance with the internal design and reach a stable state in which they perform specific kinds of computations. As for any other biological system, growth can only be compromised if it takes place in "extremely hostile environments" (Gallistel, 1997, p. 88). This approach also incorporates a maturational perspective by claiming that some genetic elements may determine computational limitations that disappear through genetically timed maturation.

A further claim is that, as the language faculty represents "a system of discrete infinity" (Chomsky, 2005, p. 11), it must incorporate a basic operation that takes n already constructed linguistic items and merges them into a new item, "in the simplest case, the set of these n objects" (Chomsky, 2005, p. 11). It is this function, called *Merge*, that confers to language its unique property of being "an unbounded system of hierarchically structured expressions" (Chomsky, 2005, p. 11). From a language acquisition perspective, it is hypothesised that *Merge* is likely to be genetically endowed to children but only manifested to a limited extent in them owing to memory and attention deficits. These limitations would explain why, in performance, it can be observed that language acquisition takes place through stages where children are first able to produce one-word utterances, and progressively move to two-word utterances, three-word utterances and so on until they eventually arrive at "unbounded generations" (Chomsky, 2005, p. 12). However, Chomsky (2005) points out that these same limitations do not seem to be present in comprehension, as it is commonly observed that from the earliest stages of development children understand much more complex utterances and that even small modifications that are inconsistent with the adult language yield confusion and misinterpretation. Indeed, a

number of studies through the acquisition literature suggests that children understand more about the phonemic sequence and semantics of words than they are able to produce (e.g., Goldin-Meadow, Seligman & Gelman, 1976; Thomson & Chapman, 1977; Karmiloff-Smith, 1977; Clark & Hecht, 1982). Discrepancies between comprehension and production have also been reported in studies of the acquisition of inflectional morphology (e.g., Fraser, Bellugi & Brown, 1968; Anisfeld & Tucker, 1968). On the one hand, it has been pointed out that experimental studies comparing production and comprehension are flawed because they are based on imitation tasks that omit a factor that is crucial in production but not in comprehension, i.e., the speaker's communicative intention (Clark & Hecht, 1982). On the other, it has also been shown that children consistently appear to comprehend something of a given construction even when they are not able yet to produce it themselves in spontaneous speech (e.g., Winitz, 1981; Clark & Hecht, 1982).

1.4 Chapter summary

In this chapter, I have introduced the alternative accounts that constructivist and generativist-nativist approaches give of the acquisition processes that lead to the formation of the adult mental grammar. *Prima facie*, how to tease apart empirically a constructivist account of the acquisition of inflectional morphology from a generativist-nativist account is a complicated issue. It is complicated by the fact that, on any account, children must learn inflections gradually and based on the input. However, the competing assumptions the two accounts make about children's initial state have consequences for the strategy each theory claims as underlying the acquisition of inflectional forms. On constructivist accounts, learning of inflections, as any other aspect of language learning, is strictly item-based; hence, it happens on a word-by-word basis almost. In the initial stages of acquisition, generalisations are not in place and early correct performance simply reflects rote learning. This means that inflections are not used productively, i.e., in an adult-like fashion. The opposite is true of generativist-nativist accounts, where acquisition is gradual in the sense that inflectional paradigms are not expected to be acquired all at once, but the acquisition of each paradigm happens on an inflection-by-inflection basis. However, the acquisition of each individual inflection is less gradual because Inflection is an innate functional category and, as soon as children identify the phonological shapes that it takes in their input language, they are able

to make a morphological analysis of inflected items. The competing predictions about the emergence of inflectional morphology in the BFLA setting are outlined in the fourth chapter. In the next chapter, I review current research on the acquisition of two languages from birth.

CHAPTER 2

Bilingual first language acquisition

2.1 Introduction

Research has shown that the acquisition of two languages from birth can be regarded as an instance of the acquisition of two native languages. This is why this type of linguistic development is often labelled as *Bilingual First Language Acquisition* or *BFLA* (Meisel, 1989). According to Meisel (2001), BFLA can also entail the acquisition of more than two languages, as well as the acquisition of a spoken and a signed language. Several research findings underpin this conclusion. It has been argued that BFLA children attain native competence in each language by mere exposure to the input (e.g., De Houwer, 1990). It has been shown that the developmental sequences that lead to this grammatical knowledge are the same as those established for monolingual acquirers of each language, and that the achievement of each linguistic milestone falls, in each language, within the time range regarded as normal in monolingual development (e.g., De Houwer, 1990, 1995; Sinka & Schelleter, 1998; Petitto & Kovelman, 2003; Meisel, 2004; Petitto, Katerelos, Levy, Gauna, Tétrault & Ferraro, 2001). The equivalence between the acquisition of one and two first languages is evident even for children affected by specific language impairment (SLI). French-English bilingual six-year-olds with SLI have been shown to display the same level of inaccuracy with verb morphology as monolingual children with SLI, in each language (Paradis, Crago, Genesee & Rice, 2003). At the same time, once again paralleling monolingual children with SLI, they exhibit greater accuracy with noun morphology. As the authors point out, the crucial implication of this finding is that, even under conditions of language impairment, BFLA does not alter nor delay the acquisition process.

Considerations concerning human biology and socio-cultural contexts of life seem to allow for an overturning of the once dominant assumption that, in language development, monolingual acquisition is the norm and bilingual acquisition is a deviation from that norm (e.g., Volterra & Taeschner, 1978; Vihman, 1985), and hence, challenging to the point of being detrimental and to be avoided. Neuro-imaging studies (Kovelman, Baker & Petitto, 2008; Kovelman, Shalinsky, Berens & Petitto, 2008) show a greater extent

of activation of the classic language-dedicated brain areas in highly proficient, early exposed young bilingual adults (mean age, 20 years old) processing English as compared with monolinguals processing English. As highlighted by the authors, this finding seems to suggest that simultaneous bilinguals recruit a larger portion of the neural tissue underlying language processing than monolinguals, as if monolinguals did not fully exploit the language processing brain potential. The authors go as far as to suggest that the human brain might be biologically set for the acquisition of multiple native languages.

Socio-culturally, it has been pointed out that bilingualism is not at all uncommon. Although there are not official statistics, it can be speculated that, across the world, linguistically heterogeneous communities, where children are simultaneously exposed to two or more languages from infancy, are as many as or even more numerous than monolingual communities (Tucker, 1998). Biologically, children are not programmed to acquire any specific language, as they need to acquire, and *inevitably*³ do so, the language of the community in which they grow up. Following the same line of reasoning, it cannot be argued that they are programmed to acquire only one native language, as opposed to two (or more), because they could very well be born into a linguistically heterogeneous community.

In this chapter, I first focus on terminological issues in BFLA acquisition; then, I outline current research views on language separation, language interaction and what similarities can be identified between monolingual and bilingual first language acquisition.

2.2 The cut-off of exposure

One preliminary issue in BFLA concerns how to differentiate between the simultaneous acquisition of two languages and early sequential bilingualism. Researchers have focused on the age limit that should distinguish simultaneous from successive or sequential bilingualism and they have indicated different cut-offs of exposure. McLaughlin (1978) and Taeschner (1983) regard as instances of the simultaneous acquisition of two languages all the cases in which exposure begins before the three years of age. Padilla and Lindholm (1984) consider this age limit arbitrary and argue that it makes sense to speak of

³ Penfield and Roberts state that “the learning of the mother tongue is an inevitable process” (1959, p. 240).

simultaneous bilingualism exclusively when dual language exposure starts at birth. Paradis, Crago, Genesee and Rice (2003) use the term bilingual to refer to children whose simultaneous exposure to two languages starts before the age of three. Genesee and Nicoladis (2007) extend the onset of dual exposure to the fourth birthday. De Houwer (1995) claims that bilingual language acquisition refers to children who are regularly addressed in two languages from before the age of two. Within bilingual language acquisition, she further distinguishes between BFLA and Bilingual Second Language Acquisition (BSLA). She argues that the definition of BFLA can be utilised for all those instances where exposure to two languages starts within the first week of life (1990) and, subsequently, she stretches the cut-off of exposure to the first month (1995). BSLA refers to the acquisition of two or more languages from after the first month of life but before the age of two (1995). The researcher's explanation for such a distinction is that, in comparisons between bilingual and monolingual children, when exposure is delayed by more than a month, the variables to consider become two: not just more than one language but also time of first exposure. However, no theoretical grounding to such distinction is offered, in the sense that it is not explained what actually might change in the acquisition process after the first month of life, so that time of first exposure becomes a relevant variable.

These positions diverge to a considerable degree and a general consensus on the cut-off of exposure has not been reached yet. However, as the focus of this study is the early morphological development of children who have received consistent dual language exposure from the very first day of life, the term BFLA is used in this thesis to refer to the simultaneous acquisition of two languages from birth.

2.3 Linguistic imbalance

One other issue in the study of children acquiring two first languages has been whether or not they develop their two languages in a balanced fashion. The common wisdom is that a balanced bilingual state is rare. However, as pointed out by Meisel (2007), a principled explanation of why one language should always dominate the other has never been provided. In fact, at a deeper analysis, the idea of imbalance in bilingual development appears to have originated from and to be surrounded by a considerable amount of

conceptual and terminological opacity. Firstly, the nature of such imbalance remains unclear. More precisely, it is not always made explicit whether the differences between a bilingual child's two languages exclusively pertain to linguistic performance or also entail incomplete competence in one of them. Secondly, there appears to be a real terminological disagreement among researchers. Some researchers (Gawlitzek-Maiwald & Tracy, 1996; Meisel 2001) distinguish between the preferred language and the dominant language of the BFLA child, linking the former definition to individual linguistic preference and the latter to the predominant ambient language. Other scholars (Lanza 1997; Nicoladis & Genesee, 1998; Paradis, Crago, Genesee & Rice, 2003; Cantone, Kupisch, Müller & Schmitz, 2008) term the individual's preferred language as well as the language more strongly present in the learning environment the dominant language and the other one the non-dominant language. Yet other researchers make a distinction between the stronger language and the weaker language of bilingual children (Leopold, 1970; Schlyter, 1993; Döpke, 1998, 2000; Bonnesen, 2009). Furthermore, the language that predominates in the larger environment is often referred to as the majority language, whereas the home language is labelled as the minority language (Allen, 2007).

In this study, it is maintained that imbalance in BFLA is a proficiency issue (De Houwer, 1990; Meisel, 2007; Cantone *et al.*, 2008), and that, as often noticed, the relative level of proficiency between a bilingual's two languages is not a static phenomenon. Language dominance can shift many times across a bilingual's lifespan, depending on a series of external circumstances (Leopold, 1970; Grosjean, 1982, 2010; Lanza, 1992; Olsson & Sullivan, 2005). Thus, it does not seem appropriate to speak of strength in relation to linguistic imbalance in simultaneous bilingualism, because the distinction stronger versus weaker seems to imply qualitative and not just quantitative differences in the bilingual child's syntactic knowledge. The terminology of preferred language is also avoided, because language preference or avoidance is not always a measure of language proficiency: there are cases, documented in the literature, of simultaneous bilingual children who are not reluctant to use the language in which they are less proficient (De Houwer, 2009). In this study, the terminology of dominant language is adopted to refer to the language in which the children perform better at a given point in development, and of non-dominant language in the opposite circumstance. With regard to the environmental

languages, the majority-minority distinction is adhered to. Since the bilingual longitudinal study was conducted in Ireland, a predominantly English-speaking country, English is referred to as the majority language and Italian as the minority language.

The children participating in the present study appear to be developing their two languages in a seemingly balanced fashion. However, as pointed out above and as it will be further discussed in Chapter 5 (see section 5.2), linguistic balance is certainly not a static state nor balance versus non-balance is a binary condition. Quite to the contrary, it can more accurately be described as a continuum where numerous external circumstances may produce even considerable balance shifts across a bilingual's lifespan. As it will be better explained in Chapters 4 and 7 (sections 4.7 and 7.3), in this study, a rather balanced linguistic state is a preliminary condition for the cross-linguistic comparisons in the acquisition of inflectional items. Indeed, it is plausible that linguistic imbalance could affect development of inflectional morphology regardless of the typological nature of the language being acquired. In other words, if children were developing their two languages in a non-balanced fashion, it would become impossible to establish whether potential delayed acquisition of inflectional morphology in the non-dominant language were to be ascribed to dominance factors or if it were to be imputed to the typological nature of the language in question.

2.4 Language separation

The study of bilingual first language acquisition started in 1913, when the French linguist Jules Ronjat published a detailed report on his son Louis' simultaneous acquisition of French and German. Ronjat claimed that Louis had acquired both languages in a native-like fashion and did not show signs of confusion. He imputed Louis' ability to separate his two languages to the fact that he and his German wife exclusively used their respective native languages with him. This conclusion began to be questioned in 1949, when the German linguist Werner Leopold published the last instalment of a detailed diary of his daughter Hildegard's simultaneous acquisition of English and German. Leopold equally claimed that both parents consistently used their native languages with the child. Nevertheless, for a period of time, Hildegard mixed words from German and English within the same utterance. This circumstance led Leopold to state that his daughter had gone through a stage

of linguistic confusion in which she behaved like a monolingual. Ronjat and Leopold can be regarded as the precursors of the two opposite views that have dominated the study of BFLA for more than twenty years (Genesee & Nicoladis, 2007).

The first explicit claims for an initial monolingual system were made by Volterra and Taeschner (1978). They hypothesised that bilingual children go through a first stage when they have one linguistic system, with one lexicon without cross-linguistic synonyms and one set of grammatical rules. In a second stage, children acquire translation equivalents but do not differentiate syntactic rules. According to the Unitary Language System Hypothesis⁴ (ULSH), differentiation of two distinct syntactic systems during bilingual acquisition does not begin to occur until a third stage in development, when children are approximately three years old. As pointed out by Genesee (1989), this theoretical position holds that BFLA children are not really bilingual until they reach the three years of age. The researcher argues that, from a neuro-cognitive perspective, the ULSH implies that the human ability to acquire language is an endowment for the acquisition of only one language; hence, in this view, BFLA is challenging because it exceeds the biological predispositions of the language faculty. Consequently, it is likely to result in a type of acquisition that differs from what is known for monolingual development and may implicate linguistic confusion, delayed language development of one or both languages, and even incomplete development of either language.

Hypotheses for an initial unitary system were borne out of the finding that bilingual children mix elements from their two languages within the same utterance. Code-mixing (term due to Meisel, 1989), also named cross-linguistic influence, interference or transfer (Nicoladis, 2002) is quite common in the speech of BFLA children and can occur at any level of the linguistic structure: phonological, lexical, morphological and syntactic (Genesee & Nicoladis, 2007). According to Lanza, language mixing is “a cover term for any type of linguistic interaction between two (and potentially more) languages” (1997, p. 3).

Contrary to the ULSH, current research has convincingly shown that BFLA children’s code-mixing is rule-governed and, therefore, it cannot be regarded as a sign of linguistic confusion. BFLA children’s code-mixing appears to be grammatically

⁴ This view is also supported by Taeschner (1983) and Vihman (1985).

constrained from the outset of combinatorial speech. Code-mixing has been explored in the speech of bilingual children learning different language pairs: French and German (Meisel, 1994); French and English (Paradis, Nicoladis & Genesee, 2000); English and Norwegian (Lanza, 1997); and Inuktitut and English (Allen, Genesee, Fish & Crago, 2002). From all these studies it has emerged that bilingual children usually code-mix only when the grammars of their two languages share the same structure; they hardly ever code-mix at points where the grammars of their two languages differ. Paradis, Nicoladis and Genesee (2000) have shown that even when mixed utterances involve non-concordant structures, code-mixing is grammatically constrained. They examined mixed utterances occurring in spontaneous speech samples of 15 French-English bilingual children between the age of 2;0 and 3;6. Mixed utterances were assigned to either English or French on the basis of sociolinguistic and psycholinguistic criteria. With regard to sociolinguistic factors, the target language was defined as “the expected or typical language for the type of interaction in the discourse sample” (Paradis *et al.*, 2000, p. 251). On the basis of psycholinguistic factors, it was identified with “the language from which the majority of the child’s morphemes come in a stretch of discourse” (*ibid.*, p. 251). One of the non-shared structures on which they focused was adjective placement. Adjectives always precede the noun they modify in English. Conversely, in French, some adjectives precede the noun and some others follow the noun. The researchers found that when an adjective was borrowed from English into French in an utterance in which French was the target language, the adjective was virtually always placed where the French translation equivalent would have appeared.

Current research has also provided evidence for differentiation of the BFLA children’s two languages from the earliest observable stages of acquisition (Genesee, 1989; Meisel, 1989; De Houwer, 1990; Lanza, 1992; Pearson, Fernandez & Oller, 1995; Quay, 1995; Paradis & Genesee, 1996; Gawlitzek-Maiwald & Tracy, 1996; Sinka & Schelleter, 1998 among others). Research on speech perception has shown that monolingual four-month-olds can differentiate between their native language, Spanish, and a language within the same rhythmic group, Catalan (Bosch & Sebastián-Gallés, 1997). Bosch and Sebastián-Gallés (2001) have shown that, similarly, children raised bilingually with Catalan and Spanish are able to discriminate the language-specific phonological contrasts of their two input languages from as early as four months. As pointed out by the authors, this finding

indicates that reduced exposure to each language does not delay the emergence of these differentiation abilities in BFLA children. Meisel (2001) argues that this finding further suggests that children are in possession of the perceptual and cognitive capabilities needed to build two separate linguistic systems from the earliest stages of language development. From the one-word stage, children are able to appropriately select words from either language depending on the language of the other speaker (Quay, 1995; De Houwer, 1990; Genesee, Nicoladis & Paradis, 1995; Lanza, 1997). Bilingual two-year-olds have been shown to display the same socio-pragmatic sensitivity even with unfamiliar monolingual addressees (Genesee, Boivin & Nicoladis, 1996; Petitto & Kovelman, 2003).

If on the one hand it is true that code-mixing is ubiquitous among bilinguals, on the other, researchers have found that bilingual children produce translation equivalents as soon as they begin to speak (Pearson, Fernández & Oller, 1995; Quay, 1995; Nicoladis, 1998; Deuchar & Quay, 2000). Pearson, Fernandez and Oller (1995) estimate that, from the age of 1;5, translation equivalents represent 20-25% of their productive vocabulary. It is well known that monolingual children's acquisition of new words is guided by the principle of mutual exclusivity (Markman, 1992). Children are biased towards thinking that there can exist only one label for each referent in the world. This bias leads them to assume that new words refer to new referents. As pointed out by Patterson and Pearson (2004), at first sight, simultaneous bilingual children's acquisition of words in each language with the same referential meaning appears to be a violation of the principle of mutual exclusivity. However, the researchers argue that the production of cross-linguistic synonyms can be taken as strong evidence that bilingual children are acquiring two separate languages and have two distinct lexical systems. Furthermore, bilingual lexical development closely resembles monolingual vocabulary acquisition as far as any other aspect is concerned. Bilingual children's onset of canonical babbling has been shown to be the same as for monolingual children (Oller, Eilers, Urbano & Cobo-Lewis, 1997). Studies that have examined bilingual children's production of first words report that they begin to produce their first words at about the same age as their monolingual counterparts, between 1;0 and 1;1 (Patterson & Pearson, 2004). Bilingual children's rates of vocabulary development generally fall within the age range reported for same-aged monolinguals, as long as both languages are considered for bilinguals (Pearson, Fernández & Oller, 1993). Bilingual and

monolingual children's early lexicons are characterised by a similar distribution of lexical categories, i.e., noun, verb, adjective, adverb (Nicoladis, 2001).

From the two- and early multi-word stage, BFLA children use language-specific syntactic constructions and word order patterns in each of their languages. For example, Paradis and Genesee (1996, 1997) found that two- and three-year-old French-English bilingual children placed verbal negatives after lexical verbs in French but before lexical verbs in English. Similarly, two- and three-year-old French-English bilinguals have been shown to place object pronouns before the verb in French and after the verb in English (Paradis, Nicoladis & Genesee, 2000). Sinka and Schelletter (1998) found that, at the age of two years and a half, the German-English BFLA child they studied, Sonja, consistently used verb third constructions in her English utterances and verb second constructions in her German utterances. Target-deviant word order patterns are mostly absent even from the speech of children who are dominant in one of their languages. Bonnesen (2009) studied the speech production of two children in the DuFDE corpus (*Deutsch und Französisch - Doppelter Erstspracherwerb / German and French - The acquisition of two first languages*), Christophe and François, who stopped using French when they were 3;0 and 4;0 respectively, for a period of three months. His analysis shows that when they resumed the use of French, word order patterns from German, their dominant language, had not been incorporated into French.

As pointed out by Genesee (2001), it is difficult to reconcile such differentiated language use with a hypothetical unitary system, because one would expect random use of each language, if BFLA children possessed a fused or unitary system constituted by elements from their two input languages. In Genesee's words:

Research findings on bilingual children challenge the notion of the monolingual mind designed to handle only one language system and burdened with dual or multiple language input. To the contrary, extant results support a view of the mind that is fundamentally capable of acquiring more than one language at the same time thus, a bilingual or even multilingual mind.

(Genesee, 2001, p. 165)

and further:

Whether or not individual children exposed to two languages at birth become bilingual is largely a matter of circumstance rather than of inherent limitations in the language faculty's ability to handle two languages at the same time.

(Genesee, 2001, p. 161)

2.5 Language interaction

If code-mixing is not due to the fact that, in the first years of life, BFLA children only possess one undifferentiated linguistic system, why does code-mixing occur? Researchers have proposed multiple explanations that all interpret mixing in terms of performance or linguistic behaviour, rather than in terms of the child's underlying syntactic knowledge. According to this type of explanations, children code-mix to bridge linguistic gaps. Evidence in support of proficiency-based explanations of mixing has been presented both from the lexical domain (Genesee, Nicoladis & Paradis, 1995; Deuchar & Quay, 2000) and the morpho-syntactic domain (Gawlitze-Maiwald & Tracy, 1996; Hulk, 2000; Müller & Hulk, 2001; Döpke, 2000).

As far as the lexical domain is concerned, it has been argued that code-mixing is more likely to occur in the less proficient language (Genesee, Nicoladis & Paradis, 1995) and in the absence of translation equivalents of specific lexical items (Deuchar & Quay, 2000). As for the morpho-syntactic domain, it has been claimed that language mixing might be triggered by the necessity to bridge structural gaps. For example, Gawlitze-Maiwald and Tracy (1996) studied a young German-English bilingual child, Hannah, between 2;1 and 4;3 years of age. They noted that, from when the child was 2;4 to when she was 2;9, her mixing regularly resulted in patterns where the left periphery of German main clauses (i.e., *wh*-elements, verb endings, auxiliaries and modals) was borrowed into English clauses. They found utterances such as *kiwi... du hast gebuyed them?* (*kiwi you have ge-bought them?*) and *sie haben gone away* (*they have gone away*) (Gawlitze-Maiwald & Tracy, 1996, pp. 911 and 915). At the same time, they did not find any mixed utterances where functional items were taken from English and borrowed into German clauses, in any of the child's files. The period when the child produced this kind of mixed utterances followed the acquisition of functional items in German and preceded the acquisition of modals, auxiliary and third person agreement features in English. After functional elements

were acquired in English (age 2;9), this type of code-mixing considerably decreased in frequency. The researchers argued that code-mixing helped the child to “bridge not just lexical but also structural gaps” (1996, p. 910); thus, when English reached the same level as German, the necessity to borrow placeholders disappeared. They concluded that, although “each language develops independently as it would in a monolingual child” (1996, p. 907), this kind of code-mixing can be regarded as a sort of “pooling resources” and presupposes considerable linguistic knowledge. For this reason, they called it bilingual bootstrapping suggesting a connection with the types of syntactic bootstrapping explored in research done in monolingual acquisition, where children can use syntactic frames to figure out the meaning of unfamiliar verbs (e.g., Brown, 1973; Pinker, 1984).

As for the syntactic domain, it has also been argued that transfer is more likely to occur with functionally equivalent structures from the two languages that overlap at the surface (Döpke, 2000; Müller & Hulk, 2001). Döpke (2000) found that Australian children, acquiring English and German from birth, used VO word order in all their German clauses much more often than their German monolingual counterparts. German is a V2 language, which allows for both VO and OV word order in subordinate clauses and for VO word order only in main clauses. She argued that the bilingual children overgeneralised VO word order in their German utterances, because it appeared in both the English and the German input, unlike OV word order, which only appeared in a few German subordinate clauses. Basing her argument on the Competition Model developed by MacWhinney and Bates (MacWhinney, 1987; Bates & MacWhinney, 1989), she hypothesised that, in BFLA acquisition, interaction may occur in contexts where the two input languages present similar structures. In that instance, children receive ambiguous cues, because cues available in one language are reinforced by analogous cues available in the other language. Consequently, cues available across languages weaken the inherent strength of cues only available intra-linguistically, yielding the production of target-deviant structures. Conversely, structures, which do not present similarities, do not change the intra-linguistic cue strength and do not lend themselves to transfer.

Generativist-nativist researchers have come to similar conclusions. Hulk and Müller (2000) and Müller and Hulk (2001) proposed that interaction may be expected (a) in structures that are problematic for monolingual children, which they argue lie in the C-

domain, where two levels of the linguistic structure (syntax and pragmatics) meet, and (b) that overlap at the surface. More precisely, the structural ambiguity between a bilingual child's two languages may emerge if one language (language A) allows for more than one structural analysis for a syntactic construction, and the other language (language B) contains a lot of positive evidence for one of the structures allowed by language A. In this case, the input of language B can influence the grammar being acquired for language A but not vice-versa. The complex nature of the C-domain explains why both bilingual and monolingual children have difficulties with C-related constructions, such as V2, complementiser insertion and topicalisation. The main difference is that in bilingual acquisition these problems are magnified and last longer, because bilingual children are confronted with a wider array of syntactic constructions. Therefore, it is more challenging for them to map universal principles onto language-specific structures and pragmatic principles onto syntactic structures.

The suggestion has also been made that transfer could be triggered by language dominance, in the sense that children might be more prone to incorporate linguistic structures from their dominant language into their non-dominant one than the reverse (Döpke, 1998; Yip & Matthews, 2000). However, neither language dominance nor structural ambiguity between the input languages can fully account for cross-linguistic influence. For instance, the structure of compound nouns in English and in French does not overlap because compounds are always left-headed in French, as in *homme-orchestre*, and right-headed in English, as in *policeman*⁵. Therefore, they should not lend themselves to cross-linguistic transfer. Bilingual children have been shown to mix this unambiguous structure. Nicoladis (1999, 2002) found that, in production⁶, English-dominant, French-English bilingual children, between the ages of three and four years, reversed compound nouns in English more often than age-matched English monolinguals but equally often as French-dominant bilinguals. She attributed her finding to the influence of French and concluded that simultaneous bilingual children can also mix non-overlapping structures and that cross-linguistic influence does not occur unilaterally from the non-dominant to the dominant language, but it can be observed in both languages. It has also been claimed that

⁵ Examples from Nicoladis, 2002, p. 848.

⁶ No cross-linguistic effects were found in a compound comprehension task.

transfer might take place when certain features of the input languages are normally acquired at different stages of grammatical development. For example, relative clauses are acquired earlier in Chinese than in English and this might determine the production from Chinese-English BFL learners of relative clauses in English that are structured according to the Chinese model (Yip & Matthews, 2000).

Hulk (2000, p. 75) explained transfer in terms of processing mechanisms peculiar to bilingualism: when one language is activated, the other is inhibited but the inhibition is never complete. This concept of lack of inhibition is reminiscent of Grosjean's (1999) formulation of a bilingual language mode. It has also been endorsed by Meisel, who argued that transfer may be regarded as a sort of "covert code-switching" (Meisel, 2007, p. 506), where syntactic structures of one language are activated but no lexical elements from that same language are employed. Genesee (1989) noticed that monolingual children also produce target-deviant structures as a result of intra-linguistic transfer, before the relevant target-structures have been acquired. This is the case of overgeneralisation errors with verb or noun morphology (e.g., **goed* instead of *went* or **mouses* instead of *mice*), where the morphological process of adding inflections to stems, needed to inflect regular verbs and nouns, is borrowed into the conjugation of an irregular verb or into the declension of an irregular noun. The main difference between bilingual and monolingual mixing is that the latter never crosses language boundaries but always conforms to the overall structure of the language in which it occurs (Genesee, 2001, p. 161).

2.6 Chapter summary

As it appears from this discussion, much research on BFLA has been driven by theoretical and practical concerns, such as whether BFLA children differentiate the two languages from the outset of the acquisition process (e.g., Volterra & Taeschner, 1978; Genesee, 1989; Meisel, 1989; De Houwer, 1990) and whether the two linguistic systems develop separately or interdependently (e.g., Paradis & Genesee, 1996; Gawlitzek-Maiwald & Tracy, 1996; Sinka & Schelleter, 1998). Consequently, numerous studies have compared the development of bilingual children to that of monolingual children acquiring the same languages. On the one hand, these comparisons may be detrimental because they risk attributing any potential differences to deficits in children's capacity to acquire two

languages simultaneously (Cook, 2002). On the other hand, they can reveal the extent to which 2L1 acquisition actually differs from monolingual acquisition and, most importantly, what such differences implicate (Genesee & Nicoladis, 2007). When comparing BFLA with monolingual acquisition what is striking is how much the two acquisition processes are similar to each other. Bilingual children resemble their monolingual counterparts in both patterns and rates of acquisition, in each language and in every linguistic domain, lexical, phonological and morpho-syntactic. This proves true even at an empirical level. For instance, it is a common experience for native speakers of either of BFLA children's two languages not being able to tell them apart from monolingual acquirers of the same languages. Current research has shown that even code-mixing and the production of translation equivalents, that *prima facie* would seem to set bilingual acquisition apart from monolingual development, can be regarded as strong evidence of early language separation in bilinguals. This homogeneity in patterns and rates of development between bilingual and monolingual acquisition has been evidenced even among children affected by SLI (Paradis *et al.*, 2003).

These findings show that bilingual first language acquisition can be regarded as a type of first language acquisition, therefore it can be assumed that describing and comparing the emergence of inflectional morphology across the two languages of a BFLA child equates with describing and comparing the emergence of Inflection across two native languages. In the next chapter, I review generativist-nativist and constructivist studies that have explored children's acquisition of inflectional morphology.

CHAPTER 3

The acquisition of inflectional morphology

3.1 Introduction

This chapter focuses on studies adhering to generativist-nativist and constructivist accounts that have explored the emergence of inflectional morphology. I first review generativist-nativist studies of native learners of Italian and BFLA children who acquire language pairs that, like Italian and English, differ in morphological richness. Then, I turn to constructivist studies of monolingual acquirers of Italian and two other Romance languages that, like Italian, are characterised by a rich subject-verb agreement system, namely Spanish and Brazilian Portuguese. I also look at a constructivist study of an Italian-English BFLA child. Finally, I focus on finiteness errors, which is an aspect of the acquisition of Inflection that has been at the heart of considerable theorising by generativist-nativist researchers and that, more recently, has seen a surge of interest in authors adhering to constructivist approaches. At the end of the chapter, I provide a summary where I make a few considerations on the analytical criteria that have been employed in these studies and draw attention to aspects that need further investigation.

3.2 Generativist-nativist studies of the acquisition of Inflection in Italian

Researchers working within a generativist-nativist framework argue that first language acquirers exhibit knowledge of inflectional morphology “from the earliest observations we can make” (Wexler, 1998, p. 30), which is to say from the onset of combinatorial speech, usually around the two years of age (Valian, 1986). Several generativist-nativist studies focus on the acquisition of grammatical morphology in Italian and they all indicate that first language learners of Italian acquire verbal and nominal inflections early in development. Processes such as subject-verb agreement, agreement within the noun phrase and participle agreement have been said to be productive in early Italian grammar (Hyams 1986, 1992; Guasti 1994; Hyams & Schaeffer, 2008).

Guasti (1994) analysed longitudinal transcripts of three monolingual Italian children from the CHILDES database: Martina (1;8 to 2;7), Diana (1;10 to 2;6) and Guglielmo (2;2

to 2;7). The investigation was conducted with the aim of establishing whether, at an early age, native acquirers of Italian distinguish between finite and non-finite forms; and whether and to what extent the functional category of Inflection is present in early grammar. Among the utterances produced by the three children, she considered for analysis only multiword, verb containing, indicative declarative utterances, interrogative utterances and infinitive utterances. She did not include immediate repetitions, self-repetitions, utterances containing the copula and non-finite utterances containing a past participle lacking the auxiliary. In order to evaluate the ability to distinguish between finite and non-finite forms, Guasti looked at the distribution of finite and non-finite verbs and at the placement of clitic pronouns in the three children's spontaneous speech samples. With respect to finite and non-finite forms, she found that, as in the target grammar, infinitives were placed after a governing verb or a preposition. The only target deviations she identified were occasional omissions of prepositions before infinitives, which she attributed to a general process active in early grammar, where prepositions are omitted also before nouns and where other functional categories, such as determiners, can also be defective. Target deviations such as sequences of two main verbs or preposition followed by a main verb were virtually non-existent⁷. She argues that these deviations should occur rather frequently if children did not distinguish between finite and non-finite forms. Similarly, with respect to clitics, she found that, like in adult Italian, atonic pronouns were placed to the left of finite verbs but to the right of infinitives. Again the only target deviation she identified was the omission of clitic pronouns, which for all children decreased with age⁸. On the basis of the distribution of finite verbs and infinitives as well as the target placement of clitic pronouns, Guasti concludes that Italian children, at a young age, differentiate between finite and infinitival forms.

As for knowledge of the subject-verb agreement system, she found that the three children used inflection for person very early, especially with the singular persons and that these inflections were correctly distributed among subjects. Guasti points out that:

⁷ The children's speech samples contain no examples of prepositions followed by a main verb. Utterances containing sequences of two main verbs represent a very small proportion of their speech data. On the basis of Guasti's analysis, they range from 0.14% (Diana) to 0.40% (Martina and Guglielmo).

⁸ Guasti's tables 5, 6 and 7 show that clitic omission is at its highest in the initial stages of the longitudinal data ranging between 39% for Martina (1;11), 33% for Diana (1;11) and 20% for Guglielmo (2;2). These percentages had all lowered considerably by the end of the period considered, ranging between 3% and 4% for Martina (2;7) and Diana (2;6) respectively and 6% for Guglielmo (2;7).

Over the whole period under consideration, the percentage of errors (i.e., verbs used in the incorrect context or with a subject requiring another inflection) is around 1% for Martina and Diana and 3% for Guglielmo. These results confirm the hypothesis that the use of verbal inflection is correct.

(Guasti, 1994, p. 24)

The analysis of Guasti's tables 10, 11 and 12 shows that her calculation of the error rate is based on the ratio of the overall number of correctly inflected verb forms against the overall number of obligatory contexts. A possible (constructivist) criticism could be that this criterion does not reflect children's actual error rate, because it says nothing about the degree of reliability with which *each* inflection is provided. For example, even a very low overall error rate could result from perfect execution of certain person-number combinations and a high degree of inaccuracy with others. This would suggest lack of across-the-board productivity, which is expected under generativist-nativist accounts, provided that the child knows the relevant phonological shapes. On the basis of Guasti's tables, I recalculated the error rate for each inflection. The ratio of correctly inflected forms against obligatory contexts for each person-number combination shows that the error rate is still very low, ranging from 0% to 4% for Martina, 0% to 3% for Diana and 0% to 10% for Guglielmo.

Guasti's qualitative analysis of the error forms shows that most deviations are deviation by number, where the third person singular is used in a context for a third person plural. Moreover, the qualitative analysis of the error forms used by the children shows that, more often than not, other factors can account for target deviations, beside lack of knowledge of the subject-verb agreement system. For example, most of the agreement deviations made by Martina, for whom Guasti provides the exhaustive list of errors, are difficult to interpret as straightforward agreement errors. Out of eight deviations seven revolve around the use of a third person singular in what is apparently a non-target context. Four of these errors are deviations by number, in which the third person singular is used in place of the third person plural. However, in one case only (which occurs when she is only 1;10), Martina produces a sentence where a third person plural subject is used with a third person singular verb form. The remaining three number deviations occur in utterances where the subject is left out. Subject dropping is of course grammatical in Italian but, at the

same time, it makes the interpretation of deviations more problematic. In the utterances in question, for example, it is not possible to establish whether or not the child is thinking of a plural subject. In another case, Martina uses what might be a first person singular in a context for a third person plural.

3.1 *CHI: quetti lalli (= bambini) dommo. these children sleep.

However, as Guasti points out in a footnote, this agreement error could also be accounted for by a difficulty in reproducing the entire sequence of syllables of the correct adult form *dormono*. The author also notes that two errors involve the use of a third person singular verb form with a first person singular subject, which, she suggests, may be due to the fact that children often refer to themselves by using the third person singular. Guasti provides some details of the number of verb types used for some person-number combinations and the number of inflections with which some verb types appear in the children's speech, which are summarised in Tables 3.1 and 3.2

TABLE 3.1 Guasti's analysis of productive use of present tense inflections

Child	Age	1ps	2ps	3ps	1pl	2pl	3pl
Martina	1;8	5		13			
Diana	1;10	3	2	5			

TABLE 3.2 Guasti's analysis of contrastive use of verb types

Child	Age	1ps	2ps	3ps	1pl	2pl	3pl
Martina	1;9		vedi	vede			
Martina/Diana	1;11	metto	metti	mette			
Martina	1;11			fa			fanno
Diana	2;0			va			vanno

Guasti concludes that the low error rate and the fact that inflections are used with different verb types and that different verb types appear with multiple inflections “support the claim that the grammatical notion of subject-verb agreement and the ability to make a morphological analysis of verbal forms are in place at around the age of 1;11 to 2;1” (Guasti, 1994, p. 30).

In her analysis of clitic placement, Guasti did not take into account whether or not the correct atonic pronoun was selected. However, a study by Hyams and Schaeffer (2008) seems to suggest that the only errors children make with atonic pronominal forms are omissions. When clitic pronouns are not omitted, they are always correctly marked for gender and number. In Italian, direct object atonic pronouns must agree in gender and number with the noun they replace and, when they occur before a compound tense, they also trigger participle agreement, in the sense that the past participle must agree in gender and number with the direct object clitic. Agreement is optional with first and second person pronouns, but it is obligatory with third person clitics.

Hyams and Schaeffer (2008) used this structure to test the predictions of Wexler's (1998) UNIQUE CHECKING CONSTRAINT (UCC) about object agreement. The UCC is an economy restriction that operates in early grammar. It prohibits items from checking against more than one functional category. Hence, on this account, when more than one functional category needs checking, any functional projection can be dropped. In relation to the past participle agreement with a direct object clitic, Hyams and Schaeffer (2008) claim there are four logical possibilities that can be summarised as follows:

3.2 [–Cl +Agr]

[+Cl +Agr]

[+Cl –Agr]

[–Cl –Agr]

The authors point out that, owing to the arbitrary character that omissions have on the UCC account, these four possibilities should all be attested in children's speech data. They object that the omission of functional heads is not arbitrary as predicted by Wexler's UCC, but sensitive to the semantic content of categories, and put forward an alternative account, which they label *Targeted Omission Hypothesis*. Under this account, the direct object clitic can either be instantiated, in which case it triggers both participle agreement and clitic realisation, or not, in which case neither participle agreement nor clitic realisation take place. They tested this prediction against elicited production of 35 monolingual Italian children between the ages of 2;1 and 5;11. Children were presented with a scenario and a non-matching description by a puppet, which they were asked to correct. The researchers found that among the two-year-olds, 44% of utterances were adult like, with overt clitic and

agreeing participle; 44% of the non-adult-like utterances involved the omission of both the clitic and the participle agreement. Only 11% of target deviations involved clitic omission and the use of an agreeing past participle form. There were no utterances containing a clitic pronoun and a non-agreeing participle. Among the three-year-olds, 98% of the utterances were adult like. The only target deviation consisted of clitic omission and agreeing participle (1%). Among four- and five-year-olds, all utterances were adult like.

3.3 Generativist-nativist BFLA studies

Studies of BFLA children acquiring language pairs characterised by a different level of morphological richness suggest that productivity is an early achievement, particularly in the morphologically more complex language. The acquisition of inflectional morphology by BFLA children was investigated by a series of studies carried out in the 1990s with different purposes. Some had the purpose of evaluating which, between Maturation and Continuity perspectives, best explain the development of functional categories (Paradis & Genesee, 1997). Others aimed at establishing if the simultaneous acquisition of two languages by the same child takes place autonomously or interdependently (Paradis & Genesee, 1996; Gawlitzek-Maiwlad & Tracy, 1996; Sinka & Schelletter, 1998).

3.3.1 French and English

Paradis and Genesee (1996) analysed the spontaneous speech samples of three French-English BFLA children, William, Gene and Olivier, aged between 2;0 and 3;0. They focused on the development of finiteness, negation and the use of subject pronouns with finite and non-finite verb forms, at three different time intervals. With respect to each of these phenomena, they found that the three bilingual children developed the two languages as two independent systems and did not borrow syntactic structures from one language into the other. They also observed that, at each interval, the percentage of finite utterances was significantly higher in French than in English. At 2;0 years of age, the children used finite verb forms in 51% of French utterances and only 10% of English utterances. At 2;8 years of age, they used finite verb forms in 24% of English utterances and 74% of French utterances. At 3;1 years of age, the mean percentage of finite utterances in French was 85%, while in English it was 44%. The authors conclude that inflected verb forms emerge

earlier in French than in English, and argue that the nature of the input affects the course of development.

In a follow up study, Paradis and Genesee (1997) analysed naturalistic data from two other French-English BFLA children, Yann and Mathieu, who were at an earlier stage of grammatical development. The researchers used word-based MLU values as a measure of grammatical development and denominated this earlier stage, in which the MLU values range between 1.10 and 2.0, *First Syntax*. The recording sessions for Yann took place between 1;11 and 3;0 and for Mathieu between 1;9 and 2;11. The researchers investigated the frequency of finite utterances, productivity of Inflection, the placement of negation and the frequency of verb-less utterances. With regard to the distinction between finite and non-finite utterances, the authors claim that “the impoverished inflectional system for English verbs made classification more complex than in French” (Paradis and Genesee, 1997, p.105). In their study, English utterances were classified as finite if they contained any of the following verb forms: a copula, an auxiliary, a modal, the periphrastic *do*, the past verb suffix or the third person singular suffix. Both children produced more finite utterances in French than in English. Overall⁹, Yann used finite verb forms in 62% of French utterances but in none of his English utterances; Mathieu in 51% of French utterances and in 10% of English utterances.

The researchers point out that English and French do not only differ in the mean percentage of finite verb use, but also in the developmental point at which Inflection emerges in the children’s speech. The first examples of French utterances containing finite verbs appeared in Yann’s corpus at 1;11 (French MLU = 1.40) and Mathieu’s corpus at 1;11 (French MLU = 1.49). In contrast, finite verb forms, in English, appeared in Mathieu’s corpus at 2;11 (English MLU = 1.96); in Yann’s corpus there were no instances. Conversely, they found no discrepancies in the emergence and in the frequency of use of determiners between the children’s two languages. However, their analytical criteria can partially account for the asymmetry that they found in the occurrences of finite utterances between the children’s two languages. They excluded from the count of English finite utterances all the clauses containing present indicative first- and second-person combinations as well as affirmative imperatives. The authors argue that first- and second-

⁹ A break-down of finite and non-finite utterances on a session-by-session basis is not provided.

person present-indicative and imperative verb forms are ambiguous because they are not morphologically marked; thus, they are identical to bare forms. For this reason, the authors included such utterances in a third category that they labelled as ambiguous utterances. At the same time, they did not eliminate the same verb forms from the children's respective French corpora. If Matthew's ambiguous utterances are included in the count of the finite utterances, the percentage for finite verb use increases from 10% to 54%. With this adjustment, the percentage of finite utterances is higher in English than in French. The absence of finite utterances in Yann's English corpus is very likely an artefact of this same criterion. What it probably means is that, in his corpus, there are no utterances unambiguously classifiable as finite; therefore, the ones that were deemed ambiguous were also classified as non-finite. Indeed, the authors make the point that it is only when unambiguously finite utterances appear that it is possible to argue that also the ambiguous clauses should be considered finite (Paradis & Genesee, 1997 p. 106). In addition, it is worth noting that Yann's English corpus only contains 35 utterances in total, whilst his French corpus contains 188 utterances.

Their analysis of productivity is also questionable. It focused on the appearance of inflectional items such as auxiliaries, do-insertion, modals, and subject clitics. The authors equally claim that their results provide evidence of "the earlier establishment of Infl in the children's French grammars" (Paradis & Genesee, 1997, p. 107). However, not many details of the productivity analysis are given to support this claim. For example, the authors state that, in French, 73% and 77% of all verb types used during the sampling period appear in their finite form for Matthew and Yann respectively. At the same time, they do not specify whether or not these verb types also appear with different inflections. As mentioned above, with respect to lexical verbs, in French, all person-number combinations were included in the count of finite forms, while, in English, only third person singular forms were considered finite. Moreover, in Yann's case, where third person singular forms were not produced, all the remaining person-number combination that he supplied were classified as non-finite. Therefore, their conclusions about the emergence of Inflection in the two languages appear to be biased by the lack of a measure of variety and the adoption of an analytical criterion leading to the exclusion of first- and second-person present-tense forms in English but not in French.

It is also worth noticing that, although French verbs bear an inflectional suffix for each of the person-number combinations of the present tense, they sound just like uninflected stems in the singular. Of course verbs used in the first-, the second- and the third-person singular can be unambiguously classified as finite, because they appear with clitic pronouns and because the actual bare form never appears in the input as, unlike in English, the infinitive bears an inflectional ending in French. At the same time, the reason why the verb forms in question need to appear with clitics is that, otherwise, they would be indistinguishable from each other. Indeed, it has been observed that, in French, clitics function as agreement markers (e.g., Pierce, 1992). The same line of reasoning can also be developed for present indicative English forms. As a result, first- and second-person forms of the present tense can unambiguously be classified as finite in English too, when they appear with personal pronouns.

3.3.2 German-English and English-Latvian

Gawlitze-Maiwald and Tracy (1996) investigated the morpho-syntactic development of a German-English bilingual child, Hannah, between 2;1 and 4;3 years of age. In their study, they focused on the acquisition of main-clause properties in English and German. They performed a comparative analysis of German and English utterances and claimed that, between age 2;4 and 2;9, Hannah systematically borrowed *wh* elements (*wo's meine cake?*), the auxiliary *haben* (*Sie haben gone away; Ich hab gemade you much better*) and the modal verb *kann* (*Kannst du move a bit?*) from German into her English utterances¹⁰. German inflectional suffixes were also added to English lexical verbs as shown in the following example (1996, p. 911):

(2;8.0)

3.3 *MOT: Esther always goes barefoot, doesn't she?

*HAN: Aber ich sag: Esther, du cutst dein toe!

They observe that Hannah omitted auxiliaries in English when repeating adults' sentences, in which an auxiliary had been provided; or when prompted to reformulate in English a German utterance, in which an auxiliary had just been used (1996, p. 914).

¹⁰ Examples from Gawlitze-Maiwald & Tracy (1996, p. 915)

(2;6.15)

3.4 *FAT: I've got you

*HAN: I got you

(2;4.8)

3.5 *HAN: Ich hab geclimbed up

*MOT: what?

*HAN: I climbed up

At 2;9 auxiliaries and modals began to appear in English too. The auxiliary use of *do* became productive at the age of 3;0.15. The researchers claim that productivity of the periphrastic *do* can be assumed on the basis of instances of overgeneralisation errors in which the auxiliary does not serve an emphatic purpose as in the following examples:

(3;0.15)

3.6 *HAN: who does want to do the spotty one?

(3;0.15)

3.7 *HAN: this one does have to come as well.

It was at that stage that Hannah stopped borrowing functional items from German. In order to account for this seemingly developmental asynchrony in the achievement of syntactic milestones, the authors claim that Hannah engaged in an instance of bilingual bootstrapping. They argue that Hannah made use of her innate abstract syntactic knowledge about sentence formation¹¹ to fill a temporary gap in English. Where monolingual children resort to the use of placeholders, bilinguals can make use of phonological shapes that they have learned in their other language. The researchers conclude that “cross-linguistic borrowing helps the child to fill temporary gaps” (1996, p. 921).

Sinka and Schelletter (1998) investigated the morpho-syntactic development of a German-English child, Sonja, and a Latvian-English child, Maija, who were recorded from 2;0 to 2;6 and 1;3 to 1;11 respectively. They focused on Sonja's acquisition of word order and subject-verb agreement and Maija's development of verb and noun morphology. Contrary to what was observed by Gawlitzek-Maiwald and Tracy (1996), they found a lack of mixed morphology across the children's two languages, but at the same time they

¹¹ Knowledge that, in all languages, another head needs to be projected beyond VP, which takes VP as its complement and opens up a specifier position.

excluded mixed utterances from the analysis. Sonja's placement of verbs in German and English showed language-specific patterns from the early stages of the study. For example, when an adverb occurred at the beginning of an utterance, she placed the verb in second position in German and in third position in English (1998, p. 314):

(2;6)

3.8 *SON: da kann man nicht anschnallen. there can one not strap-in.

(2;6)

3.9 *SON: and then there's Ciara.

As regards the subject-verb agreement system, they found that Sonja started to supply correct verb endings in German at a time when, in English, lexical verbs only occurred in the stem/infinitive form or as stem+ing forms without the auxiliary. Working within the principles-and-parameters framework, the researchers assumed that children have the functional category of Agreement if they display use of person endings in obligatory contexts. From 1;3 to 1;6, at the one- and two-word stage, there was some evidence of productive use of the plural marker -s in Maija's English samples, but there was no use of pronouns in English and, consequently, no evidence of the use of case morphology. During the same developmental period, Maija exhibited productive use of agreement and case morphology in her Latvian utterances. At 1;3, when she was still at the one-word stage, there was evidence of contrastive use of demonstrative pronouns. In the subsequent months, between 1;4 and 1;6, several noun types were used contrastively, i.e., marked for case, gender and number as in the following example (1998, p. 319):

3.10 Lija (feminine noun) = Maija's sister

Lija	(nominative singular)	(1;5.17)
Lijas	(genitive singular)	(1;6.1)
Lijinas	(genitive diminutive singular)	(1;4.6)
Lijai	(dative singular)	(1;6.1)
Lijin!	(vocative diminutive singular)	(1;4.6)

The authors conclude that the development of each pair of languages reveals, a "lead-lag pattern" (1998, p. 304), by which German and Latvian, both richly inflected languages, are in advance of English with respect to the acquisition of functional categories.

3.4 A cross-linguistic study of Italian and English

Similar results emerge from a cross-linguistic study aimed at identifying similarities and differences between Italian and English children's speech production, in the early stages of lexical and grammatical development (Caselli, Casadio & Bates, 1999). Data were collected by administering the *MacArthur Communicative Development Inventory* (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick & Reilly, 1991) and the *Primo Vocabolario del Bambino*, its Italian equivalent (Caselli & Casadio, 1995). The parents of 1001 American-English children and 386 Italian children, aged between 1;6 and 2;6, participated in the study. The authors compared the three longest utterances of Italian and American-English children, matched by age, sex and vocabulary size and found that they exhibited different rates of bound morphemes productivity, with a significant advantage on the Italian children's side (Caselli, Casadio & Bates, 1999). For example, the longest utterances of an Italian boy at 2;0, with 201 words, were (1999, p. 103):

- | | | |
|------|--|--|
| 3.11 | scott <u>a</u> pappa, non vo <u>jo</u> | food is hot, I don't want |
| 3.12 | mett <u>i</u> giacca, esc <u>o</u> io e Dede | put on jacket, Dede and I are going out |
| 3.13 | lav <u>o</u> man <u>i</u> sporche, apri <u>i</u> acqua | I am washing my dirty hands, turn on the water |

The researchers point out that, although the child omits articles and clitic pronouns in obligatory contexts, these three sentences display use of person-number marking on verbs and gender-number marking on nouns and adjectives. By contrast, the three longest sentences reported for the English counterpart, a boy of 2;0 with 203 words, do not contain any signs of bound morphology:

- 3.14 Mommy, go outside.
- 3.15 Mommy, juice please.
- 3.16 Shower wet.

Such asynchrony has been confirmed by another cross-linguistic study conducted with the aim of establishing which factor, between productive vocabulary size and age, is the best predictor of the length and grammatical complexity of children's utterances (Devescovi, Caselli, Marchione, Pasqualetti, Reilly & Bates, 2005). The authors claim that, in Italian, morphological complexity surfaces from the beginning of language development; while, in English, it increases only after children's productive vocabulary reaches 400 words.

3.5 Constructivist studies

Researchers adhering to constructivist accounts of language development have objected to the idea that very young children may have adult-like command of inflectional morphology (Pizzuto & Caselli, 1992, 1993, 1994; Rubino & Pine, 1998; Gathercole, Sebastián & Soto, 1999, 2000, 2002; Serratrice 2001). The argument put forward is that early morphological productivity is a mere artefact of the non-stringent criteria employed to analyse children's spontaneous data (e.g., Pizzuto & Caselli, 1992). It is suggested that children acquiring morphologically rich languages have been credited with productive use of inflectional morphology simply on account of their error-less speech production. When the analytical tools of children's spontaneous speech samples are adequately tightened, the alleged early morphological productivity of children acquiring languages with large arrays of inflections would disappear.

Pizzuto and Caselli (1992) claim that a rigorous investigation of productive use of grammatical morphology in a richly inflected language like Italian should be based on the same criteria proposed by Brown (1973) and Cadzen (1968) for the study of grammatical development in first language learners of English. Following Brown, they consider that mastery of a given inflectional morpheme is achieved if the morpheme in question appears in at least 90% of contexts in which it is required. Following Cadzen, they define point of acquisition as the first of three consecutive speech samples in which a given inflectional morpheme is used in at least 90% of obligatory contexts. In addition, they claim that children's performance cannot be adequately evaluated in cases where only one or two obligatory contexts arise. Therefore, following De Villiers and De Villiers (1973), the researchers impose a further restriction: that with respect to each specific morpheme, a given speech sample can be considered for analysis only if it contains at least five obligatory contexts of use. They also note that one serious methodological problem with the assessment of the productivity of verb inflections in the early stages of speech production is that, regardless of the number of verb tokens produced, children tend to use certain inflectional suffixes exclusively with one specific verb type. Hence, they argue that in order to disentangle productive use of verb inflections from error-free production, some "measure of variety" (1992, p. 517) should also be taken into account.

In order to have some measure of variety of instantiation, we noted the number of different verbs with which each person inflection was used. As a general rule, we estimated that any given person inflection was beginning to be used productively by each child when it was used with at least two different verbs (e.g. when in the same sample the child produced the 2nd-person inflection not only with *api* [for *apri* ‘open-2SG] but also with *edi* for *vedi* ‘see-2SG’).

(Pizzuto & Caselli, 1992, p. 517)

They conducted a longitudinal study of the acquisition of Italian verbs, articles and pronouns by three children, Claudia, Francesco and Marco, who were audio-taped between the ages of 1;3-2;9, 1;4-3;9 and 1;5-3;0 respectively. The three children were recorded in their homes, mostly in dyadic interaction with their mothers. Claudia and Francesco’s data were collected at fortnightly intervals, while Marco’s play sessions took place approximately once a month. Their results show that agreement errors in the use of articles and verbs were very rare, ranging between 3% and 4% for articles and 1% and 4% for verbs. They found that the three children displayed similar patterns with respect to the appearance of different verb forms: plural forms appeared later than singular forms; simple-tense forms appeared earlier than compound-tense forms; the different inflections encoding first, second and third person did not appear simultaneously but at time intervals lasting from one to several months. The authors also point out that an impressive number of verb inflections appeared from the earliest ages in the children’s overall production (a total of 25, 23 and 17 for Claudia, Francesca and Marco, respectively). For example, between ages 1;4 and 1;9, all three children used present-tense first-, second- and third-person-singular forms. Claudia and Francesco also used the present-tense, third-person-singular copula form. The authors argue that: “if one examined a fragment of the corpora, without imposing acquisition criteria, it would be tempting to conclude that the Italian system of inflectional morphology is mastered very early” (1992, p. 525). However, they point out how a deeper analysis reveals that none of the major inflectional paradigms investigated was fully mastered by age 3;0. In all three children’s samples, only some singular, present-tense inflections met their acquisition criteria. In Claudia and Francesco’s data, these included the first and third person of the present indicative, the second person of the present indicative/imperative and the third person copula. In Marco’s samples, only the third person

of the present indicative was acquired by the end of the study. Finally, mastery of these verb forms was not achieved instantaneously, but a time interval ranging from one month to twelve months elapsed between first appearance and acquisition. Similar patterns were found in relation to first appearance and acquisition of pronouns and articles. Since the three children only achieved mastery of some singular inflectional forms and because a time lapse of several months occurred between first appearance of a particular inflection and the point at which it met their acquisition criteria, the authors conclude that agreement is not an early acquisition in Italian.

Gathercole, Sebastián and Soto (2002) present data on the acquisition of person, tense and number by three monolingual Spanish children, Maria, Juan and Miguel, who were videotaped and audiotaped, from ages 1;3.6 to 2;6.16, 1;8.5 to 2;1.13 and 1;6.7 to 2;2.1 respectively. The children were recorded in naturalistic settings for half an hour at monthly intervals. The researchers followed Pizzuto and Caselli's (1992) criteria with respect to productive use of inflections and contrastive use of verb types. They also established a further measure of productivity: a given tense, person or number was considered productive only if the child's speech contained at least two different persons, two different tenses and two different numbers. Their reasoning behind this measure is that in Spanish, each (finite) verb form encodes person, number and tense, hence, if only one person-number-tense combination is productive, i.e., appears with at least two verb types, it cannot be ruled out that that particular form is some sort of "default form" (Gathercole *et al.*, 2002, p. 688). They found that Juan only used the first person singular and the third person singular of the present tense. Hence, he had no number or tense contrast by the end of the sampling period. In Maria's speech, the first type of contrast that became productive was a tense contrast, because she used the third person singular in the present indicative, the imperfect and the present perfect. Miguel acquired person contrast first, with the use of the first person singular and the first person plural in the present indicative. Then, he also acquired contrast of tense, with the use of the third person singular and the third person plural in both the present indicative and the present perfect. The authors claim that their results suggest that the three children exhibited individual differences in the development of person, number and tense.

Rubino and Pine (1998) investigated the acquisition of the subject-verb agreement system in one child acquiring Brazilian Portuguese. The child was recorded once a week, for a period of two months from 3;2.7 to 3;4.8 in his home, in spontaneous interaction with his mother or another member of his family. Their analysis shows a discrepancy in the production of correct singular and plural verb inflections. The researchers point out that the overall error rate is as low as 3%, but that when one takes into account the frequency with which different forms are produced and the target deviations concerning each one of such forms, the picture changes considerably. Firstly, the sheer number of utterances containing plural verb forms is very small, in comparison with the number of utterances containing singular verb forms. Out of a total of 1464 utterances 1414 utterances show singular inflections and 50 plural inflections. Secondly, the rate of agreement errors in utterances containing plural verb forms is 28%, whereas the error rate in utterances containing singular inflections is 2.2%. Furthermore, the researchers identify a considerable degree of variation among the error rate associated with each person-number combination. When the person/number variables are also considered, it appears that most errors concern the first person singular, the first person plural-*a gente* and the third person plural, whose error rates are 8.4%, 23.5 and 43.5% respectively. The second person plural never appears in the speech samples and no target deviations are produced with respect to the second person singular and the first person plural-*nos*. The authors also point out that agreement errors with the first person singular tend to occur with specific verb types: out of the 25 instances of deviations seven were produced with the verb *querer* (*to want*) and five with the verb *ir* (*to go*), which were often produced by the adult speaker in questions and imperative utterances addressed to the child.

Third person plural forms only emerged in the fifth session, when the child was 3;3.4. Target deviations consist of the use of a third person singular form with a third person plural subject. The authors point out that, from the point at which the child begins to produce third person plural inflections until the end of the study, the error rate for the person-number combination in question is 25%. Thus, even after third person plural forms appear in the child's speech, the error rate associated with them only gradually approximates to the error rate associated with other person-number combinations over the same developmental period. They claim that this finding is not congruent with the view that

the child has innate knowledge of subject-verb agreement, but fails to use it because he has yet to learn the relevant plural verb inflections. Additionally, seven out of twelve utterances exhibiting correct subject-verb agreement for the third person plural result from the production of two specific subject-verb strings: *esses são* (*these are*) and *eles vão* (*they are going*). For this reason, they could be accounted for by the learning of two unanalysed subject-verb strings. With regard to the first person plural-*nos*, except for one instance, all the utterances contain the verb form *vamos* (*to go – 1pl*) and occur within the syntactic frame *vamos X* (*let's X*). They argue that this type of finding has clear theoretical implications, because it clearly shows that the child has not yet performed the morphological analysis of segmenting verbs into stem + inflection. They claim that inflections are linked, in his mental lexicon, to specific verb forms.

[These errors] seem to be intrinsically related to the piecemeal nature of the child's verb morphological development, reflecting a process whereby verb inflections are initially produced by the child as part of specific lexical items, and only later reanalysed and organised into a more general verb morphological system. Certainly, the finding that 12 out of 25 of this child's 1 SG agreement errors (i.e., 48%) are related to two particular verb forms which occur with high frequency in the mother's speech suggests that the initial lexical specificity of particular verb inflections does not disappear abruptly, but only gradually gives way to the flexibility which characterises the adult verb morphological system.

(Rubino & Pine, 1998, p. 46)

Following Pizzuto and Caselli's productivity criteria, Serratrice (2001) investigated the acquisition of the subject-verb agreement system by an Italian-English BFLA child, Carlo, born in Scotland to an American father and an Italian mother. Naturalistic speech samples were collected for both languages every second week for a period of 15 months, from when the child was 1;10. In her analysis, she distinguished between copula, auxiliaries and lexical verbs. With respect to copula *be*, she found that only two person-number combinations were used, the third person singular and the third person plural, and that Carlo provided the required copula form in 92% of third person plural obligatory contexts, but only in 43% of singular contexts. A discrepancy that she argues can be

accounted for by the fact that third person plural tokens only appeared in Carlo's speech six months later than singular forms, at a time when he had begun to acquire knowledge of the obligatory nature of the copula. In addition, the copula only appeared in lexically specific constructions, in which the subject was invariably represented by *that*, *it* or *they* and the predicate by an adjective. As for the auxiliary *to be*, the author points out that Carlo's knowledge was limited to the progressive construction, which was mostly used in third person contexts with either *do* or *go* in the *-ing* form. In relation to lexical verbs, she only considered present indicative third person singular forms, because they are the only ones that bear an inflectional suffix. However, forms with the periphrastic *does* were also included. Only two verb types, *come* and *go*, were correctly inflected and bare forms were produced in 33 out of 43 contexts.

Serratrice concludes that, by the age of 3;1.25, the BFLA child in her study had no knowledge of the English subject-verb agreement system. In Italian, Carlo's use of the copula was considerable by 2;1.23, but a certain degree of lexical specificity was evidenced in the use of the existential construction *c'è/ci sono*. In seven cases, third person singular forms were used in third person plural contexts. However, as the author highlights, the overall error rate was still very low (1.7%). Equally low were the error rates of present indicative inflections on lexical verbs, ranging from 10% for the third person plural to 0% for the first person plural. However, the author points out that, until the child was 2;2 years of age, there was not more than one verb form per verb type per session. The emergence of new grammatical contrasts in the child's speech proceeded slowly throughout the recording period, and a more accurate inspection of the distribution of different inflections across verb types reveals that only 17 out of a total of 82 verb types, (some of which, she argues, are highly irregular), occurred with four or more different inflectional suffixes across the 20 Italian files. The remaining 65 verb types appeared with only one or two inflections. She concludes that the child's almost errorless production of Italian inflected verb forms can be attributed to the fact that the number of different person-number combinations is limited and the use of verb forms is tied to lexically specific constructions, rather than to adult-like mastery in the use of inflections.

It is worth noting that, in studies like Gathercole *et al.*'s (2002) and Rubino and Pine's (1998), no distinction is made between bound morphemes and function words (i.e.,

copula and auxiliaries) and acquisition of person-number combinations is investigated across different tenses' paradigms. These circumstances can account for Gathercole *et al.*'s conclusion that the three Spanish children do not exhibit across-the-board acquisition for any person-number combination and the high error rates that Rubino and Pine report in their study. Spanish and Brazilian Portuguese are richly inflected languages and inflections corresponding to each person-number combination are numerous (over 40 according to Ambridge and Lieven, 2011). In Pizzuto and Caselli's (1992) study, the acquisition of different paradigms is investigated separately and indeed the error rate that the authors report is much lower. Their conclusion that agreement is not an early achievement for Italian acquiring children is based on the observation that, even within the major paradigms, children do not meet their acquisition criteria for all the different inflections, and when acquisition does take place, this happens quite slowly. For example, the different inflections for first, second and third person do not appear simultaneously, but at time intervals lasting from one to several months. Serratrice (2001) points out that only 21% of the verb types that appear in her Italian data are used with four or more different inflections. As pointed out by Hyams (1992), the acquisition of inflections is a form of lexical learning, because inflectional affixes are lexical items and as such they must be learned individually. Hence, the learning of an inflectional paradigm is not "triggered in an all-or-none fashion" (Pizzuto & Caselli, 1992, p. 506), but takes place gradually. In Hyams' words:

Everyone agrees that children must learn individual lexical items, whether they are free or bound, and that this learning depends on a number of factors, including semantic, syntactic and phonological ones. Thus, the learning of an inflectional paradigm, like learning within other grammatical categories, e.g. prepositions, articles, pronouns, etc. is likely to be gradual in the sense that each form within the category will be acquired individually. We would not expect children to acquire all the inflectional affixes at once any more than we would expect them to acquire all the prepositions or pronouns of a language at once. [...] In fact, I would add that such a development would be close to miraculous.

(Hyams, 1992, p. 697)

3.6 Finiteness studies

Finiteness deviations have been the focus of considerable generativist-nativist theoretical explanatory efforts since the early 1990s and, more recently, have also received attention from constructivist researchers. This type of target deviation is common in the speech of young children but, cross-linguistically, it appears to be considerably more common in the speech of children acquiring languages that lack an overt subject-verb agreement system and, therefore, do not allow for subject dropping (e.g., English: Wexler, 1994; German: Poeppel & Wexler, 1993; Swedish: Platzack, 1990, 1992; Dutch: Haegeman, 1995; Icelandic: Thordardottir & Ellis Weismer, 1998 and French: Pierce, 1992). At the same time, within each language, this type of deviation appears to be more frequent in subject-less utterances. Finiteness errors involve the use of non-finite forms in contexts where a finite form is required; thus, they also include participle and gerund errors. In the literature, finiteness errors are often referred to as Optional Infinitive errors (OIs) (term due to Wexler, 1994) or Root Infinitives errors (RIs) (term due to Rizzi, 1994). Freudenthal *et al.* (2009) use the term Root Participle to refer to finiteness deviations consisting of past-participle forms lacking the auxiliary.

3.6.1 Generativist-nativist studies

As mentioned above, several different theories have been proposed by generativist-nativist researchers to account for the occurrence of non-finite forms in finite contexts in child speech. Some authors (e.g., Guilfoyle & Noonan, 1994, Radford 1996) hold that finiteness deviations result from the lack of functional categories such as Agreement and Tense in children's early grammars. Under this theory, functional categories develop through neurological maturation between the ages of 2;0 and 2;6 and early grammars exclusively contain lexical categories. Hence, children's early utterances are characterised by very limited use of inflectional morphemes. In the underlying syntactic representation, these early utterances are Verb Phrases because Agreement and Tense are functional categories and functional categories cannot be projected. This theory is strongly English-centred as the claim that inflectional projections cannot be instantiated is not congruent with the presence of an infinitival morpheme in other languages (Hoekstra & Hyams, 1998) and the fact that, in the same developmental period, children acquiring Italian, for example, mostly produce

verb forms in which agreement and tense are correctly assigned (Guasti, 1994).

Another account is Rizzi's (1994) truncation theory. It holds that, at a very young age, children are able to project a full Complementizer Phrase, but they optionally truncate at the Verb Phrase level, because they do not know that it is obligatory to project a full clausal structure. In other words, children between 2;0 and 3;0 feel free to omit some functional elements. Similarly, Wexler (1998) proposes that children between 1;10 to 2;6 go through an optional infinitive stage, during which they are able to produce utterances in which verbs are accurately inflected but, at the same time, optionally produce utterances in which verbs lack tense and agreement marking. Under his account, this happens because children are subject to the Unique Checking Constraint (Wexler, 1998), which prevents items from being checked against both Tense and Agreement at the same time. When Agreement is checked but Tense is not, children produce non finite utterances, because the underlying system does not know which between the present- and the past-tense morpheme should be selected. In the opposite case scenario, although tense is checked, the correct tense morpheme cannot be added because the underlying system does not know which person-number combination to select.

One of the advantages of Wexler's theory is that it can account for the cross-linguistic variations that seem to characterise the optional infinitive stage. Wexler argues that, in pro-drop languages, the functional category of Agreement takes on the role of the subject, in the sense that it marks person and number on the verb and the subject can be left out. If person and number are already encoded in the verbal inflection, children acquiring null-subject languages do not produce root infinitives because they only need to check Tense. Another account that equally tries to explain the cross-linguistic differences in the root infinitive phenomenon is Legate and Yang's (2007) variational learning model. Under this theory, children simultaneously access several different grammars that compete probabilistically. Each grammar is characterised by a specific setting for each parameter. For example, all children have grammars where the tense parameter is set to +TNS and grammars where the tense parameter is set to -TNS. These grammars compete to analyse the linguistic evidence. Cross-linguistically, the greater the evidence for tense marked forms the quicker the acquisition of tense marking.

However, as pointed out by Hyams (2001), theories like Wexler's (1998) cannot account for the fact that, in languages other than English, root infinitives and correctly inflected forms do not occur in the same type of semantic contexts nor with verbs belonging to the same semantic classes. In languages like Italian, Dutch and German for example, root infinitives almost exclusively occur in modal contexts and with verbs describing events. Hoekstra and Hyams' (1998) account is designed to explain both the modal reference effect and the eventivity constraint (both terms due to Hoekstra and Hyams, 1998). The modal reference effect is the phenomenon by which most infinitival forms that children produce in finite contexts have a modal meaning, i.e., refer to events that the child wants to happen. The eventivity constraint is the phenomenon by which non-finite utterances that lend themselves to a modal interpretation virtually always contain eventive verbs. On the basis of the data analysed by Deen (1997) for English, Wijnen (1998) for Dutch, and Ingram and Thompson for German (1996), Hoekstra and Hyams argue that the modal reference effect does not operate in English. Deen analysed the distribution of finite and non-finite forms across eventive and stative verbs in the files of Adam and Eve (Brown, 1973) and found that only 13% of the root infinitives that appear in the two children's speech samples have a modal interpretation. Conversely, Wijnen (1998) found that 86% of the root infinitives produced by four Dutch children occurred in modal contexts. Similarly, Ingram and Thompson (1996) found that 79% of the root infinitives produced by German children carried a modal meaning.

Hoekstra and Hyams argue that this discrepancy can be accounted for by the differences in the aspectual meaning between the Dutch/German infinitive and the English infinitive. Dutch and German have morphologically marked infinitives, whilst the English infinitive is uninflected and can better be described as a bare form rather than a true infinitive. Although the infinitival affix does not encode tense, person or number, it still carries the aspectual feature [–realized], which is responsible for the modal interpretation of true infinitives. Referencing Giorgi and Pianesi (1997), the researchers point out that the English bare form has a [+perfective] feature, which “denotes not only the processual part of the event, but includes the completion of that event” (Hoekstra & Hyams, 1998, p. 105). They use the following utterances to illustrate this point:

*3.17 I see John cross the street

3.18 I saw John cross the street

3.19 I see John crossing the street.

Utterance (3.17) is ungrammatical while utterance (3.18) is grammatical because the [+perfective] feature is compatible with the past tense *saw*, but it is incompatible with the present tense *see*. In English, when the present tense is used in the main clause, the *-ing* form needs to be selected so that the processual meaning can be conveyed as in utterance (3.19). As it becomes evident from utterance (3.20), the Dutch infinitive does not carry a perfective feature, thus it can be used to refer to an on-going event.

3.20 Ik zie/zag Jan de straat oversteken.

I see/saw John cross the street.

Hoekstra and Hyams argue that other Germanic languages and the Romance languages, which all have morphologically marked infinitives, all behave like Dutch in this regard. They conclude that this [–realized] feature is the basis for the modal reading of root infinitives.

Children’s RI-utterances contrast with finite utterances precisely in this respect: while finite utterances describe actual states of affairs, RIs do not refer to actual eventualities, but to eventualities that are not realized, and are therefore interpreted as statements of desire with respect to these eventualities.

(Hoekstra and Hyams, 1998, p. 103)

Another point that they make is that root infinitives encoding the [–realized] aspectual value can also be found in adult language, where they are used “with an imperative or a counterfactual meaning” (Hoekstra & Hyams, 1998, p.103). The only difference between adult and child root infinitives resides in the much more restricted use that adults make of the infinitival morphology. This, they argue, is evident from the following example utterances (Hoekstra & Hyams, 1998, p.103):

3.21 *jussives*

Hier geen fietsen plaatsen!

Don’t put bicycles here!

3.22 *Mad Magazine sentences*

Jan met mijn zus trouwen?! Dat nooit.

John my sister marry? That never.

Adult jussives most closely resemble children's root infinitives because, just like children's root infinitives, they have a deontic reading, i.e., they refer to events that need to take place. The authors conclude that "the modal interpretation of children's RIs is determined by the inherent quality of infinitives as being marked [–realized]. And this is a feature of adult RIs as well." (Hoekstra & Hyams, 1998, p. 103).

TABLE 3.3 Hoekstra & Hyams' cross-linguistic analysis of the MRE and the EC

%	English	German	Dutch
RI with a modal meaning	13%	79%	86%
Eventive verbs featuring in RI errors	75%	84%	95%

The aspectual difference between the English bare form and the Dutch/German infinitive also accounts for the fact that, unlike in English, in German and Dutch, root infinitives predominantly occur in utterances containing verbs describing events. Hoekstra and Hyams point out that while Wijnen (1998) found that 95% of the 1883 root infinitive errors were eventive, Deen (1997) found that 75% of the 264 root infinitives errors occurred in utterances containing eventive verbs. Hoekstra and Hyams argue that this difference can be accounted for by the modal meaning carried by the German and the Dutch infinitive. When combined with eventive verbs, modals have a deontic reading; when combined with stative verbs, modals have an epistemic reading, i.e., they convey the message that the event is true. The researchers give the following examples to support their argument:

3.23 John must read this book.

3.24 John must be British.

In utterance (3.23), the modal has a deontic reading because it indicates that there is some obligation for John to read a given book. In utterance (3.24), the modal has an epistemic reading because it indicates that there is some sort of evidence which makes John's nationality identifiable as British. The authors point out that it has been shown in the literature that the epistemic modality is absent from the speech of children under the age of 3;0 (e.g., Shepherd 1981; Stephany, 1986). If stative verbs used in combination with modals have an epistemic meaning and young children cannot access this reading, stative verbs cannot appear in modal contexts in the speech of young children. Hence, in languages

where the root infinitive phenomenon stems from the modal meaning of the infinitival morpheme, statives do not occur as root infinitives. Conversely, in English this restriction does not operate because bare forms are not related to the modal meaning of the infinitival marker.

3.6.2 Constructivist studies

As mentioned in section 1.2, under constructivist accounts, compound finites are a very likely source of non-finite forms for two reasons. The first reason is the general assumption that children rote-learn chunks of language directly from the input; the second is the assumption that children show a recency effect (Freudenthal *et al.*, 2007). On the basis of these two assumptions, non-finite forms occurring in compound finite contexts can be accounted for by the fact that children omit tensed material from the beginning of input utterances at the rote-learning stage or at the production stage. Freudenthal *et al.* (2007) use a computational model of language learning to test this account: MOSAIC (model of syntax acquisition in children). MOSAIC is a distributional analyser that has no built-in syntactic knowledge, but it can apparently simulate child finiteness deviations, because it has an utterance-final bias in learning. Furthermore, it learns to produce increasingly longer utterances as a function of the amount of linguistic input that it receives. The initial utterances that it produces are short and only contain the utterance-final, non-finite forms that in compound finites follow the tensed auxiliary or modal. As it receives more and more linguistic input, utterances become progressively longer and start to include the tensed auxiliaries and modals. Thus, eventually, compound finites replace non-finite forms. In a paper published in 2009, Freudenthal, Pine and Gobet suggest that MOSAIC is capable of simulating the modal reference effect and the eventivity constraint as well as the way in which these two restrictions vary among English and Dutch and German. The authors claim that “if a child learns RIs from the input, she is likely to produce them in the type of context in which they are most frequently encountered” (Freudenthal *et al.*, 2009, p. 24). As the authors point out: in English, the types of compound finites that more frequently appear in the input contain the periphrastic *do* and are likely to be questions. In Dutch, where the periphrastic *do* is not used but main verbs themselves undergo inversion, the most frequent types of structures where an infinitive follows the main verb are modal constructions. This

circumstance is said to account for the fact that, in Dutch but not in English, root infinitives tend to have a modal interpretation. The eventivity constraint is seen as a consequence of the fact that modals almost exclusively combine with verbs describing events in the input, whilst stative tend to appear in the tensed form and often cannot suitably combine with modals. Thus this restriction operates in Dutch, in which root infinitives originate from compound finites, where tense is marked on a modal, but not in English, in which root infinitives originate from the omission of the dummy *do*.

3.7 Chapter summary

A range of generativist-nativist and constructivist studies focusing on the emergence of grammatical morphology have been reviewed above. In this section I provide a summary of how results from such studies inform the research questions and the methodology chosen in the present study focusing on the analytical criteria.

Hyams and Schaeffer's (2008) research on participle agreement in Italian suggests that monolingual children are able to produce target forms from age 2;0. Guasti's (1994) distributional analysis of finite verbs and infinitives and of the placement of clitic pronouns indicates that Italian children distinguish between finite forms and infinitives. On the basis of her quantitative analysis of the occurrence of present tense inflections in obligatory contexts, she claims that children exhibit knowledge of the verbal agreement system at around the age of 1;11 to 2;1. In generativist-nativist studies of BFLA children acquiring pairs of languages that differ in morphological richness, it has also been argued that inflectional forms emerge earlier in the morphologically more complex language than in the other (e.g., Paradis & Genesee, 1996, 1997; Gawlitzek-Maiwald & Tracy, 1996; Sinka & Schelletter, 1998). Furthermore, it has also been claimed that, even at the one-word stage, BFLA children acquiring highly inflected languages, such as Latvian and German, display contrastive use of case morphology on nouns and pronouns (Sinka & Schelletter, 1998). In contrast, researchers working within a constructivist framework have argued against children's early morphological productivity (Pizzuto & Caselli, 1992; Gathercole, Sebastián & Soto, 1999, 2000, 2002; Rubino & Pine, 1998; Serratrice, 1999, 2001). On the basis of the assumption that language acquisition is lexically driven and context based, they

claim that, in the early stages of acquisition, linguistic generalisations are not in place and children's adult-like performance simply reflects rote learning.

However, what all these different studies have in common is that they all rely on spontaneous speech samples from a small sample size. This circumstance is in all likelihood based on the cogent argument that a critical ingredient in speech production in general and in the use of inflectional items in particular is the child's own communicative intention. Experimental studies with large sample sizes often rely on imitation tasks from which such ingredient is missing. As mentioned in the introduction to the first chapter (see section 1.1), the debate about productive use of inflections in the early stages of combinatorial speech is a particularly inflamed one because what is at stake is the initial state of the child's mind. Indeed, adult-like use of inflections presupposes a considerable amount of linguistic knowledge and consequently it can hardly be justified on the basis of a framework that assumes that children build their mental grammars from scratch. The studies reviewed in this chapter also show that this debate is still open, which makes the question about early morphological productivity worth investigating.

One of the strongest constructivist criticisms of generativist-nativist studies has been that generativist researchers have often credited children with productive use of inflectional morphology on the basis of very lenient analytical criteria. This criticism stems from the fact that constructivist researchers do not assume the model of grammar used by generativist-nativist authors. For example, under generativist-nativist accounts, criteria such as clitic placement and distribution of finite forms and infinitives are valid instruments to investigate productivity. In this view, children's target placement of atonic pronouns and infinitives indicate that their early utterances are structure dependent and that they distinguish between different verb classes. Conversely, under constructivist accounts, correct clitic placement or the non-appearance of non-target sequences, such as preposition + finite verb or finite verb + finite verb, are interpreted as a result of the fact that children imitate the input. In other words, they could not possibly produce sequences that are never used in the ambient language. Therefore, in this study, I choose to use criteria of analysis that could be regarded as valid instruments of analysis under both accounts.

Brown's (1973) mastery criterion and **Cadzen's (1969) point of acquisition**, for example, have been used in constructivist and generativist studies of the acquisition of

inflectional morphology (e.g., Pizzuto & Caselli, 1992; Guasti, 1994). Similarly, Pizzuto and Caselli (1992) claim that children's ability to perform the morphological analysis of stem + inflection is signalled by the appearance of a given inflection with at least two verb types and of a verb type with at least two different inflections. **Pizzuto and Caselli's criteria** are not only used in subsequent constructivist studies (e.g., Serratrice, 2001; Gathercole, Sebastián & Soto, 1999, 2000, 2002; Rubino & Pine, 1998) but also, albeit in a less systematic fashion, in a generativist-nativist study (e.g., Guasti, 1994).

Another useful analytical tool is the **qualitative analysis of error forms** because, in children's early utterances, performance limitations, such as processing and phonological difficulties need to be taken into account. For example, I have pointed out that most of the agreement deviations by number made by the children in Guasti's study occur in subject-less utterances. Moreover, as suggested by Guasti (1994) and Lenoard *et al.* (2002), some phonological sequences can be challenging to reproduce correctly. A case in point is the Italian third person plural, where the stress falls on the third last syllable and thus it deviates from the most common stress pattern of Italian words, which are paroxytone. The qualitative analysis of error forms can also help understand whether or not deviations are random or have a systematic character. To the best of this author's knowledge, no other studies of morphological acquisition have systematically investigated error forms in spontaneously produced speech samples with the aim of evaluating productivity. This study will also investigate another type of error forms, namely **morphological overgeneralisations**. Depending on how early they occur in the bilingual setting, where exposure is reduced, overgeneralisations can offer insights into children's initial morphological knowledge.

The analysis of the nature of **finiteness deviations** also appears a valuable analytical tool. Under generativist-nativist accounts, the fact that children acquiring different languages go through a stage in which they omit finite forms suggests that optional infinitives represent "a genuine product of early grammar" (Guasti, 1994, p.10). Under constructivist accounts, finiteness deviations show that all children rely on the same lexically driven and context-based learning mechanism (e.g., Freudenthal *et al.*, 2007, 2009). In recent times, constructivist researchers (Freudenthal *et al.*, 2009) have put forward an alternative account of the modal reading and the eventive restriction that

Hoekstra and Hyams (1998) identified in children's root infinitive errors. The constructivist account is based on the hallmark assumption that children learn language from the input on a word-by-word basis. This account, which has been implemented with a computational model of learning, presupposes that words are learned by rote from the end of input utterances. Therefore, although it has the potential to explain some finiteness deviations, it appears less in congruence with findings like Guasti's (1994) and Hoekstra and Hyams' (1998) about clitic and preposition omissions. For example, children have been found to often omit the clitic pronoun that follows the infinitive while providing the finite verb form that precedes it. They occasionally omit the preposition *a (to)* that, in Italian, precedes infinitives while, at the same time, they produce with great accuracy the finite verb that comes before the preposition. In my analysis, I do not focus on the use of clitic and prepositions. I imagine that this type of omission could still be explained with the observation that salience also plays a role in the learning mechanism. At the same time, the arbitrary omission of utterance intermediate elements casts doubts on the assumption that finiteness errors stem from the omission of utterance initial material. It also shows that the learning mechanism simulated by MOSAIC has empirical implications that have not been very widely investigated. For example, if children's finiteness deviations originate from the omission of utterance-initial, inflection bearing material in rote learned chunks of language, the non-finite forms that appear in their outputs should match the ones that appear in input utterances.

As pointed out by Paradis and Genesee (1997), a serious methodological shortcoming in previous research on the emergence of inflectional morphology has been that, although the stage of grammatical development in children of the same age can vary considerably (De Villiers, 1992), researchers have often used age alone as a measure of syntactic development. In this study, MLU (Brown's, 1973) is considered together with age to describe children's stage of syntactic development. In this chapter, I have presented the studies that led me to formulate my research questions and to identify my analytical criteria. I further expand on these criteria in the next chapter, where I also present the claims and predictions that generativist-nativist and constructivist models make about the acquisition of inflectional morphology, the research questions and the method of data collection.

CHAPTER 4

Methodology

4.1 Introduction

In this chapter, I illustrate the research questions and the competing predictions that can be made about the acquisition of inflectional morphology on the basis of nativist-generativist and constructivist accounts. Second, an outline is given of the research design, in which the participants of the study, the recruitment criteria and the data collection procedures are introduced. Then, I present the methodology for the data analysis. Finally, I illustrate aspects of Italian and English inflectional morphology that were included in the analyses of the spontaneous and the elicited data.

4.2 Question 1

The first research question focuses on early morphological productivity in Italian and English and on whether morphological typology affects early productivity of inflections.

Are children productive with inflectional morphology in the early stages of combinatorial speech? If so, do they arrive at productive command of inflectional morphology earlier in richly inflected languages than in languages with sparse morphology?

4.2.1 Generativist-nativist accounts

Early morphological productivity is congruent with generativist-nativist accounts of language acquisition (e.g., Guasti, 1994; Wexler, 1998; Hoekstra & Hyams, 1998; Yang, 2002; Legate & Yang, 2007). Under generativist-nativist accounts, Inflection is an innate functional category that governs all the processes by which marking occurs and also includes morphemes: free morphemes, such as auxiliaries, and inflectional bound morphemes. This assumption considerably facilitates and speeds up the task of mastering inflectional processes faced by first language acquirers. Learning of inflections is gradual in the sense that inflectional paradigms are not expected to be acquired all at once, but each form within a paradigm is acquired individually (Hyams, 1992). However, with respect to the acquisition of each individual inflection, it is claimed that development is not as

gradual, because knowledge of Inflection belongs to children's genetic linguistic make-up. Children are born 'knowing' that words can be segmented in discrete component parts that can be reassembled to create new words and express new meanings. They are born 'knowing' that there is a grammatical category, called Inflection, which groups some of such component parts, the ones that are added to express grammatical meanings such as tense, gender, number etc. Hence, they know, from the very beginning, what Inflection is for and how to use it. All they have to do is to map the individual phonological forms that Inflection takes in the language they are acquiring onto this innate category. Therefore, very young children may very well be productive with inflectional morphology. As soon as they identify the phonological shapes that convey grammatical meanings in their input language(s), they are able to use them on the basis of that rule of inflectional morphology that is part of their innate linguistic endowment.

4.2.2. Constructivist accounts

Conversely, the idea of morphological productivity in the early stages of acquisition is strongly criticised in studies adhering to constructivist accounts of language acquisition (e.g., Pizzuto & Caselli, 1992; Rubino & Pine, 1998; Serratrice, 2001; Gathercole & Sebastián & Soto, 2002; Gathercole, 2007; Freudenthal *et al.*, 2009). The core of the argument is that young children's morphological productivity is only an illusion created by errorless speech production. But children's near perfect outputs are proposed as a mere consequence of their conservative linguistic behaviour, i.e., the fact that they simply imitate what they hear in the input. On constructivist accounts, the development not only of each inflectional paradigm is gradual, but also the acquisition of each individual inflectional form shows a much more gradual development than on nativist-generativist accounts. Indeed, the claim is that language learning is strictly context-based and lexically driven. Thus, in the early stages of acquisition, there is very little generalisation and learning of inflections, as any aspect of language learning, literally happens on an item-by-item basis. In this view, bound morphemes initially are linked to a specific lexical item, in the sense that the inflection that that lexical item bears does not necessarily appear with other stems also present in the child's lexicon. Inflection-bearing, free morphemes are embedded in lexically specific constructions. Additionally, because acquisition is a function of amount

of exposure, lexically specific use of inflections is necessarily protracted in the BFLA setting, in which exposure is divided between two languages.

4.2.3 The cross-linguistic asynchrony in morphological productivity

Studies of BFLA children acquiring language pairs that vary in morphological richness suggest that adult-like use of Inflection is achieved earlier in the morphologically richer language (Paradis & Genesee, 1997, 1997; Gawlitzek-Maiwald & Tracy, 1996; Sinka & Schelletter, 1998). This suggestion is echoed in a cross-linguistic study of Italian and English children, aimed at identifying similarities and differences in lexical and grammatical development between the two languages, in the early stages of acquisition (Caselli, Casadio & Bates, 1999). Although Italian and English are both classified as fusional languages, they differ considerably in the extent to which they make use of Inflection and with respect to the distinctions marked by it. As pointed out by Hyams (1988), in Italian, uninflected stems are not possible words, whereas, in English, bare stems are allowed. As a consequence of this structural feature of the two languages, in Italian, all verbs, nouns and adjectives must bear an inflectional ending, whilst, in English, verbs, nouns and adjectives can surface as bare stems. As for the kinds of distinctions encoded by inflectional morphology, in Italian, nouns and adjectives are always morphologically marked for gender and number, whereas, in English, gender is never signalled by inflectional suffixes on nouns and adjectives, and number is morphologically marked only on plural nouns. English verbal morphology is similarly sparse. With the exception of the present tense third person singular marker *-(e)s*, person and number are never signalled by inflectional morphology on lexical verbs, but agreement is expressed by subject pronouns. Tense is encoded by an inflectional ending only in the simple present, which is said, under generativist accounts, to take a phonologically null suffix, the $\emptyset$ marker, and the simple past, which takes the suffix *-ed*. All the other tenses are realised periphrastically. Conversely, in Italian, person and number are marked directly on the verb and tense is equally encoded by means of inflectional endings in all non-compound tenses.

Because of this typological variance, an in-depth exploration of the acquisition of inflectional morphology by Italian-English BFLA children can help shed light on whether inflectional morphology is acquired earlier in richly inflected languages than in languages

with sparse morphology. This issue is not specific to bilingual acquisition, but is of cross-linguistic character and concerns the role played by the nature of the input in the acquisition process. However, bilingual children have been identified as ideal testers for cross-linguistic research. They have been said to represent “the perfect matched-pair” (De Houwer, 1995), because, when two languages reside within the same learner, it is also possible to eliminate situational, cognitive and individual differences that it is difficult to control for in comparisons across individuals (Meisel, 1990; Sinka & Schelletter, 1998).

As mentioned above, generativist-nativist accounts predict early morphological productivity, because the production of all inflection-bearing forms is governed by the innate grammatical category of Inflection. As a result, children should show full productivity in all language types, provided of course that the category of Inflection surfaces in the target language and the child has learned the relevant inflectional item. This same prediction applies also to the 2L1 setting. As Inflection is an innate functional category, morphological generalisations are not strictly paced by amount of exposure. Constructivist accounts predict exactly the opposite. In this view, the differences in the speech of children acquiring different language types are only superficial because, in fact, all children rely on a common developmental strategy. Inflections surface as soon as children start to produce words in richly inflected languages, because they are so pervasively present in the target language. For example, in Italian-type languages, where children only hear inflected forms, inflections emerge at the one word stage, but this does not mean that inflectional items are used productively. Early correct performance reflects rote learning. When rote-learned forms are unavailable, because they have not been learned well or are rare in the input, children will make omission errors or use incorrectly inflected forms. The prediction is then that cross-linguistic differences in the acquisition of inflections are non-existent because inflections are acquired on the basis of the same underlying lexically driven and context-based acquisition strategy across all language types (e.g., Serratrice, 2001).

4.3 Question 2

The constructivist assumption that language acquisition is lexically driven and context based leads to the second research question investigated in this study.

(ii) *Do morphological overgeneralisations, intra- and cross-linguistic morphological borrowings occur in the early stages of combinatorial speech in the BFLA setting?*

Morphological overgeneralisations are common in the speech of young children. They result from the borrowing of the morphological process needed to inflect regular verbs or regular nouns into the conjugation of an irregular verb or into the declension of an irregular noun. In the research presented here, besides morphological overgeneralisations, two more specific types of morphological mixing are investigated: intra-linguistic borrowings and cross-linguistic borrowings.

Intra-linguistic morphological borrowings are defined in this study as the borrowing of a target deviant allomorph. Italian nouns, adjectives and verbs can be grouped in different classes depending on the vocalic pattern they follow. This means that the same grammatical meanings are in fact carried by more than one bound morpheme. For example, on nouns, the semantic properties of masculine and singular may be signalled by three different ending vowels, depending on the nominal class to which the specific noun belongs (i.e., *-o* as in *gatto*, *cat*, *-e* as in *miele*, *honey*, and *-a* as in *problema*, *problem*). Similarly, on verbs, the same person-number combination may be expressed by as many as three different endings, one for each of the three conjugations in which Italian verbs are distributed (e.g., *parlate*, *you speak*, *ridete*, *you laugh*, *dormite*, *you sleep*). Thus, intra-linguistic morphological mixing is defined in this study as the borrowing of a morpheme that shares the same semantic properties as the target, but that still deviates from it by a more abstract and purely grammatical feature, i.e., membership in a different noun or verb class (e.g., **vole he/she/it flies* where the target is *vola* because *volare*, *to fly*, belongs to the *-are* verb group).

Cross-linguistic morphological borrowings consist of the borrowing of a functionally equivalent inflection from the BLFA child's other language. Cross-linguistic borrowings occurred in the spontaneous data of a German-English BFLA child, Hannah (Gawlitzeck-Maiwald & Tracy, 1996), who produced mixed utterances like *cleanst du dein teeth?* (*are you cleaning your teeth?* 2;9), in which the German second person singular suffix *-st* is added to the English verb stem *clean*. As discussed in the second chapter, the general consensus among researchers of BFLA is that code-mixing can be considered as a sort of coping mechanism, the nature of which is similar to that of overgeneralisation errors

that monolingual children also often make. The crucial difference between bilingual and monolingual overgeneralisations is of course that bilingual children have at their disposal an array of linguistic means that spans across two languages. For this reason, they can make use of linguistic forms and devices that do not necessarily conform to the general structure of the language in which the overgeneralisation occurs (Genesee, 1989). As far as inflectional morphology is concerned, for example, monolingual children may overgeneralise and borrow the process of adding inflections to the stem needed to inflect regular verbs into the conjugation of an irregular verb (e.g., **taked* where the target is *took*). When this happens children produce non-target forms that can be regarded as the result of intra-linguistic mixing because they result from the borrowing of morphological processes and inflectional items that belong to the language in which the utterance is produced. Conversely, bilingual children may also borrow linguistic forms (e.g., Gawlitzek-Maiwald & Tracy, 1996), structures (e.g., Nicoladis, 2002) or devices (e.g., Döpke 2000; Müller & Hulk, 2001) from their other language. Therefore, the non-target forms they produce may result in cross-linguistic mixing or code-mixing.

4.3.1 *Generativist-nativist accounts*

Under generativist-nativist accounts, early morphological overgeneralisations show that children operate on the basis of a productive rule of the type stem + inflection. More precisely, children are said to apply a default rule before learning (or when failing to recall) the relevant, more specific irregular form (Pinker, 1995, 1999) or the relevant, more specific irregular rule (Yang, 2002). Either way, morphological overgeneralisations reveal that inflections have been detached from stems and are used to convey grammatical meanings, i.e., tense, number, etc. If overgeneralisations are a sign of morphological productivity and children are productive with inflectional morphology from the earliest two- and multi-word combinations, the prediction is that overgeneralisations at the level of inflectional morphology may also be observed early in development. Because Inflection is an innate functional category, i.e., it belongs to the child's *a priori* linguistic knowledge, amount of exposure is not as crucial and overgeneralisations can also be observed in the BFLA setting. For the same reasons the same prediction applies to intra- and cross-linguistic morphological borrowings.

4.3.2 Constructivist accounts

Under constructivist accounts, morphological overgeneralisations can be accounted for by the fact that irregular forms undergo the same analogical pattern that, at a certain stage in development, becomes responsible for the adult-like production of regular forms. As a result, under constructivist accounts, overgeneralisations take time because they only become possible after analogies have been drawn. This is even more so in the bilingual first language acquisition setting. The constructivist account predicts initial delays in BFL acquirers' linguistic development (Gathercole, 2007). If rate of acquisition is paced by amount of exposure, the fewer the contexts of exposure the longer the period of time needed for the achievement of that critical mass of linguistic information that allows children to abstract general patterns. In BFLA acquisition, exposure is necessarily reduced, because, being distributed across two languages, the contexts from which children collect and store strings of language are necessarily fewer. As a consequence, it predicts that overgeneralisations are not likely to occur early in development, particularly in the 2L1 setting, and particularly for aspects of language that, like inflections, are deeply embedded in the linguistic context.

Lexically driven and context-based acquisition also leads to the prediction that children do not produce inflected forms where stems bear target deviant allomorphs, i.e., suffixes with which they do not combine in the input. Moreover, in the same fashion as morphological overgeneralisations, intra-linguistic morphological borrowings signal that separation of stems from inflections has taken place. Hence, they are unlikely to occur in the early stages of combinatorial speech, especially in the BFLA setting.

Finally, context-based acquisition entails that bilingual children's output is mostly monolingual. Although some of the non-linguistic context for the two languages is likely to be shared, the linguistic context is mostly separate, because input in language X is embedded in language X structures and input in language Y is embedded in language Y structures (Gathercole, 2007). This separation of linguistic contexts holds especially for bound elements. Although bilingual children may be exposed to some sort of code-mixing (Goodz, 1989), this is unlikely to affect the internal structure of words, i.e., inflections of language X are fixed into language X stems and inflections of language Y are fixed into language Y stems. If acquisition is context based and if linguistic contexts are separate,

especially at the word level, cross-linguistic morphological borrowings should, in principle, be non-existent.

4.4 Question 3

The third research question focuses on a different type of target deviations. Target deviations, such as omission, finiteness and agreement errors are equally common in the speech of young children.

(iii) What is the nature of omission, finiteness and agreement errors?

From an empirical perspective, agreement errors occur when children use agreement-bearing forms that deviate from the target by features such as number, person and gender. Omission errors occur when children fail to provide copula forms or verbal predicates in obligatory contexts. Finiteness deviations occur when children produce utterances in which the main verb lacks tense and agreement marking. They include infinitival and bare forms used in finite contexts and past participles or gerunds used without the auxiliary.

4.4.1 Generativist-nativist accounts

On generativist-nativist accounts, Tense (TNS) and Agreement (AGR) are innate functional categories that rule the production of all tense and agreement-bearing material. Therefore, omission, agreement and finiteness deviations are principled. In this view, omission and agreement errors should be limited to the phonological shapes that children have not learnt yet. With respect to finiteness deviations, several theoretical explanations have been proposed. They make reference to deficits of child early grammars (e.g., Radford, 1996; Guilfoyle & Noonan, 1992), to the process by which morphological marking occurs (Rizzi, 1994; Wexler, 1998; Hoekstra & Hyams, 1998) and to parameter setting (Legate & Yang, 2007). Hoekstra and Hyams's (1998) account appears particularly appealing for the purposes of the present study for three reasons. First, it makes specific reference to typological differences between Italian and English. Second, it takes into consideration "distributional and interpretative properties of RIs" (Hoekstra & Hyams, 1998, p. 89) for which other theories fail to account. Third, both the modal reference effect and the eventivity constraint have recently also been explored by constructivist researchers (Freudenthal *et al.*, 2009). According to Hoekstra and Hyams (1998), the modal

interpretation is based on the aspectual meaning of the infinitival marker that is part of the grammatical representation of the root infinitives. In this view, root infinitives have a modal interpretation in Italian but not in English, because, unlike English bare forms, Italian infinitives are morphologically marked and the modal meaning stems from the aspectual meaning of the infinitival bound morpheme. The eventivity constraint is a consequence of the modal reference effect. When modals combine with stative verbs, they acquire an epistemic reading, which young children, under the age of three years, cannot access. Because of such limitations, children do not use statives in modal contexts. Conversely, English bare forms lack the infinitival morphology; thus, the modal reference effect and the eventivity constraint do not operate in English.

4.4.2 Constructivist accounts

In contrast, on constructivist accounts, omission, agreement and finiteness errors are said to occur when children use strings or schemas that have not been learned well or are rare in the input. Therefore, they provide evidence that language acquisition takes place on a word-by-word basis and, consequently, in the early stages of acquisition, inflections are not used in an adult-like fashion. This assumption leads to the prediction that target deviations are not principled and continue to occur even when the child has knowledge of the relevant tense- and/or agreement-bearing item. For example, with respect to omissions, children should omit different inflectional items at different rates (e.g., reliably providing the copula or the verbal predicate in third person singular contexts but failing to do so in third person plural contexts). As for agreement errors, they should provide correct marking for some person-number combinations but not for others (e.g., reliably providing the third person singular marker *-a* but not the third person plural marker *-ano*).

Finiteness deviations should display a marked lexical effect in the sense that they should affect verbs that, in the input, mostly occur in compound finites rather than verbs that occur in tensed forms; the modal reference effect should be more prevalent in those languages where infinitives mostly appear in modal contexts in the input (Freudenthal *et al.*, 2009). In this view, the eventivity constraint affects languages subject to the modal reference effect because it results from the circumstance that modals normally do not combine with verbs denoting a static state. In English input utterances, bare forms more

frequently appear in constructions that contain the periphrastic *do* than in constructions that contain modals. Therefore, bare forms should predominantly appear in contexts where tense is marked on the dummy *do* in the children's output. Consequently, the modal reference effect and the eventivity constraint are not very pervasive in English. Constructivist studies of root infinitives have not looked at Italian specifically. However, in Italian, main verbs are always tensed. Hence, Italian falls under the category of those languages in which the type of input structures that can give rise to root infinitives is mostly represented by compound finites, where tense is marked on a governing verb, which is often a modal. Thus, the constructivist account predicts that both the modal reference effect and the eventivity constraint are operative in Italian. In addition, if finiteness deviations stem from the omission of tensed material from the beginning of stored input utterances, a non-finite form occurring in a compound tense context should match the non-finite form that occurs in the same compound tense in an input utterance.

As it appears from this discussion, nativist-generativist accounts and constructivist accounts give different answers to the research questions that this study investigates. Even when the two accounts make the same prediction, as in the case of finiteness deviations in root contexts, they propose different explanations. Under both accounts, root infinitives are a function of properties of the input, but while, on generativist-nativist accounts, they stem from grammatical properties of the input, on constructivist accounts they are interpretable in terms of lexical effects. A rigorous, empirical exploration of the patterns of the acquisition and the use of inflections displayed by Italian-English BFLA children may help understand which between the generativist and the constructivist accounts better explain such patterns. Ultimately, this investigation feeds into the aim of the present study that is contributing to the on-going debate about contrasting models of language acquisition.

4.5 The participants

The participants of this study are two siblings, Amy and Ava, who were born one year, eleven months and seventeen days apart. Data were collected over a period of 24 months, but each child only participated in the study for a period of 12 months. Amy's data collection took place in the first year of the study and Ava's data were collected in the second year. Hence, at the time of the first play session, Amy was 2 years 10 months and

18 days old, while Ava was 2 years and 26 days old. They both were born in Dublin, where they live with their Italian mother and their Irish father, a native speaker of English. Amy and Ava have been exposed to Italian and English from birth, as their parents have embraced the one language one parent principle (Rojas, 1913) and always interact with them in their respective native languages. This circumstance qualifies their linguistic upbringing as an instance of bilingual first language acquisition (Meisel, 1989).

4.5.1 Recruitment criteria

The children were recruited through the placement of notices in social-network groups and forums that have included Italian as a target language. In addition, appeals were made to a Dublin-based non-profit association that offers activities for children with an interest in the Italian language. Before starting the recruitment process, I received approval from the Ethics Committee of the School of Linguistic, Speech and Communication Sciences, in Trinity College Dublin, to work with young children and their families. Parents were asked to read a *Participant Information Leaflet* and to sign a *Consent Form*, which clearly explained the aims of the Ph.D. study and what their involvement in the longitudinal data collection entailed (see Appendix I). In order to protect the identities of the children participating in the research and their families, pseudonyms are used at all times. The children participating in this study had to:

- Be born into a bilingual household, where one parent was a native speaker of Italian and the other parent was a native speaker of English.
- Be living in Ireland since birth.
- Have received consistent exposure to both Italian and English from birth.
- Be aged between 2;0-2;10 at the time of the first play session.
- Be at an early stage of grammatical development, but able to produce at least two-word utterances in both languages.

As this study focuses on the emergence of inflectional morphology, the children had to be at a point in development from which it was possible to analyse morpho-syntactic phenomena. A relatively wide age range was chosen because one can find a broad range of variation across children in the first years of language development (De Villiers, 1992; Bates, Dale & Thal, 1995). For this same reason, age could not be the only variable to take

into consideration. A more reliable measure is the mean length of utterance (MLU) (term due to Brown, 1973). The MLU value from which it is possible to analyse morpho-syntactic phenomena is debated. Meisel (1994) is reluctant to consider two-word utterances as of any significance to observe morpho-syntactic phenomena, because he doubts they exhibit grammatical properties. Conversely, Deuchar and Quay (2000, pp. 82-83) argue that two-word utterances do lend themselves to morpho-syntactic analysis, provided that they exhibit morphological marking.

De Houwer (2005, p. 32) considers “utterances containing at least three-clause constituents or two-word utterances containing at least one bound morpheme” analysable in morpho-syntactic terms. As Italian is a typologically fusional language, where each noun, adjective and verb must bear an inflectional ending, two-word utterances seemed a plausible point in development to start from. English makes use of bound morphology much more sparingly, nevertheless two-word utterances may equally offer an indication of productive use of both verb and noun inflections. Furthermore, as the purpose of the study is the investigation of early morphological productivity, it was essential that the children were in the early stages of combinatorial speech. Children’s MLU was not actually measured at the recruitment stage, but parents were asked whether or not their children had already started to combine words into phrases.

4.6. Data collection procedure

Data were collected for both languages through longitudinal language sampling in audio-recorded play sessions and two elicitation tasks. In addition, at the beginning of the longitudinal study, a questionnaire was administered to both parents.

4.6.1 Play sessions

The play sessions took place in the children’s home over two consecutive years at monthly intervals for a period of one year for each child. The length of the play sessions varied for the two children: in Amy’s case each play session lasted approximately one hour and a half, while, in Ava’s case, they tended to be about half an hour longer on average. Because of her younger age, Ava was not as talkative as her sister and more time was needed to collect what seemed a sufficient amount of data each time. All the play sessions were audio-

recorded by the investigator. Each child was recorded in dyadic interaction with the Italian-speaking mother for about 45 minutes to one hour and with the English-speaking father for about the same amount of time. Occasionally, both parents interacted with the child at the same time for five to ten minutes. This separation of monolingual and bilingual contexts was made in order to observe the children's linguistic behaviour both when one language was activated and the other inhibited and when the two languages were highly activated in their minds.

Every effort was made to keep the linguistic environment as natural and spontaneous as possible. There was no set of structured activities, but the parents tried to select activities that were most likely to elicit the maximum amount of speech from the child at any given time. The children were engaged in several activities such as drawing, colouring, playing with toys, doing jigsaws, building *Lego*, story telling, reading of picture books, looking at family photographs, object naming and so forth. At the end of each session, the researcher wrote a summary to indicate her observations of the child's perceptual and productive abilities. In addition, the investigator noted parents' comments about their children's linguistic achievements.

4.6.2 The elicitation task

The elicitation task was designed with the only aim of supplementing the Italian and the English spontaneous speech samples by providing the two children with obligatory contexts for the production of the morphemes targeted in the analyses of the longitudinal data, i.e., present-tense copula forms, plural noun endings and present tense inflections. Although the spontaneous samples represent the main source of data in this study, naturalistic settings offer an opportunity rather than an obligation for the production of the targeted morphemes. The elicitation task was not intended to determine whether or not the children had acquired inflections but served the purpose to ensure that all their knowledge was explored. It was administered in Italian by the investigator and in English by the father, over two separate sessions. The father was instructed by the researcher on how to administer the task. The task itself was adapted from a task used in a previous study (Leonard, Caselli & Devescovi, 2002), which investigated Italian children's use of verb and noun inflections in the preschool years, using a set of pictures portraying animals and common objects. The

pictures were employed as production probes to elicit the target grammatical morphemes which also included the present tense first person singular endings and first person plural endings and the full paradigm of the definite article. Each probe was constituted by two pictures, with the first one setting the context for the use of the inflection in question and the second explicitly eliciting the child's response. The original study was conducted on a sample of 60 Italian children, of whom 12 were aged between 2;5 and 3;1 years and 12 were aged between 3;5 and 4;1 years. The original report indicated that two-year-olds were less accurate than all the other age groups but no other age effect was observed. Present tense first person singular inflections and third person singular endings were produced more accurately than the respective plural endings but no differences were observed between first person singular and third person singular endings and first person plural and third person plural inflections. Such differences were more evident in the data for the two-year-olds, while for each of the remaining four age groups accuracy on all verb inflections exceeded 90%. Similarly, in the production of plural noun inflections, only two-year-olds performed less accurately than the remaining age groups. Accuracy was higher for the *a* → *e* noun group than for the other two groups. In the production of copula forms, five- and six-year olds were more accurate than the younger age groups and accuracy was higher for *è* than for *sono*. The authors acknowledge that task factors may have influenced their findings. In particular, they point to the possibility that the lower scores obtained by the youngest children on first person singular and plural endings may have been determined by their difficulty in assuming the role of the characters depicted in the drawings. Although the pronoun and the verb ending used by the investigator set the context for the use of the first person, the children might have focused on the characters in the picture and described their actions. This is why first person endings were not included in the probes designed for the present task, despite the fact that such inflections were considered in the analysis of the spontaneous data. However, the authors also highlight that even the youngest children showed a general understanding of the task, because their percentages correct were nevertheless well above chance for all the endings tested. This design was chosen because it tests the exact same morphemes targeted in the analysis of the spontaneous speech data, including the copula, and because it had already been administered to a large number of same-aged native acquirers of Italian, providing a reference point for interpretation of data

collected and offering a proxy pilot study of the method with young children. Before designing the elicitation task, the option to employ a standardised test was considered but, it was discarded mainly because this type of tests focuses on the assessment of a wide range of communicative abilities and the aim of the task in the present study was not to assess the two children's linguistic abilities or identify the nature and the degree of potential language disabilities. In addition, there are no tests that are standardised for bilingual children. For example, the CELF Preschool Clinical Evaluation of Language Functions is only standardised for monolingual acquirers of English and assesses language functions in the areas of phonology, syntax, semantics and memory, focusing on skills such as sentence structure, word structure, concepts, following directions and expressive vocabulary. It is a lengthy test as it takes over one hour to administer and, more importantly, its main focus is on receptive capabilities and it lacks a specific focus on the inflectional items targeted in the present study. Indeed, the only relevant section is the word structure subset which however spans through several categories, including derivational morphology, among which only a handful are relevant to the present investigation (i.e., preposition, regular plural, genitive marker, progressive, third person singular, future tense, regular past tense, irregular past tense, copula, contractible and uncontractible auxiliary, direct object pronoun, possessive pronoun, subject pronoun, reflexive pronoun, noun derivation, comparative and superlative).

In the original study where this same elicitation task was used, the only training participant children underwent was represented by a preliminary spontaneous interaction with the experimenter, aimed at obtaining a spontaneous speech sample of approximately 100 utterances. The two BFLA children were not explicitly trained to answer the test questions for two reasons. First, they were already familiar with the person administering the probes as the Italian version was administered by the investigator with whom they had already had considerable interaction and the English version was administered by the father. Second, they were already familiar with the task of looking at an image on a screen and being asked to comment on it. Indeed, one of the most recurrent activities in which they were engaged in the course of the play sessions consisted in the identification of people and objects appearing in photos displayed on their parents' phones and laptops.

As mentioned above, in the original task, the production probes were presented through pictures and not through a PowerPoint slide show. Furthermore, the original study was exclusively used in Italian and it also included probes for the elicitation of the singular and plural forms of the definite article and the first person endings of the present indicative. In the present study each probe was created *ex novo*. The English and the Italian version of the task are very similar to each other, but there are some minor differences, which reflect adjustments made to adapt it to the specific morphological features of Italian and English. The Italian version consists of 38 production probes, whilst the English one is comprised of 28 probes. The probes were shown to the children via computer, through a PowerPoint slide show. Based on the data with the two BFLA children, the Italian version takes approximately 12 to 15 minutes to complete; the English version takes about 10 to 12 minutes. The difference in the number of probes is due to the fact that, in Italian, the suffixes to elicit with respect to both plural nouns and the present indicative tense are more numerous than in English. The following grammatical morphemes were investigated in the two languages: third person singular and plural copula forms; noun plural inflections; present indicative third person singular and plural forms.

With respect to the copula, the task tested the hypothesis that children have knowledge of its obligatory nature. As for the bound morphemes, the task took into account Pizzuto and Caselli's (1992) principle of contrastive use of verb types, which, as for the spontaneously produced speech data, is extended to noun types too (see Appendix E for the full set of probes of the Italian version of the task and Appendix F for the English version). The copula and noun inflection probes depict animals, flowers, fruit and common objects. Each probe consisted of two slides. In showing the first slide, the researcher described the picture with the aim of creating the context for the child's production of the target morpheme. The second slide elicited the child's response. A possible criticism of sentence-completion tasks is that they omit a crucial ingredient of production, i.e., the child's own intention. However, this kind of method is widely used in standardised tests designed to assess language disorders in young children. For instance, in the above mentioned word structure subset of CELF, children's knowledge of English grammatical rules is evaluated through a sentence-completion task, in which they are equally asked to complete a sentence that pertains to a given illustration using the targeted word structure.

In the two languages, eight probes were aimed at eliciting the production of copula forms as shown in examples (4.1) and (4.2), Figures 4.1 to 4.4.

4.1 Queste fragole sono rosse, ma questa fragola... (È blu)

Those strawberries are red, but this strawberry... (IS blue)

4.2 Questo coniglietto è grigio ma questi coniglietti... (SONO marroni)

This bunny rabbit is grey, but these bunny rabbits... (ARE brown)

The probes for the production of plural noun inflections are slightly different in Italian and English. In Italian, twelve probes are aimed at eliciting noun plural inflections, four for the *-a* → *-e* group, four for the *-o* → *-i* group and four for the *-e* → *-i* group. Example (4.3) shows the elicitation of the feminine plural marker *-e* (see also Figure 4.5 and 4.6):

4.3 Qui ci sono i pulcini qui che cosa vedi (le GALLINE)

Here there are chicks. Here what do you see? (the **HENS**)

In English, four probes elicit the plural marker *-s* and four probes elicit the allomorph *-es*. Furthermore, unlike in Italian, each pair of slides depicts the same item (see example 4.4, Figures 4.7 and 4.8)

4.4 Here there is a duck. Here what do you see? (DUCKS)

The verb inflection probes mostly feature characters from the popular cartoon series *Peppa Pig*. In Italian, eighteen probes are aimed at eliciting production of the simple present tense verb inflections, six for each of the three conjugations that form the Italian verbal system, three for each of the two persons tested (third singular and third plural). In English, twelve probes elicit the production of present tense forms, six for the third person singular marker *-(e)s* and six for the third person plural. With respect to the elicitation of present indicative forms, each probe is constituted by a single slide. For each of them, the children are asked to describe what is depicted in the picture, as in (4.5) and (4.6) (Figures 4.9 and 4.10):

4.5 Ecco Peppa! A Peppa piace mangiare la pasta. Qui che cosa fa? (MANGIA)

Look, Peppa! Peppa likes to eat pasta. What does she do here? (She **EATS**)

4.6 Ecco Peppa e George! A Peppa e George piace mangiare il gelato. Qui che cosa fanno? (MANGIANO)

Look, Peppa and George! Peppa and George like to eat ice cream. What do they do here? (**THEY EAT**)

FIGURE 4.1 The researcher says: “Queste fragole sono rosse”

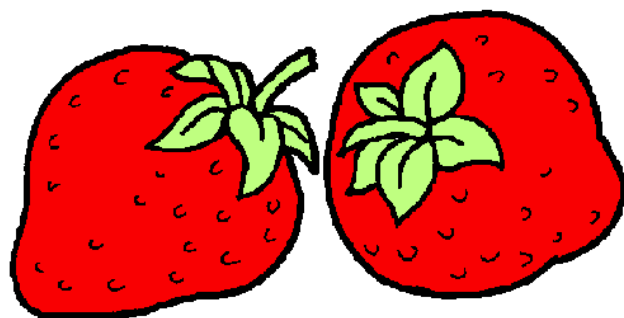


FIGURE 4.2 The researcher asks: “Ma questa fragola...?”



FIGURE 4.3 The researcher says: “Questo coniglietto è grigio”

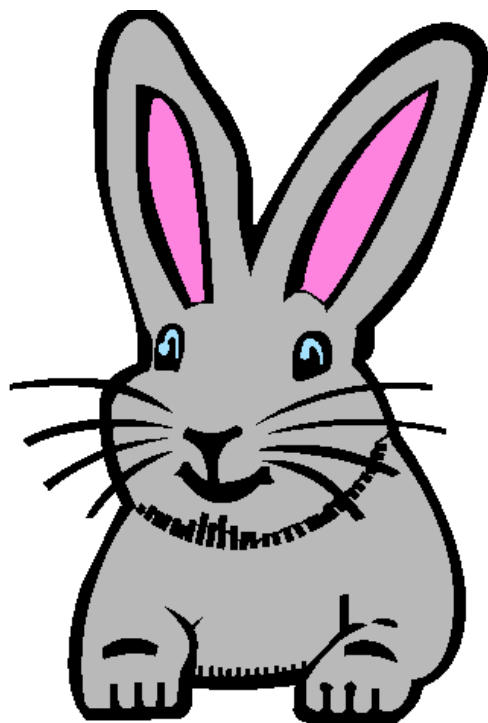


FIGURE 4.4 The researcher asks: “Ma questi coniglietti...?”

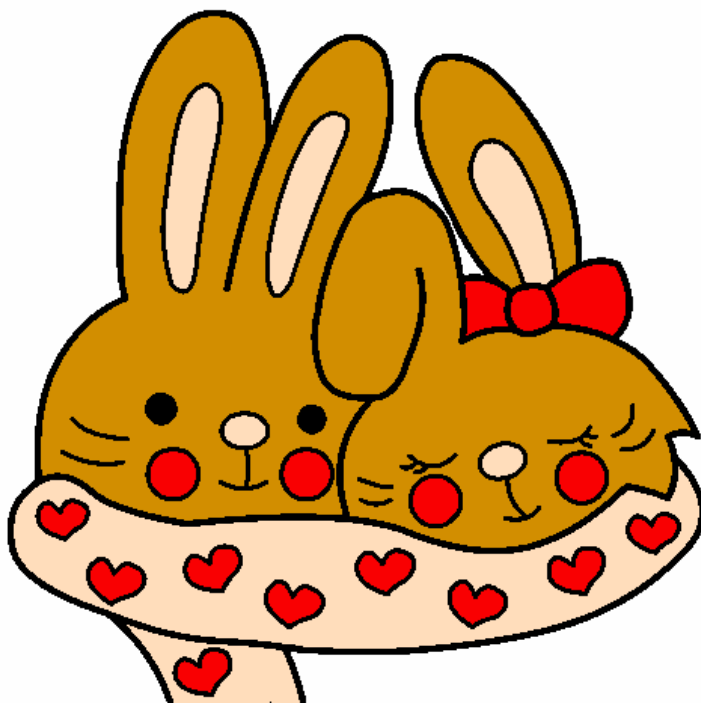


FIGURE 4.5 The researcher says: “Qui ci sono i pulcini”

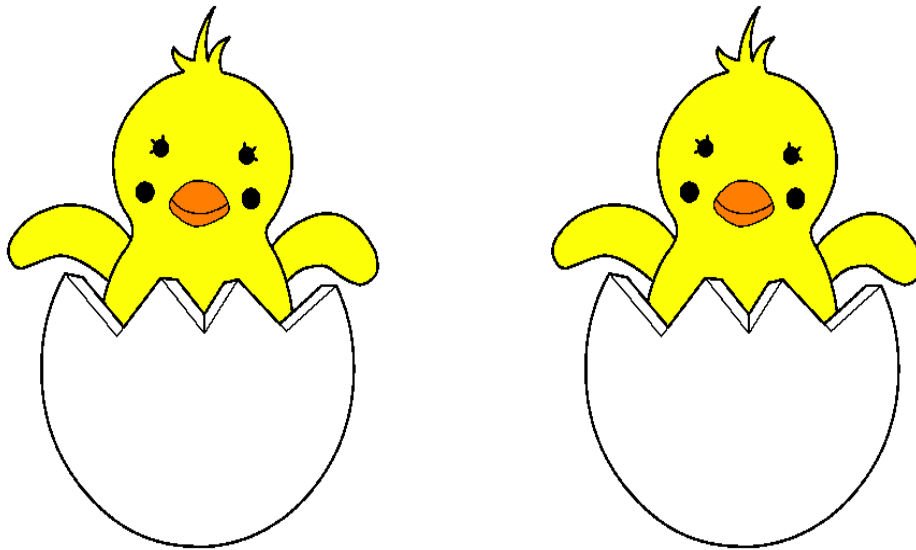


FIGURE 4.6 The researcher asks: “Qui che cosa vedi?”

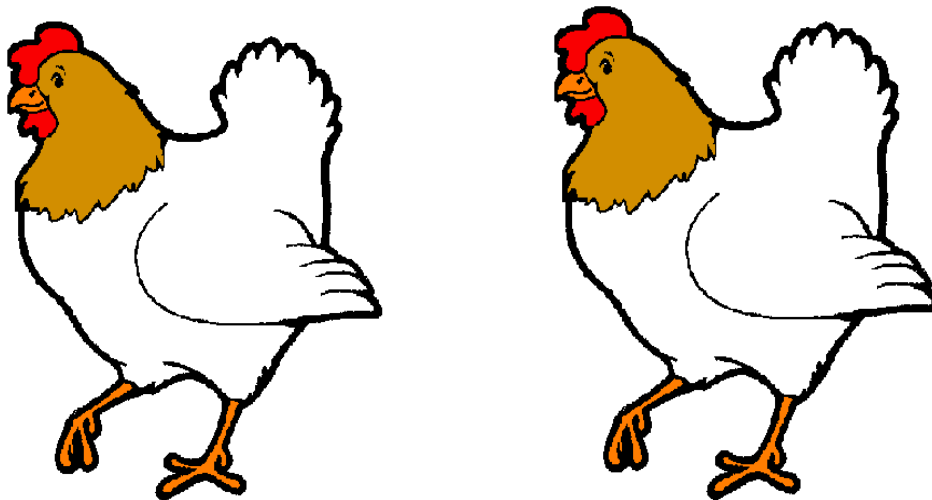


FIGURE 4.7 The father says: “Here there is a duck”

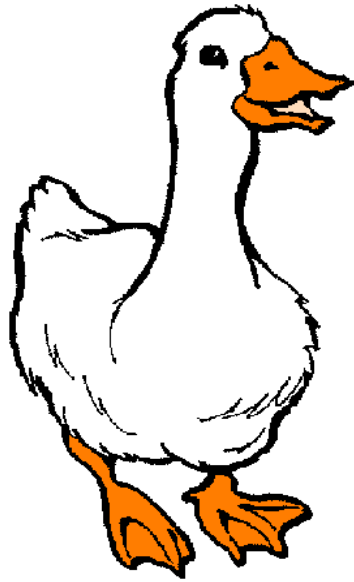


FIGURE 4.8 The father asks: “And here what do you see?”

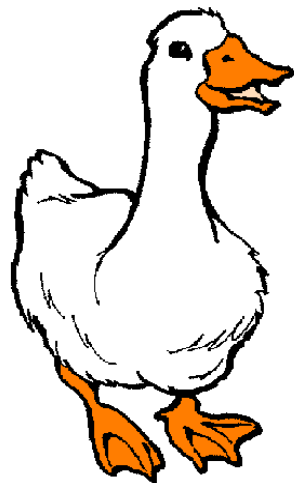
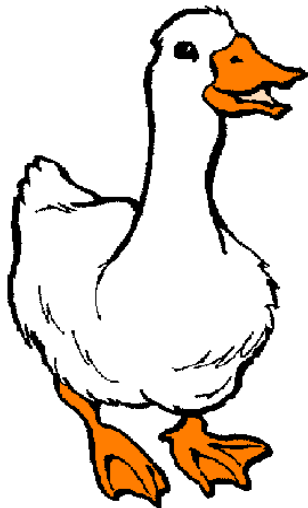


FIGURE 4.9 The researcher asks: “Qui, che cosa fa Peppa?”

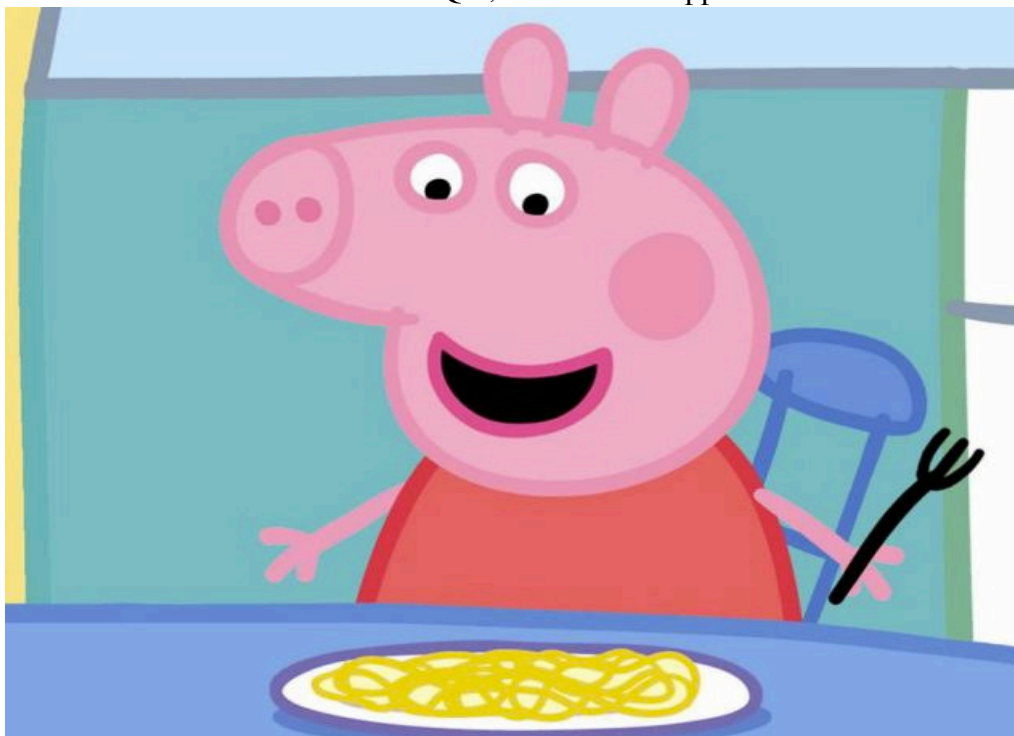


FIGURE 4.10 The researcher asks: “Qui, che cosa fanno Peppa e George?”



4.6.3 The questionnaire

A questionnaire was administered to both parents at the beginning of the longitudinal study, with the aim of evaluating the children's language environment (De Houwer, 2011). Each question was formulated to gather information on aspects of bilingual upbringing that have been shown or are presumed to impact the bilingual child's linguistic development (a detailed explanation of the rationale behind the formulation of each question is given in Appendix C). It comprised twenty-six questions and took approximately thirty minutes to complete. It explored the following aspects of the children's linguistic situation: the overall amount of exposure to Italian and English, the onset of exposure to each language, how the two languages are distributed between parents, parental discourse strategies, parent's attitude towards bilingualism in general and towards Italian, the minority language, in particular. Two versions of the questionnaire were realised, one in English and one in Italian, so that both parents could complete the questionnaire through their respective native languages. They were requested to fill out the questionnaire individually. It was left with them at the time of the researcher's first visit and collected by the researcher when she visited the family again for the second play session. The questionnaire served primarily to provide contextual information. Reading through the completed questionnaires helped get a more detailed, descriptive picture of the occurrence of the two languages within the child's environment and of the parental discourse strategies and attitudes towards the input languages.

4.7 Transcription and preliminary analysis

The spontaneous speech data come from the monthly play-sessions. All sessions were fully transcribed and coded by the researcher according to CHAT (Codes for the Human Analysis of Transcripts, Mac Whinney, 2000, 2012), a standardised coding and transcription system for naturalistic speech data. Each transcription was made soon after the relevant play session had taken place, so that the extra-linguistic context was still present in the researcher's mind. For each play session, the researcher listened to the recording at least twice. If some parts were deemed unclear even after re-listening multiple times, they were tagged and subsequently double-checked by a native speaker of either Italian or English. In addition, a native speaker of each language checked 5 minutes of the recording, which were

randomly chosen within each audio-file. There were no disagreements. Preliminarily, mean length of utterance (MLU) was computed to determine the children's overall linguistic maturity in their two languages. MLU values constitute a reliable measure of the point in development reached by a child (Brown, 1973). In this study, MLUs were calculated as an average utterance length at each session. Following previous studies of monolingual and BFLA children (e.g., Pizzuto & Caselli, 1992; Serratrice, 2001; Genesee & Paradis, 1997), MLUs were computed in words not morphemes. The main reason for doing so is that, because uninflected stems are not allowed in Italian, all Italian content words, must bear an ending. As a consequence all open class words are constituted by default by at least two morphemes. Hence, Italian has a higher morpheme-per-word ratio than English and a computation of MLU values in morphemes would bias the evaluation of the children's linguistic maturity against English. For example, in calculations of MLU in morphemes for English, one would count *book* as one morpheme and *books* as two; but, in Italian, both the singular form *libro* and the plural form *libri* contain two morphemes.

The calculation of MLU values was an important preliminary step to the morphological analysis. The aim of the morphological analyses is to describe and compare the emergence of inflectional morphology in Italian and English. The first research question asks whether inflections are used productively in the early stages of combinatorial speech and whether or not productive command of inflectional morphology is achieved earlier in richly inflected languages than in languages with sparse morphology. The second and the third research questions further explore productivity in the use of inflections by focusing on converging error data. Thus, although BFLA is regarded as a type of first language acquisition (Meisel, 1989), it was still essential that the two languages were being acquired in a rather harmonic manner, at least with respect to the developmental stage taken into consideration in the study. It was also important that the participants were at a very early stage of grammatical development. In other words, similar MLU values across the two languages validate the cross-linguistic comparison. Low MLU values show that the children are at an early stage of language production.

4.8 The Spontaneous speech data

4.8.1 Inflectional forms

The following morphemes were considered for analysis in the two languages:

- present indicative endings
- all the other non-compound, finite tense endings used by the children
- plural noun markers
- function words (i.e., copula forms, auxiliaries and verbal predicates)

With regard to verb morphology, the first focus is represented by the paradigm of the present indicative, because present indicative endings are the only ones for which it is reasonable to explore across-the-board acquisition in the speech of very young children. However, other non-compound tense endings, which happened to appear in the children's speech samples, were also included in the analyses. Because in Italian there are ten different endings to mark the six person-number combinations of the present indicative paradigm, in English the analysis was not limited to the use of the third person singular marker, but the use of personal pronouns was also investigated. With respect to lexical verbs, another measure of productivity is represented by the emergence of new tenses and moods, because it implies the use of new grammatical contrasts such as endings and auxiliaries. The analysis of the acquisition of nominal morphology focuses in both languages on noun plural markers since the plural marker *-(e)s* is the only nominal agreement morpheme of which the English language makes use.

Separation of inflections from stems is also indicated by overgeneralisation errors that children make with verbal and nominal morphology. Therefore, potential instances of morphological mixing (i.e., morphological overgeneralisations, intra- and cross-linguistic borrowings) were also investigated. A further focus of the analysis is represented by target deviations potentially showing non-productive use of inflections, such as omissions, non-finite forms and agreement errors. With respect to finiteness deviations, I considered infinitival and bare forms used in finite contexts and past participles or gerunds used without the auxiliary.

4.8.2 Criteria

The most important analyses for the purposes of this study are of morphological character. The morphological analyses focus on verbal and nominal morphology in both languages and were performed with the aim of investigating and comparing productive use of inflections across the two languages. Hence, one preliminary step was how to determine productive use of inflectional items. As explained in the second chapter, I chose to use criteria that could be considered as valid instruments of analysis under both constructivist and generativist-nativist accounts. For this reason, accuracy in the use of inflections could not suffice to investigate whether inflections were also used in an adult-like fashion. Indeed, one of the harshest constructivist criticism of generativist studies has been that children have been granted with adult-like use of inflections simply on the basis of their accurate speech data.

As for bound morphemes, **productivity** was defined in this study by the evidence of the separation of inflectional morphemes from stems. As suggested by Pizzuto and Caselli's productivity principle (1992, p. 517), children's ability to perform the morphological analysis of stem + inflection is signalled by the use of a given inflection with at least two verb types and of a verb type with at least two different inflections. Pizzuto and Caselli's principle is not only used in subsequent constructivist studies (e.g., Serratrice, 2001; Gathercole, Sebastián & Soto, 1999, 2000, 2002; Rubino & Pine, 1998) but also, although to a much more limited extent, in a generativist-nativist study (i.e., Guasti, 1994). **Accuracy** in the use of inflections has been evaluated on the basis of Cadzen's (1968) and Brown's (1973) criteria for the acquisition of grammatical morphemes. Cadzen defines point of acquisition "the first speech sample of three, such that in all three the inflection is supplied in at least 90% of the contexts in which it is clearly required" (1968, p. 435). Brown claims that mastery of a given grammatical morpheme is achieved if the morpheme appears in at least 90% of the contexts in which it is required. Pizzuto and Caselli (1992) also go as far as to claim that, before applying Brown's and Cadzen's criteria of acquisition, it is important to make sure that, in each speech sample considered for analysis, a given morpheme appears in at least five obligatory contexts. I do not think this is a realistic criterion to use in a context of spontaneous speech sampling, where there is no control over the occurrence of obligatory contexts. In addition, Pizzuto

and Caselli's principle makes specific reference to verb morphology, but in this study it is also applied to nominal morphology. With respect to stand-alone inflections, i.e., copula forms, auxiliaries and verbal predicates, the analysis of productivity was based on the variety of the structures produced by the children.

The following utterances were excluded from the morphological analyses: yes/no utterances and other uninformative one-word utterances; verb-less utterances not containing plural nouns; identical, immediate repetitions of adult speakers' utterances and unclear utterances. As a result, the analysis included the following utterances: utterances containing finite verb forms; utterances containing non-finite verb forms, except participles and gerunds interpretable as elliptical answers (e.g., *what are you doing? blowing*); utterances containing plural nouns; utterances containing copula and verbal predicate forms. Mixed utterances were included in the morphological analyses if they contained any of the following: instances of cross-linguistic morphological borrowing, verb forms and plural nouns (e.g., *gli horses fanno neeh!*). They were excluded if they contained errors of omission, agreement or finiteness, which were not unambiguously assignable to either language. As it turned out, only for one utterance in Amy's corpus, it was not possible to establish in which language the missing item should have been produced (*daddy, these le finestre, daddy, these the windows* 3;2.2). Ava's data contained no instances of ambiguous mixed utterances.

4.8.3 Issues with English present indicative forms

As already noted by other authors (e.g., Paradis & Genesee, 1997), the sparseness of inflectional markers in English makes the analysis of the acquisition of inflections quite problematic. With respect to the acquisition of the paradigm of the present indicative for example, a conventional interpretation of the notion of inflectional marking would have led to limiting both the analysis of the English samples and the comparative analyses to contexts where the third person singular was used. This would have implicated the exclusion of several utterances where other person-number combinations occurred. Paradis and Genesee (1997) excluded from their comparative analysis of finiteness all the English utterances containing present indicative first- and second-person forms as well as affirmative imperatives. They claimed that such verb forms are ambiguous because they are

identical to uninflected stems. At the same time, they did not exclude the same verb forms from the French data. This decision caused a considerable discrepancy between English and French finite utterances. As mentioned in section 3.3.1, although French verbs bear an inflectional suffix for each of the person-number combinations of the present tense, they sound just like bare stems in the singular. Of course, they can be classified as finite, because the actual bare form never appears in the input. The reason for this is that, in French, the infinitive is morphologically marked, unlike in English. However, the fact remains that the endings of the singular forms are not phonologically realised and, as a result, they would be indistinguishable from each other if they were not accompanied by a clitic subject pronoun. Thus, in French, clitics function as agreement markers. The same argument can also be followed for present indicative English forms and subject pronouns. Thus, I included all the person-number combinations in the analyses and looked at the use of subject pronouns in the English data.

There is also a further reason for doing so. It has been argued that in pro-drop languages, agreement takes on the role of the subject, because person and number are marked directly on the verb and subject pronouns can be left out (Wexler, 1998). Following the same line of reasoning, one can argue that in non-pro-drop languages, in cases where the subject is not represented by a full DF, subject pronouns take on the role of agreement, i.e., they cannot be omitted because they act like agreement markers. Put it in another way, in Italian, a pro-drop language, the grammatical feature of agreement is expressed by inflectional suffixes, in English, a non-pro-drop language, person and number are not encoded by the means of verbal inflections, but expressed by pronominal forms, which in a way can be regarded as the English counterpart of Italian agreement markers.

Pizzuto and Caselli's productivity principle was adapted to the slightly different analysis performed with the English data. With regard to contrastive use of verbs, it was asked whether or not a given verb type appeared with at least two different person-number combinations. From a practical point of view, this meant that, for example, forms such as *you eat*, *they eat* were included in the data analysis and considered as verb forms marked for person and number as much as the Italian equivalent inflected forms *mangi*, *mangiano*. As regards productive use of inflections, it was asked whether or not a given person-number combination appeared with at least two verb types. This meant that forms such, for

instance, as *I sleep, I eat* were regarded as occurrences of the first person singular with two verb types as much as the Italian equivalents *dormo, mangio*.

4.8.4 Issues with irregular verbs

A further issue that arose from the morphological analyses was the treatment of irregular verbs in Italian. Irregularity is present to a varying degree in the English and the Italian verbal systems and irregular verbs behave differently in the two languages. In Italian, most tenses can have an irregular paradigm, but, with the exception of the past participle, irregular verbs almost always bear the same inflectional suffixes as regular verbs. They deviate from the regular pattern because their stem changes throughout the paradigm, which makes each given form of the paradigm unpredictable. Conversely, in English, irregularity is confined to the past tense and the past participle. The other inflected parts of the verb – the third person singular present indicative and the present participle and gerund – are formed regularly. Furthermore, the past tense and the past participle inflectional markers are either not present, for verbs belonging to the old Germanic strong conjugation, or present but indistinguishable from the stem, for verbs belonging to the weak conjugation¹² (Bauer, Lieber & Plag, 2013). As segmentation of the inflectional bound morpheme from the stem is no longer possible, in English, irregular verbs are said to be learnt as specific words rather than acquired on the basis of a generative phonological rule¹³ (Pinker, 1995, 1999). By contrast, in Italian, irregular verbs are mostly generated like regular verbs. The only difference between Italian regular and irregular verb forms is that the latter require association of two different stems with the same paradigm (e.g., *esco, esci, esce, usciamo, uscite, escono*).

The practical implication of these observations is that Italian present tense irregular

¹² As for the former group of verbs, the change of tense/aspect is signalled by stem-internal vowel gradation (e.g., *bind bound; rise rose risen; sing sang sung*). As regards the latter group, the inflectional marker is indistinguishable from the stem because of phenomena such as vowel shortening (e.g., *creep crept*), vowel shortening and devoicing of the ending (e.g., *deal dealt; feel felt*), coalescence of consonants (e.g., *bet; cut*), coalescence of consonants and vowel shortening (e.g., *bleed bled; breed bred*), devoicing of the ending (e.g., *burn burnt; smell smelt*) or the reversal of the umlaut (e.g., *bring brought; teach taught*) (Bauer, Lieber & Plag, 2013).

¹³ Under an alternative generativist-nativist account, put forward by Yang (2002), the *Rules and Competition Model*, both regular and irregular verbs are formed on the basis of a rule of generative phonology. In this view, irregular past forms are generated through the application of the “appropriate irregular phonological rules over the default rule” (Yang, 2002, p. 61).

verb forms could be included in the morphological analyses. Moreover, in Italian, the analysis of the present indicative inflections focused on the actual inflectional markers rather than on a more generic person-number combination feature. Therefore, in the rare instances in which the regular morpheme does not occur for a particular person-number combination, the verb occurrence was not considered for analysis. For example, the verb *potere* (to be able to) does not take the *-e* marker in the third person singular, which is *può*. When *può* occurred, it was not included in the count of the occurrences of the third person singular marker *-e*. Conversely, irregular verbs bearing the regular present tense morphemes were included in the count of the occurrences of the present tense inflections.

For the purposes of contrastive use of verb types, irregular verbs may be less indicative, because to different person-number combinations may correspond a different stem. However, even irregular verbs keep the same stem with at least two or three different inflections within the paradigm. Hence, irregular verbs were not excluded *a priori* from the count of verb types used contrastively, but they were considered on a case-by-case basis. For instance, although the above-mentioned verb *potere* is highly irregular in the second and third person singular (*puoi, può*), it repeats the same stem in the first person singular and plural and the third person plural (*posso, possiamo, possono*). Thus, it was excluded from the total of verb types used contrastively if it occurred in person-number combinations exhibiting a different stem, but it was considered if used with endings for which the same stem is repeated.

4.9 Notes on Italian and English morphology

The following sections present a brief illustration of some morphological features of Italian and English with respect to the aspects that have been included in the morphological analyses of the spontaneous and the elicited data.

4.9.1 Italian verb morphology

The Italian verb system is a morphologically very informative organism that ordines its components on the basis of the categories of mood, tense, aspect, person and number. As previously mentioned, bare stems cannot surface as possible words in Italian (Hyams, 1988), but each verb form must bear an inflectional ending. For example, in a present

indicative form, one can identify the stem, that bears the semantic information and a grammatical morpheme, the ending, that identifies uniquely a given person-number combination. Because Italian is a typologically fusional language, each verb inflection encodes multiple grammatical features. In addition, Italian verbs are distributed across three conjugations that correspond to an equal number of thematic vowels: the first *-are*, which is the largest verb class, the second *-ere* and the third *-ire*. The first conjugation is also the only one that is still productive and, therefore, it tends to include newly coined verbs. By virtue of this distribution of verbs across three groups, verb inflections also change according to which conjugation a given verb belongs to. This means that, in theory, for the present indicative there should be eighteen different morphemes available, each one marking uniquely each of the six person-number combinations across the three conjugations. However, in reality, there is a certain degree of syncretism, hence, with the exception of the second person plural, all person-number combinations share the same ending across at least two conjugations (i.e., the first person singular, the first person plural and the second person singular are identical across the three conjugations; the third person singular and the third person plural are the same for the *-ere* and *-ire* groups). As a result, there are in total ten different morphemes available in the present indicative, as illustrated in Table 4.1. A small group of verbs belonging to the third conjugation inserts the infix *-isc-* between the stem and the ending in the first, the second and the third person singular and in the third person plural. As mentioned in the previous section, there are also verbs that change the stem throughout the conjugation and, therefore, they are classified as irregular. Most irregular verbs belong to the second conjugation, a smaller number to the third conjugation, and there are only four irregular verbs in the first conjugation but these are highly frequent: *andare* (to go), *dare* (to give), *fare* (to do or to make), *stare* (to stay).

The full verbal system includes seven moods, four finite and three non-finite, and twenty-one tenses, eleven simple and ten compound tenses. Compound tenses require the use of auxiliary *avere* (to have) or *essere* (to be) and are followed by the past participle of the main verb. If *essere* is required, the past participle must agree in gender and number with the subject. With *avere* the past participle does not change, but remains in its masculine, singular form. However, if it is preceded by a third person direct object pronoun or by the partitive particle *ne* (of it or of them), then it must agree in gender and number

with the clitic pronoun. Progressive forms employ the verb *stare* and the present gerund of the main verb.

TABLE 4.1 Italian present indicative endings

parlare (to speak)	ridere (to laugh)	dormire (to sleep)	finire (to finish)
parlo	rido	dormo	finisco
parli	ridi	dormi	finisci
parla	ride	dorme	finisce
parliamo	ridiamo	dormiamo	finiamo
parlate	ridete	dormite	finite
parlano	ridono	dormono	finiscono

4.9.2 Italian nominal morphology

Nouns in Italian are marked for gender, masculine or feminine, and number, singular or plural. A general feature of Italian nouns is that, with the exception of unassimilated loanwords, they all end in a vowel. Thus, in the structure of a noun one can typically identify the root, that bears the semantic information and the ending vowel, which marks the gender and number of the noun, as for example *penna* fem-sing (*pen*). Italian nouns have quite a rich inventory of vocalic patterns, as illustrated in Table 4.2. Nouns following the [o] – [i] pattern are all masculine (with the exception of the word *mano*, *hand*, which is feminine), nouns following the [a] – [e] pattern are all feminine, whereas for nouns ending in *–e* in the singular and in *–i* in the plural no prediction can be made about the gender from the ending vowel. Nouns following the [a] – [i] pattern are all masculine, with the exception of the words *ala* (*wing*) and *arma* (*weapon*) which are feminine.

TABLE 4.2 Italian noun endings

	[o] – [i]	[a] – [e]	[e] – [i]	[a] – [i]
m. sg.	ors- o		bicchier- e	poet- a
f. sg.		paper- a	nav- e	
m. pl.	ors- i		bicchier- i	poet- i
f. pl.		paper- e	nav- i	

Adjectives in Italian must agree in gender and number with the noun they describe. They are grouped into three classes on the basis of their declension. Their vocalic patterns are illustrated in Table 4.3. The first class includes adjectives with four endings: *-o* masculine singular, *-a* feminine singular, *-i* masculine plural, *-e* feminine plural. The second class includes adjectives with two endings: *-e* feminine and masculine singular, *-i* feminine and masculine plural. The third class includes adjectives with three endings: *-a* feminine and masculine singular, *-i* masculine plural and *-e* feminine plural.

TABLE 4.3 Italian adjective endings

Class I				Class II		Class III		
m. sg.	f. sg.	m. pl.	f. pl.	m./f. sg.	m./f. pl.	m./f. sg.	m. pl.	f. pl.
o	a	i	e	e	i	a	i	e
rosso	rossa	rossi	rosse	felice	felici	entusiasta	entusiasti	entusiaste

4.9.3 Definite and indefinite article

Italian has a full paradigm of definite articles, varying in gender and number (Table 4.4). In the singular, two forms are used with masculine nouns, *il* and the allomorph *lo*, while *la* is used with feminine nouns. In addition, the singular masculine and feminine forms *lo* and *la* need to be reduced to *l'* in front of vowels. In the plural, two forms are used with masculine nouns, *i* and *gli*, while the only article form for feminine nouns is *le*. The paradigm of indefinite articles is equally full, with masculine and feminine forms, while the plural is expressed by partitive forms. *Un* and the allomorph *uno* are used with masculine nouns, *una* is used with feminine nouns and needs to be reduced to *un'* in front of vowels. Thus, the choice of a certain article form firstly depends on the gender and the number of the noun with which it is associated. In addition, its use is also regulated by phonotactic constraints, so that another important distinction concerns whether the following word, which does not necessarily coincides with the associated noun (see example (4.8) and (4.9)), starts with a vowel or a consonant or, for masculine nouns, a consonant cluster. In (4.7), the associated noun *psicologo* is masculine and starts with a consonant cluster, therefore, the phonotactic constraint dictates the choice of *lo/uno*. In (4.8) and (4.9), the associated noun *psicologo* is not adjacent to the article and, since the intervening words start with a consonant (4.8) and a vowel (4.9) respectively, the correct article forms are *il/un* and *l'/un*.

4.7 **lo/uno** psicologo (the psychologist)

4.8 **il/un** bravo psicologo (the good psychologist)

4.9 **l'/un** altro psicologo (the other psychologist)

TABLE 4.4 Definite and indefinite article paradigm in Italian

	m. sg.	m. pl.	f. sg.	f. pl.
in front of consonant	il/un	i	la/una	le
in front of vowel	l'/un	gli	l'/un'	le
in front of consonant cluster (i.e., s+cons, ps, gn, pn) and x, y, z	lo/uno	gli	la/una	le

4.9.4 English verb and noun morphology

The English verb system makes ample use of periphrasis. Most combinations of grammatical features such as tense, aspect, and mood are expressed by constructions with auxiliary verbs and modal verbs. With the exception only of the present tense, third person singular suffix *-(e)s*, person and number are not encoded by inflectional morphology on lexical verbs, but agreement is expressed by subject pronouns. For the other person/number combinations of the simple present, for example, finite forms are indistinguishable from bare stems, which in English can surface as legitimate words. The other inflectional endings of an English verb are: the simple past suffix *-ed*, which encodes tense but not person/number distinction, the present participle and gerund suffix *-ing*, the past participle suffixes *-ed* and *-en*.

Modals do not inflect, although some of them come in present-past pairs. They also have a defective paradigm, because they do not have participle or infinitive forms. Auxiliaries *be* and *have* and copula *be* contain some morphological cues to agreement and tense features. In the conjugation of auxiliary *be* and copula *be*, agreement is morphologically signalled for the first and the third person singular in both present and past tense. In the paradigm of auxiliary *have*, agreement is morphologically signalled on the third person singular, but only in the simple present (and the compound tenses that take the present as auxiliary, i.e., present perfect, present perfect continuous), while any person/number distinction is obliterated in the past. Nominal inflectional morphology is equally sparse. Gender is never signalled by inflectional morphology on nouns and

adjectives, and number is only morphologically marked on plural nouns. The only inflectional affixes are the plural suffix *-(e)s* and the genitive case marker *'s* on nouns. Case is also visible on pronouns.

4.10 Chapter summary

In this chapter, I have presented the research questions and the hypotheses that can be formulated with respect to such questions from the competing perspective that nativist-generativist and constructivist accounts take about child language development. I have also outlined the research design, where I have presented the participants, the recruitment criteria and the data collection procedures. This included longitudinal spontaneous speech sampling in audio-recorded play sessions, two elicitation tasks and a questionnaire individually administered to the parents at the start of the sampling period. I have also illustrated the method of the data analyses. Finally, I have given an overview of features of Italian and English inflectional morphology that were included in the analyses of the spontaneous and the elicited data.

CHAPTER 5

Amy's data analyses

5.1 Introduction

The child participants in this study are two BFLA siblings, Amy and Ava, who are almost exactly two years apart. Data were collected over two consecutive years at monthly intervals, but for a period of 12 months for each child. At the time of the first respective play session, Amy was 2 years 10 months and 18 days old while Ava was 2 years and 26 days old. Both children were recorded in their home in dyadic interaction with their mother and their father, although, occasionally, both parents interacted with them at the same time, especially when transitioning from one language to the other.

The data analysed in this chapter come from the case study of Amy. Ava's data are presented in the next chapter. I first try to draw a detailed picture of Amy's linguistic environment, which is based on the questionnaire that her parents individually filled out at the beginning of the sampling period. Secondly, I present the analyses of the Italian data focusing on the spontaneous speech samples and, subsequently, moving to the elicited data. Then, the English spontaneous and elicited data are presented. Finally, I compare the morphological acquisition and use patterns in Italian and in English. With respect to the spontaneously produced speech samples, the analyses are presented in a similar order in both languages: present indicative endings, emergence of tenses and moods, contrastive use of verb types, instances of morphological mixing, copula, auxiliaries and plural nouns inflections. For each of the inflectional forms considered for analysis, I look at accuracy, productivity and target deviations. Following Brown (1973) and Cadzen (1968), accuracy is defined in terms of appearance of a given inflection in at least 90% of obligatory contexts and over consecutive sessions. Following Pizzuto and Caselli (1992), productivity in the use of bound morphemes is defined in terms of appearance with multiple stems. In addition, contrastive use of verb types and noun types is also considered. In previous studies, this productivity principle was only applied to verb morphology but, in this study, it is also applied to nominal morphology. Productivity of function words is evaluated on the basis of their appearance in varied structures.

5.2 Amy's linguistic environment

At the start of the sampling period, Amy's parents were asked to individually fill out a questionnaire, which was designed with the aim of gathering detailed information about her linguistic environment. The questionnaire focused on aspects that have been shown or suggested to affect the language acquisition process. Most aspects are of course peculiar to BFLA (e.g., child preferred language, family attitudes towards the minority language and bilingualism, child need for each of her languages), but others concern any type of first language acquisition (e.g., number of hours children sleep at night, care givers' speaking rates). The following report is based on the answers that Amy's parents provided. Some gaps in the questionnaire were filled with informal questions the researcher asked during the monthly visits.

Amy's exposure to Italian and English started at birth. She sleeps ten hours per night from 9pm to 7am on average. In addition, she also sleeps for about one hour in the afternoon. In the thirteen hours that she has left for interaction, she is mostly exposed to English because she attends an English day care from 8am to 6pm every day. Before going to school and when she gets back home, she is exposed to both English and Italian in equal measure in direct interaction with her parents, because both parents are at home then and they consistently speak to her in their respective native language. However, when speaking to each other, the parents use English. As a result, during the weekdays, Amy hears Italian only from her mother for about one hour and a half each day. At the weekend, Amy is at home with her parents and, consequently, her exposure to the two languages becomes more balanced as she has access to both linguistic sources all day. She also goes to an Italian playgroup for one hour on Saturday mornings, but she equally takes part in activities, such as ballet classes, swimming lessons, which are conducted in English. Amy does not spend extended periods of time in Italy, not even during the summer holidays, because her mother works full time in Dublin. However, her family visits the Italian grandparents three times per year for about a week each time. Furthermore, the Italian grandparents come to Ireland twice a year and stay in an apartment adjacent to the family's house for two to three weeks each time. The mother thinks that the higher exposure to English may explain the fact that Amy sometimes inserts English nouns in Italian sentences, uses English verb stems with Italian past participle suffixes in present perfect periphrases (e.g., *ho pushato*, *I have*

pushed, ho runnato, I have run), places the adjective before the noun (e.g., *la rossa macchina, the red car*) or places the conjunction *anche (too)* in utterance final position. The father says that Amy has a good command of both languages but, in English, she seems to stutter a little while she tries to formulate sentences. Both parents think that she appears to comprehend both languages equally well. However, they have different views about the language that Amy prefers to use when playing on her own. The mother says Italian, the father English. It could be that she is never really on her own and tends to use the language of the people who surround her while playing. Amy's mother makes an active effort to create opportunities for Amy to use Italian. In Italian, they play together, cook and read stories. Furthermore, Amy watches Italian cartoons. She hardly ever uses English when addressing her mother and, on the very rare occasions in which this happens, the mother provides a translation equivalent or rephrases the utterance in Italian. Sometimes, she simply moves on and answers in Italian. Amy displays this same socio-pragmatic sensitivity also with other speakers and selects from her two languages depending on the language of her interlocutors. Amy uttered her first words when she was eleven months old and those were in Italian, possibly because, in the first year of life, she spent more time with her mother who was at home to mind her.

It has to be acknowledged that creating and maintaining a balanced linguistic input is certainly a challenging task, especially in a situation where the parents speak the majority language to each other. In this study, MLU values as well as subjective measures such as parents' reports and the researcher's own impression throughout the longitudinal language sampling period suggest that, despite receiving higher exposure to English, Amy is developing her two languages in a balanced fashion. However, it is possible that this is due to the fact that, at the time of the data collection, she was still enjoying the benefits of spending the first year of her life at home with her mother, who consistently spoke English to her.

When asked to rate the need that Amy has for her two languages, both parents recognise that Amy has a stronger need to speak English than Italian, because she lives in an English-speaking country. Surprisingly, it is only the father who points out that it is also almost equally important for Amy to speak Italian, because most relatives do not speak English on the Italian side of her family and because Italian is part of her identity. Her

mother argues that Amy does not have a real need for speaking Italian, because both parents have native-like command of English and she interacts with teachers and friends in English.

5.3 Quantitative analysis

Amy was always recorded in her home, on a Saturday or Sunday morning. Each play session lasted approximately one hour and a half. Efforts were made to keep the length of the Italian and the English play sessions as homogeneous as possible. However, in sessions nine, ten and eleven, English data could not be collected due to the fact that Amy's father was unavailable. Just over sixteen hours of recording were accumulated over the one-year long longitudinal study, nine hours and twenty-five minutes in Italian and six hours and forty-five minutes in English. Each session was fully transcribed into CHAT. MLU values (Brown, 1973) were calculated through CLAN (MacWhinney, 2000, 2012) for all transcriptions in both languages.

TABLE 5.1 Amy's data

Age	It MLU	En MLU	U	It U	En U	It-En	En-It
2;10.18	2.9	2.9	139	70	69	-	-
2;11.15	2.5	2.4	144	74	70	-	-
3;0.14	2.1	2.8	290	146	144	5	-
3;2.2	2.8	3.8	271	101	170	-	2
3;2.21	3.7	3.1	229	78	151	2	1
3;3.10	2.8	3.1	356	228	128	3	-
3;4.13	2.5	3.1	419	196	223	5	-
3;5.23	2.6	3.6	388	228	160	5	1
3;6.21	2.6	-	277	277	-	3	-
3;7.21	3.5	-	113	113	-	8	-
3;8.24	3.8	-	101	101	-	3	-
3;9.20	3.6	3.7	451	228	223	-	-
			3178	1840	1338	34 (1.8%)	4 (0.3%)

FIGURE 5.1. Overview of Amy's data

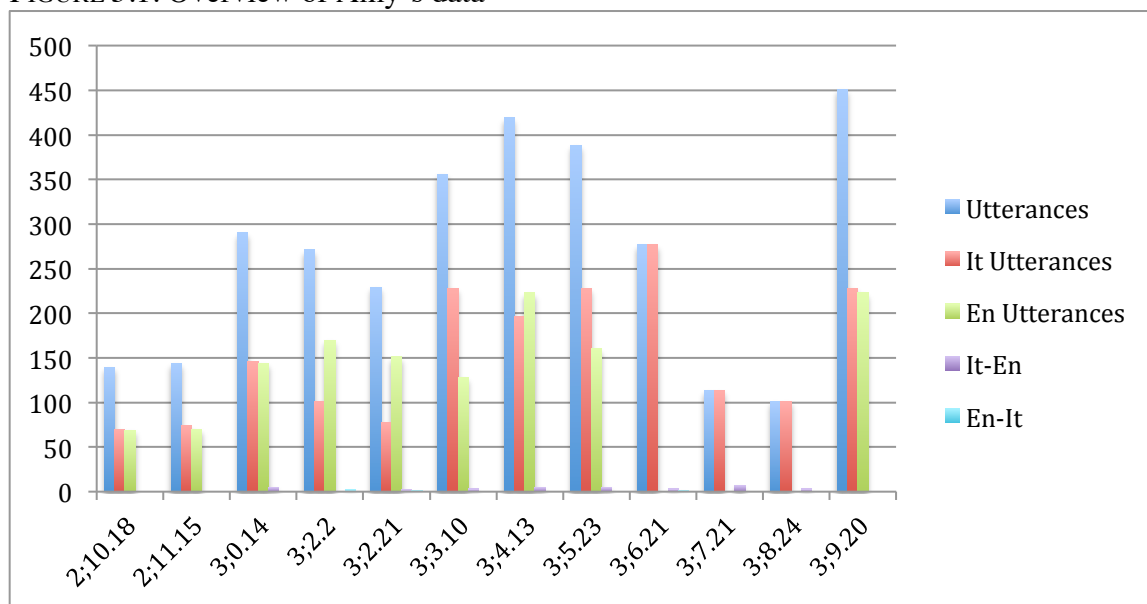
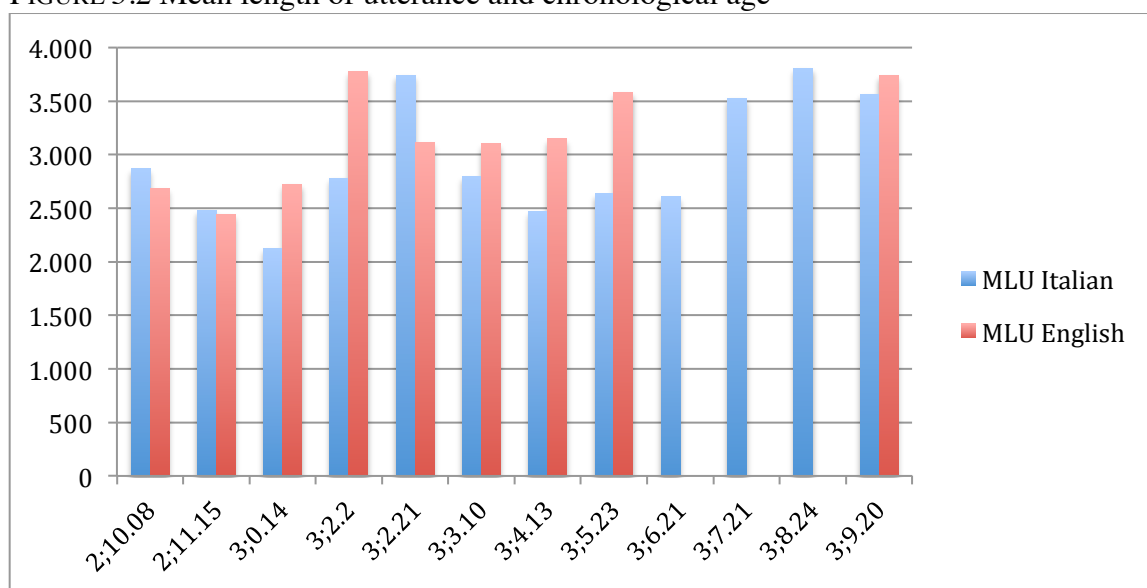


FIGURE 5.2 Mean length of utterance and chronological age



In total, Amy's corpus is constituted by 3178 utterances of which 1840 are Italian utterances and 1338 are English utterances. Her data are summarised in Table 5.1 and Figure 5.1. Mixed utterances represent a very small percentage of her overall speech production (about 1.2%). When directionality of code-mixing is taken into account (Paradis, Nicoladis & Genesee, 2000), it can be observed that Amy more frequently

borrowing from English into Italian than the reverse (Table 5.1 and Figure 5.1). Figure 5.1 serves the purpose to provide a graphic representation of the two children's monolingual and mixed utterances in each language at each session. Figure 5.2 serves the purpose to provide a graphic representation of MLU in each language at each session. In both figures, age on the axis of abscissae clearly indicates the session to which the data refer and different colours identify the Italian and the English data.

Her code-mixing is mostly limited to the lexical domain and usually consists of the insertion of an English noun into an Italian utterance. Other patterns of code-mixing are very marginally attested in her speech samples¹⁴. Following previous studies (e.g., Paradis & Genesee, 1996, 1997; Serratrice, 2001), and because Italian has a higher morpheme per word ratio than English, MLU values were calculated on the basis of words (MLUw) rather than morphemes. Figure 5.2 presents the results when Amy's MLUw is plotted against age for her two languages. Since Brown's seminal work in 1973, mean length of utterance has been widely used as a reliable measure of children's syntactic development. As mentioned in section 4.7, in this study, this syntactic measure serves a twofold purpose: on the one hand, it shows that Amy is in the early stages of multi-word combinations throughout the study; on the other, it shows that linguistic development proceeds in a rather balanced fashion in Italian and in English.

5.4 The Italian spontaneous data

5.4.1 Present indicative inflections

The results for present tense endings are summarised in Tables 5.2, 5.3, 5.4 and 5.5. Table 5.2 shows accuracy rate, i.e., provision of present tense endings in obligatory contexts. Table 5.3 presents a view of the use of all the inflections that appear in Amy's speech samples with different verb types on a session-by-session basis. Table 5.4 presents all the instances of agreement errors and of non-finite forms. Table 5.5 presents an overall view of

¹⁴ The exhaustive list of Amy's Italian-English and English-Italian mixed utterances is provided in Appendix G. As regards the Italian-English directionality, the following instances of mixing have been identified: noun insertion (76%), word order and noun insertion (6%), noun morphology (6%), insertion of an adjective (6%), insertion of a deictic pronoun (3%) and insertion of a conjunction (3%). As for the English-Italian directionality, the following instances have been identified: noun insertion (25%), verb inflection (25%), insertion of a deictic pronoun (50%).

the 67 verb stems with which present indicative endings appear in the course of the sampling period. Irregular verbs are highlighted in blue, if they keep the same stem for at least two of the inflections with which they are used, and in red if they change their stem for each of the endings with which they appear. Green font highlights the regular verbs appearing with at least two different endings. As mentioned in section 4.9.1, there are ten different endings in the present indicative to mark the six person-number combinations across the three conjugations in which Italian verbs are distributed. If one does not consider the three second person plural markers¹⁵, which never appear in the data, the number of different endings lowers to seven. In the course of the longitudinal study, the seven present tense endings appear with 67 verb types (Table 5.5). They are discussed in sequence following the chronology of their emergence in the samples.

TABLE 5.2 Proportion of present indicative inflections in obligatory contexts

Age	1ps o	2ps i	3ps a	3ps e	1pp iamo	2pp ate	2pp ete	2pp ite	3pp ano	3pp ono
2;10.18	4/4	1/1	1/1	-	-	-	-	-	1/1	-
2;11.15	3/3	-	2/2	4/4	-	-	-	-	-	-
3;0.14	5/5	-	3/3	2/2	-	-	-	-	-	*0/1
3;2.2	4/4	1/1	3/3	0/1	*0/1	-	-	-	4/4	1/1
3;2.21	-	-	5/5	4/5	-	-	-	-	2/2	-
3;3.10	6/9	1/1	1/1	3/3	5/5	-	-	-	-	2/2
3;4.13	7/7	2/2	5/5	6/6	6/6	-	0/1	-	5/5	1/1
3;5.23	31/32	6/6	10/10	4/4	4/4	-	-	-	-	-
3;6.21	12/12	3/3	18/18	13/13	8/8	-	-	-	3/3	4/4
3;7.21	3/3	1/1	5/6	5/5	2/2	-	-	-	1/2	0/1
3;8.24	7/7	3/3	8/8	12/12	4/4	-	-	-	-	-
3;9.20	27/27	2/2	5/5	7/7	2/2	-	-	-	1/1	3/3
Total	109/113	20/20	66/67	60/62	31/31	-	0/1	-	17/18	11/12
%	96%	100%	98%	97%	100%	-	-	-	94%	92%

Bold indicates the first appearance of a given inflection

¹⁵ As shown in previous studies, the second person plural is rare in the speech of young children (e.g., Guasti, 1994; Rubino & Pine, 1998; Leonard *et al.*, 2002; Stavrakaki & Okalidou, 2016). For example, Guasti (1994) found no instances of the person-number combination in question in the longitudinal data of three monolingual Italian children (Martina 1;8 to 2;7, Diana 1;10 to 2;6 and Guglielmo 2;2 to 2;7) she investigated. Moreover, in the present study, the discourse context did not provide opportunities for the use of the second person plural. Indeed, there is only one obligatory context for the use of a second person plural ending throughout Amy's files. As it will be shown in the next chapter, in Ava's files there are no obligatory contexts at all.

TABLE 5.3 Appearance of verb inflections with different verb types

MLU	Age	Present Indicative						Imperative			Imperfect							
		1ps o	2ps i	3ps a	3ps e	1pp iamo	3pp ano	3pp ono	2ps a	2ps i	1ps avo	2ps avi	3ps ava	1ps evo	2ps evi	3ps eva	3ps iva	3pp ivano
2.9	2;10.18	3	1	1			1		1									
2.5	2;11.15	3		2	4													
2.1	3;0.14	5		2	2													
2.8	3;2.2	4	1	3			2	2										
3.7	3;2.21		1	4	3		2											
2.8	3;3.10	4	3	1	3	4		2	3		2		1	3		2		
2.5	3;4.13	2	2	5	5	2	3	1	2	3								
2.6	3;5.23	13	4	4	2	3			1	1								
2.6	3;6.21	4	2	8	4	4	3	2	3	2			1					
3.5	3;7.21	2	1	3	7	2	1	1								1		1
3.8	3;8.24	3	1	3	1	4				1		1	1	1	1			
3.6	3;9.20	8	1	5	4	2	1	3	1				3	1		2	1	

Blue font highlights the first appearance of a given inflection

Four inflections appear from the beginning of the longitudinal study, namely the first person singular marker, the second person singular and the first conjugation's third person singular and plural markers. The first person singular marker appears with 20 different verb stems (Table 5.5) and in 109 out of 113 obligatory contexts (Table 5.2). It is used with a maximum of 13 verb types within the same session (Table 5.3). There are four target deviations with this ending, which are all person deviations, where the second person singular is used (Table 5.4). Three of them take place in the sixth session. Amy and her mother are commenting on photographs taken during a summer holiday in France. In the first two instances, Amy says *vuoi* (you want), but the context and intonation suggest she means *voglio* (I want).

(3;3.10)

5.1 *CHI: lo vuo-i fare ancora.
 it want-2SG.PRS to do again
 'you want to do it again.'

(3;3.10)

5.2 *MOT: cosa vuo-i vedere, Amy?
 what want-2SG.PRS to see, Amy
 'what do you want to see, Amy?'

*CHI: vuo-i vedere questa fattoria.
 want-2SG.PRS to see this farm
 'you want to look at this farm.'

*MOT: okay.

In the third instance, Amy says *sai* (you know), but intends to mean *so* (I know) as it is indicated by intonation and by the mother's immediate reply.

(3;3.10)

- 5.3 *MOT: dove eravamo?
 where were we?
 *CHI: non lo sa-i
 not it know-2SG.PRS
 ‘you don’t know’.
 *MOT: come non lo sai?
 how not it you know
 ‘how is it possible you don’t know?’

The last error with the use of the first person singular occurs in the eighth session. The mother asks what colour she wants the walls of her new bedroom to be painted: *quale colore preferisci?* (*what colour do you prefer?*). Amy says *mi preferisci rosa* (*you prefer pink*) instead of *preferisco rosa*. The second person singular ending appears with 13 verb types (Table 5.5) and it is provided in 20 out of 20 obligatory contexts (Table 5.2). It appears with a maximum of four verb types within the same session (Table 5.3). There are no target deviations with this ending, although all the instances of person deviation with present tense markers revolve around the use of the second person singular marker in a first person singular context (Table 5.4).

TABLE 5.4 Agreement errors with verb inflections and non-finite forms

Age	Agreement Errors	Target	Non-Finite Forms	Target
3;0.14	esce Cappuccetto Rosso e la nonna	escono		
3;2.2	questo è per il bambino quando non cadono dal letto	cade	comprare questo	compriamo
3;2.21	perché vuoi un cucchiaino?	vuole	perché si sporcata	si è sporcata
3;3.10	lo vuoi fare ancora	voglio	andare sullo scivolo	stavo andando
3;3.10	vuoi vedere questa fattoria	voglio	giocando con loom bands	stavo giocando
3;3.10	avevi i leggings	avevo	fatto così	avevo fatto
3;3.10	non lo sai	so	spingendo il carrello	stavo spingendo
3;3.10			mangiando il gelato	stavo mangiando
3;4.13	vuoi un cappuccino?	volete		
3;5.23	preferisci rosa	preferisco	mescolare	sto mescolando
3;7.21	ci serve dei curtains, mamma	servono		
3;9.20			andare su quello scivolo	stavo andando
3;9.20			comprare la fontana	stavamo comprando

The third person singular marker *-a* appears in 66 out of 67 obligatory contexts (Table 5.2) and with 25 verb types (Table 5.5). It is the only marker that is used in each session. It appears with a maximum of eight verb types within the same session (Table 5.3).

The only target deviation with this marker consists of an instance of intra-linguistic borrowing and it is discussed in section 5.4.3. The third person plural marker *-ano* appears in 17 out of 18 obligatory contexts (Table 5.2) and with seven verb types (Table 5.5). It is used with a maximum of three verb types within the same session (Table 5.3). There is only one target deviation with this marker, which is an intra-linguistic borrowing also discussed in section 5.4.3. The other endings make their appearance in the data gradually. The *-ere* and *-ire* conjugations' third person singular ending *-e* is used for the first time in the samples in the second session. It appears in 60 out of 62 obligatory contexts (Table 5.2) and with 18 verb types (Table 5.5). It is used with a maximum of seven verb types within the same session (Table 5.3). There are two target deviations with this ending, which are both agreement errors (Table 5.4). The first instance is a number deviation and takes place in the fourth session. Amy and her mother are playing with *Lego*. Amy is building a house and is talking of a cushion that can be placed on the bed to prevent an imaginary child from falling off.

(3;2.2)

- 5.4 *CHI: questo è per il bambin-o.
 this is for the child-M.SG
 'this is for the child.'
- *CHI: quando non cad-ono dal letto.
 when not fall-3PL.PRS from the bed
 'when they don't fall off the bed.'
- *MOT: è per non far-li cadere?
 is for not to make-them fall off
 'it is for not making them fall off?'

She says *cadono* but she should have said *cade*, because the subject of the sentence is the omitted anaphoric pronoun *lui* (*he*), which refers to the noun *il bambino*. However, the plural marker may be explained by the fact that Amy is perhaps thinking of more than one child. That is how her mother interprets the sentence as is evidenced by her immediate reply.

TABLE 5.5 View of the 67 verb types that appear with present indicative endings

1ps -o	2ps -i	3ps -a	3ps -e	1pp -iamo	3pp -ano	3pp -ono
voglio	vuoi	abbraccia	vuole	compriamo	mancano	esistono
coloro	disegni	puzza	sale	torniamo		
faccio		fa	rompe	facciamo	fanno	
spingo		taglia	spinge	lasciamo		
metto	metti	arrampica	mette	mettiamo		mettono
so	sai	s'infil	piace	iniziamo		piacciono
canto	preferisci	indossa	marcisce			
	togli	gioca		cerchiamo	giocano	
sto	schiacci	sta		trasferiamo	stanno	
do	vedi	da		vediamo		
pulisco	leggi	suona	legge			
posso	puoi	rientra	può	possiamo		possono
riesco		arriva	riesce		arrivano	
insegno		diventa	esce			escono
prendo		si chiama	prende	prendiamo		
butto		abita	cade	abitiamo		cadono
porto	porti	porta	serve	portiamo		servono
mescolo		entra	beve			
mangio		mangia	ride	mangiamo	mangiano	
mi lavo		secca	siede			
devo	devi	vola	deve	dobbiamo		devono
	muovi	va	si muove	andiamo	vanno	
		si riposa				
20/67	13/67	25/67	18/67	16/67	7/67	9/67
30%	19%	37%	27%	24%	10%	13%

The second instance is a person deviation and occurs in the fifth session. Amy and her mother are reading a story of *Hello Kitty*.

(3;2.21)

5.5 *MOT: Hello Kitty chiede gentilmente.
Hello Kitty asks kindly
'Hello Kitty kindly asks.'

*MOT: vuo-i un cucchiaino o due?
want-2SG.PRS a tea spoon or two

- ‘do you want a tea spoon or two?’
 *CHI: perché vuoi un cucchiaino?
 why want-2SG.PRS a tea spoon
 ‘why do you want a tea spoon?’
 *MOT: perché alla nonna il tè piace dolce.
 because to the grannie the tea pleases sweet
 ‘because her grannie likes her tea sweet.’

Amy seems to ask why *Hello Kitty*’s grandmother wants a teaspoon of sugar. She should say *vuole* (*she wants*) but says *vuoi* (*you want*). However, it is worth pointing out that this error might in fact reflect the omission of the interrogative syntactic structure *perchè Hello Kitty chiede* (*why does Hello Kitty ask*) needed to quote *Hello Kitty*’s question.

The second and third conjugations’ third person plural *–ono* ending appears for the first time in the fourth session. It is provided in 11 out of 12 obligatory contexts (Table 5.2) and with nine verb types (Table 5.5). It appears with a maximum of four verb types in the same session (Table 5.3). There are two errors with this ending, which consist of deviations by number. The first instance occurs in session three and is not included in the count of missed opportunities because, up until session four, the spontaneous speech samples do not contain evidence that Amy has knowledge of the morpheme in question.

(3;0.14)

- 5.6 *CHI: da qua esc-e Cappuccetto Rosso [: Rosso] e la nonna.
 from here go-3SG.PRS Little Red Riding Hood and the grannie
 ‘from here Little Red Riding Hood and the grannie go out.’
 *MOT: esc-ono dalla pancia del lupo, vero?
 go-3PL.PRS from the belly of the wolf true
 ‘they come out of the wolf’s belly, don’t they?’

Amy and her mother are recounting the story of *Little Red Riding Hood* with the help of a picture book. They are at the point when *Little Red Riding Hood* and her grandmother come out of the wolf’s belly. Here the use of the third person plural is not required by a third person plural subject but by the use of two coordinated third person singular subjects. The other number deviation occurs in the tenth session. In this case, the third person plural subject is the English noun *curtains*.

(3;7.21)

- 5.7 *CHI: ci serv-e dei curtains, mamma!
 to us need-3SG.PRS some curtains mum
 ‘we need curtains, mum!’
 *MOT: sì che ci serv-ono!

yes that to us need-3PL.PRS
 ‘yes, we need them!’

The first person plural appears for the first time in Amy’s speech samples in the sixth play session. It is used in 31 out of 31 obligatory contexts (Table 5.2) and with 16 verb types (Table 5.5). It appears with a maximum of four verb types within the same session (Table 5.3). The only target deviation with this inflection is a finiteness error and occurs in the fourth session (Table 5.4). This deviation is equally not included in the count of obligatory contexts as it precedes the appearance in the data of the relevant morpheme. Amy and her mother are looking at photos taken during the summer holiday in France.

(3;2.2)

5.8 *MOT: a te ne compriamo un altro sempre color salmone.
 to you of it we buy an other always colour salmon
 ‘we buy another one for you always in a salmon colour.’

*CHI: sì!
 ‘yes!’

*CHI: con questo.
 ‘with this.’

*MOT: con quel fiocchetto?
 ‘with that little bow?’

*MOT: chissà se lo troviamo, Amy.
 who knows if it we find, Amy
 ‘who knows if we find it, Amy.’

*MOT: non lo so se lo troviamo.
 not it I know if it we find
 ‘I don’t know if we find it.’

*CHI: questo compr-are questo e quello siamo in Francia.
 this buy-INF this and that be[1PL.PRS] in France
 ‘To buy this and that we are in France.’

*MOT: quando and-iamo in Francia un’altra volta compr-iamo questo.
 when go-1PL.PRS to France an other time buy-1PL.PRS this
 ‘and then when we go to France again we buy this.’

The infinitive *comprare* (*to buy*) seems to lend itself to a modal interpretation (Hoekstra & Hyams, 1998; Freudenthal *et al.* 2009).

As mentioned above, Amy does not use the second person plural marker in the data. However, a context for its use arises in the seventh session. Amy and her mother are playing with *Happy Family*, a set of toys that includes a house, a castle, several shops and of course family members. The mother plays a waitress and Amy’s imaginary friends, while Amy pretends to be a customer. Addressing Amy as the waitress, the mother uses the

third person singular, which is used in Italian to express formality. The mother asks Amy to check with her imaginary friends if they want a cappuccino. In this case also, the referent is imaginary and, because the subject is left out in Amy's utterance, it is impossible to say whether or not she has in mind a plural subject. Indeed, it is only from the mother's previous utterance that the context for a plural verb form arises.

(3;4.13)

5.9 *MOT: vuol-e chiedere ai suoi amici.
want-3SG.PRS to ask to the your friends
'do you want to ask your friends.'

*MOT: se vogliono un cappuccino?
if want-3PL.PRS a cappuccino
'if they want a cappuccino?'

*CHI: vuo-i un cappuccino?
want-2SG.PRS a cappuccino?
'do you want a cappuccino?'

*MOT: allora quanti cappuccini, Amy?
'so how many cappuccinos, Amy?'

*MOT: uno per te e uno per la principessa?
'one for you and one for the princess?'

In her subsequent utterance, the mother seems to assume that Amy has asked one single friend. Furthermore, because the *-ete* suffix never appears in Amy's speech samples, it is not possible to establish whether or not she has knowledge of this morpheme. Indeed, second person plural markers are absent from the speech samples of both children and this person-number combination never appears in the English files either.

The data presented here show that, overall, present tense inflections are used accurately. The first person singular marker and the third person singular *-a* appear to have already been acquired from the beginning of the longitudinal study. Point of acquisition is the sixth session for the third person singular marker *-e* and the second person singular endings. The two third person plural endings are never provided over three consecutive sessions, therefore, no point of acquisition can be identified for them.

The analysis of target-deviant forms suggests that they are not random but have a systematic character. Agreement errors deviate from the target forms by only one of the two grammatical features, person and number, encoded by agreement on Italian verbs. Person deviations are confined to singular endings and exclusively revolve around the use of the second person singular marker in a context where the first person singular is

required. The borrowing of the second person singular marker concerns the irregular verbs *volere* and *sapere* in all but one case. Two number deviations consist of the borrowing of the third person singular marker *-e* into a context where the third person plural marker *-ono* is required and in one case the opposite pattern can be observed (Table 5.4). However, a more in depth analysis reveals that those number deviations are not straightforward because, in every instance, the plural or singular status of the subject is ambiguous. In the case of the borrowing of the third person plural marker *-ono* into a third person singular context, the subject of the sentence is not only omitted but also imaginary. Therefore, it cannot be excluded that Amy has in her mind switched from one imaginary child to two or more children. In the reverse instances, the subjects are two coordinated singular subjects and an English plural noun respectively.

5.4.2 Tenses moods and verb stems

The emergence of new tenses and moods has been taken into account in the morphological analysis since it can be regarded as a measure of productivity. The analysis of the use and the emergence of tenses and moods shows that three tenses are represented in Amy's speech samples from the beginning of the longitudinal study, namely the present indicative and imperative, the present perfect and the pluperfect (Table 5.6). In session three, the imperfect tense appears and is used since then in each of the following sessions, with the exception of sessions five and seven. In almost each session, new inflections belonging to the paradigm of the imperfect tense appear in the data (Table 5.3). The present continuous appears in session four, and in session twelve the past continuous is used for the first time. Amy uses 67 verb types in the present indicative.

Throughout the sampling period, 23 of these verb types are used with at least two different inflections and seven with three or more inflections (Table 5.5). More precisely, three verbs (*portare, to bring, mangiare, to eat, dovere, to have to*) appear with four different inflections, three verbs (*stare, to stay, potere, to be able to and prendere, to take*) with three different endings. For *mettere (to put)*, the paradigm of the present indicative is almost fully conjugated, with the exception of the second person plural. Nine of the twenty-three verbs have an irregular paradigm in the present tense. They are: *dare (to give), riuscire (to succeed), sapere (to know), uscire (to go out), andare (to go), dovere (to have*

to), *fare* (to do), *potere* (to be able to) and *stare* (to stay), but they all keep the same stem with at least two of the inflections with which they occur (Table 5.5). Conversely, the irregular verb *volere* was not considered as it exclusively occurs in the first, the second and the third person singular and the stem is different for each of these person-number combinations (*voglio*, *vuoi*, *vuole*). If the verbs used in the other non-compound tenses that appear in Amy's speech are also considered, the total of verb types in her lexicon rises to 77; 28 verbs are used with at least two different inflections and 13 with three or more inflections.

TABLE 5.6 Emergence of tenses and moods in Italian

Age	Tense	Mood
2;10.18	Pres /PresPerf /Pluperf	Ind /Inf/Imp
2;11.15	Pres /PresPerf	Ind /Inf
3;0.14	Pres/PresPerf/ Imperf	Ind/Inf
3;2.2	Pres/PresPerf/Imperf/Pluperf/ PresCont	Ind/Inf
3;2.21	Pres/PresPerf	Ind/Inf/Imp
3;3.10	Pres/PresPerf/Imperf/Pluperf	Ind/Inf/Imp
3;4.13	Pres/PresPerf	Ind/Inf/Imp/ Cond
3;5.23	Pres/PresPerf/Imperf PresCont	Ind/Inf/Imp/ ImpNegAre
3;6.21	Pres/PresPerf/Imperf/PluPerf/PresCont	Ind/Inf/Imp/ ImpNegEre
3;7.21	Pres/PresPerf/Imperf/PastSim	Ind/Inf
3;8.24	Pres/PresPerf/Imperf	Ind/Inf/Imp
3;9.20	Pres/PresPerf/Imperf/PresCont/ PastCont	Ind/Inf/Imp

Bold indicates emergence of new tenses and new moods

A more conservative measure would be to consider for analysis only the verb types used contrastively in the course of the same session in all non-compound tenses. By doing so, the overall number of verb types that occur with at least two inflections lowers to 13 (Table 5.7). Only the verb *mettere* is used with more than two inflections (3;3.10) and only

on three occasions, there are more than two verb types used with multiple endings, namely in sessions four (3;2.2), nine (3;6.21) and twelve (3;9.20).

Six verbs are irregular but they were included in the count of verb types used contrastively because they were used in person-number combinations in which the same stem is repeated. They are *riuscire* (to succeed), *andare* (to go), *dovere* (to have to), *fare*, (to do), *potere* (to be able to), and *stare* (to stay).

TABLE 5.7 Verb types used contrastively in each session

Age		Present Tense	Non-Compound Tenses	
2;10.18	6	-	7	-
2;11.15	8	-	8	-
3;0.14	9	-	9	-
3;2.2	9	devi devono; va vanno; sto sta	9	-
3;2.21	8	va vanno; fa fanno	8	-
3;3.10	11	metti mette mettono; piace piacciono	17	-
3;4.13	18	mangia mangiano	23	-
3;5.23	22	prendo prendiamo	24	-
3;6.21	18	arriva arrivano; faccio facciamo; mangia mangiano; mette mettiamo; posso possiamo; serve servono	21	-
3;7.21	14	fa fanno	15	-
3;8.24	10	abita abitiamo	13	facciamo facevi
3;9.20	21	piace piacciono; posso possiamo; riesco riesce	24	sto stave

In Table 5.8, the irregular verbs are highlighted in red when they change their stem for each of the endings with which they are used. For instance, *potere* was not included in session eight, where it occurs in the second and third person singular (*puoi, può*), but could be included in sessions nine and twelve, where it appears in the first person singular and the first person plural (*posso, possiamo*).

TABLE 5.8 Verb types used with present indicative endings session by session

Age	-o	-i	-a	-e	-iamo	-ano	-ono
2;10.18	coloro	disegni	si attacca			mancano	
	faccio						
	voglio						
2;11.15	metto		abbraccia	deve			
	spingo		puzza	rompe			
	voglio			vuole			
				sale			
3;0.14	voglio		mangia	esce			
	canto		taglia	deve			
	faccio						
	metto						
	so						
3;2.2	do	devi	va			vanno	devono
	sto		sta			mangiano	cadono
	so		gioca				
			bisogna				
3;2.21		vuoi	va	deve		vanno	
			fa	mette		fanno	
			mangia	legge			
			sta				
3;3.10	posso		va	marcisce	andiamo		
	pulisco	metti		mette	compriamo		mettono
	so	sai		piace	facciamo		piacciono
	voglio	vuoi			torniamo		
3;4.13	so	vedi	da	cade	facciamo	vanno	possono
	voglio	vuoi	indossa	deve	mettiamo	stanno	
			s'infil	prende			
			mangia	riesce		mangiano	
			taglia	spinge			
3;5.23	butto	muovi	va	piace	iniziamo		
	posso	puoi	bisogna	serve	lasciamo		
	faccio	preferisci	fa				
	mangio		si riposa				
	mescolo						

	metto						
	insegno						
	porto						
	riesco						
	so						
	voglio	vuoi					
	prendo				prendiamo		
	sto						
3;6.21			arriva	deve	dobbiamo	arrivano	
	faccio		fa		facciamo		
			indossa				
			mangia	mette	mettiamo	mangiano	
	posso		porta		possiamo		
	so	schiacci	rientra	serve		stanno	servono
		togli	suona				escono
	voglio		va	vuole			
3;7.21	posso		diventa	beve	cerchiamo		
	so	sai	fa	ride	vediamo	fanno	*facciono
			va	riesce			
				serve			
				*vole			
				vuole			
				siede			
3;8.24	so	leggi	abita	piace	abitiamo		
	voglio		si chiama		facciamo		
	posso				*potiamo		
					trasferiamo		
3;9.20	devo	vedi	si arrampica	beve	mangiamo	giocano	
	faccio		si chiama	si muove			esistono
	mi lavo		entra	piace			piacciono
	posso		secca		possiamo		servono
	riesco		vola	riesce			dormono
	so						
	sto						
	voglio						

Bold highlights verb types used contrastively within each session

5.4.3 Morphological mixing

Overgeneralisations (O), intra-linguistic borrowings (ILB) and cross-linguistic borrowings (CLB) at the morphological level are all shown in Table 5.9. These target deviations are of particular interest in this study because they cannot have been heard in the input; hence,

they show that inflections have been detached from stems and are used with the intent to communicate a grammatical meaning.

TABLE 5.9 Morphological mixing

MLU	Age	O	Target	ILB	Target	CLB	Target
2.1	3;0.14	frutte	frutta				
2.8	3;3.10			marciata	marcita		
2.5	3;4.13					los lettos	i letti
2.5	3;4.13					letts	letti
2.6	3;5.23	mote	moto				
3.5	3;7.21			vole	vola		
3.5	3;7.21			diventire	diventare		
3.5	3;7.21			facciono	fanno		
3.8	3;8.24	potiamo	possiamo				
3.6	3;9.20			parleva	parlava		
3.6	3;9.20			pirato	pirata		

There are three instances of morphological overgeneralisations. The first occurs in session three. Amy is looking at a picture book with her mother who asks questions about the pictures. They have seen a caterpillar and the mother asks what the caterpillar eats.

(3;0.14)

- 5.10 *MOT: e questo cos' è?
 and this what is
 'and what is this?'
- *CHI: un caterpillar.
 'a caterpillar.'
- *MOT: un caterpillar.
 'a caterpillar.'
- *MOT: bruco.
 'caterpillar.'
- *CHI: bruco.
 'caterpillar.'
- *MOT: cosa mangia il bruco?
 what eats the caterpillar
 'what does the caterpillar eat?'
- *CHI: questi.
 'these.'
- *MOT: questi cosa sono?

- these what are
 ‘what are these?’
 *CHI: sono le frutt-e [: frutte].
 are the fruit-F.PL
 ‘they are fruits.’
 *MOT: la frutt-a
 the fruit-F.SG
 ‘fruit.’

As the noun *frutta* always occurs in the singular in Italian, *frutte* is not a word Amy may have ever heard in the input. Therefore, she seems to be using the plural marker *-e* in order to express a plural concept. There is considerable morphological knowledge that goes into this overgeneralisation. It presupposes segmentation of the noun in question into stem *frutt-* plus inflection *-a*, changing of the ending vowel from *-a* to *-e* and association of the plural meaning with the marker *-e*. In session eight, something similar happens with another noun. Amy and her mother are looking at pictures taken a few days earlier, when the *Giro d’Italia* (*Tour of Italy*) had come to Ireland. The mother asks what they saw before seeing the bicycles. Amy answers *le mote*, *the motorbikes*.

(3;5.23)

- 5.11 *CHI: le mot-e.
 the mot-F.PL
 ‘the motos.’
 *MOT: le moto sì.
 the motos yes
 ‘motos yes.’

The noun *moto* is apparently irregular because despite ending in *-o* it is feminine and because it does not change from singular to plural. In reality, it is just the abbreviation of the word *motocicletta/e* which follows the same morphological pattern as the majority of Italian feminine nouns, which end in *-a* in the singular and make the plural by changing the *-a* to *-e*. Hence, *moto* is a feminine noun and, being just a shortened form, does not change from singular to plural. However, articles and adjectives that may appear with it must agree in gender and number with it. Amy’s intention of using the word *moto* in the plural is clearly indicated by her choice of the article *le*, which also shows that she is aware that this is a feminine noun. What she does not know yet is that the noun is unchangeable; therefore, she changes the ending vowel to *-e*. In session eleven, Amy asks to read another story and says *potiamo un’altra?* (*can we another one?*). *Potere* has an irregular paradigm in the

present tense, which means that its stem changes throughout the conjugation. Amy should have said *possiamo* but she says *potiamo*, thus using the stem *pot-* that appears in all the other tenses and moods with the only exception of the present subjunctive. Interestingly, in the present indicative, the stem *pot-* only appears in the second person plural *potete*, which, as already mentioned, is the only one that is absent from her speech samples throughout the recording period.

(3;8.24)

- 5.12 *CHI: pot-iamo un' altra?
 can-1PL.PRS an other
 'can we another one?'

There are seven instances of intra-linguistic morphological borrowings scattered throughout the recording period. The first occurs in the sixth session. Amy and her mother are looking at some pictures taken at Halloween five months earlier. Amy sees the pumpkin they had carved and says that it had gone bad and they have to buy another one.

(3;3.10)

- 5.13 *CHI: mamma, ma si è mars-ata [: marcita].
 mum but itself is rot-PST.PTCP.F.SG.ARE
 'mum, but it has gone bad.'
- *CHI: bisogna comprare un'altra. we need to buy another one.
- *MOT: il prossimo Halloween ne compriamo next Halloween we'll buy
 un'altra. another one of them.

Amy says *marsata* but should have said *marcita* because *marcire* belongs to the *-ire* group and adds the suffix *-ito/a/e/i* to the verb stem to form the past participle. Verbs in *-are* add *-ato/a/i/e* and this is where Amy takes the suffix from. The majority of Italian verbs belongs to the *-are* group, hence they are more frequent than verbs in *-ire*. All the other instances of morphological borrowings involve verbs belonging to the larger *-are* group with which Amy uses endings taken from the paradigm of verbs in *-ere* and *-ire*. At the beginning of session ten, Amy's mother is reading *The Three Little Pigs* from a picture book and asks Amy questions about the story.

(3;7.21)

- 5.14 *MOT: Amy, come fa il lupo a far volare via la casa?
 'Amy, how does the wolf make the house fly away?'
- *CHI: non lo so.
 'I don't know.'
- *MOT: come non lo sai?

'how come you don't know?'

*MOT: soffia e sbuffa.
'he blows and puffs.'

*MOT: e la casetta cosa fa?
'and what does the little house do?'

*CHI: vol-e via.
fly-3SG.PRS.ERE/IRE away
'it flies away.'

*MOT: vol-a via sì.
fly-3SG.PRS.ARE away yes
'yes, it flies away.'

Amy wants to say that the little house flies away and says *vole via*. The person-number combination that she chooses is correct, but *volare* is a verb in *-are*, hence, it takes the *-a* ending not the *-e* ending which is for verbs in *-ere* and *-ire*. Two months later, in the last session, talking of Peter Pan, Amy provides the target third person singular marker *-a* with the same verb.

(3;9.20)

5.15 *MOT: non ha le ali Peter Pan?
not has the wings Peter Pan
'hasn't Peter Pan got wings?'

*MOT: e come vol-a?
and how fly-3SG.PRS
'and how does he fly?'

*CHI: vol-a con le foglie.
fly-3SG.PRS.ARE with the leaves
'it flies with the leaves.'

Later in the same session, they are reading the story of *The Three Little Pigs* again. They are at the point where the wolf falls through the chimney in the hot water pan that the wise little pig has placed on the fireplace. The mother has just said that the wolf has become all red and has burnt himself. Amy asks why but uses the *-ire* ending for the *-are* verb *diventare*.

$$(3;7.21)$$

5.16 *MOT: ti fa divent-are rosso
to you make become-INF.ARE red
'it makes you become red.'
*MOT: e ti brucia la pelle.
and to you burns the skin
'and it burns your skin.'
*CHI: perché la pelle ti fa divent-ire rosso?

why the skin to you makes become-INF.IRE rosso
 ‘why does it make your skin become red?’

The fourth intra-linguistic borrowing occurs towards the end of the same session. Amy and her mother are talking about Amy’s new bedroom in the house to which the family is about to move. Amy wants *Hello Kitty* curtains, but her mother says there are no *Hello Kitty* curtains in shops. Amy then asks what curtains are available. She says *che tende facciono?* The verb *fare* is irregular, the third plural person is *fanno*. Once again, Amy uses a form she has not heard in the input.

(3;7.21)

- 5.17 *CHI: che tende facci-ono allora?
 what curtains make-3PL.PRS.ERE/IRE then
 ‘what curtains do they make then?’
 *MOT: che tende f-anno?
 what curtains make-3PL.PRS.ARE
 ‘what curtains do they make?’

It is noteworthy that the mother has just used the target form *fanno*, but despite that, Amy creates her own inflected form by taking the stem *facci-* which appears in both the first person singular and plural (*facci-o facci-iamo*), and adding the third person plural marker *-ono*, which is borrowed from the conjugation of the *-ere* and *-ire* groups. The target form *fanno* had also just occurred in one of Amy’s previous utterances:

(3;7.21)

- 5.18 *CHI: no, gli horses fanno neh.

In session twelve, there are three more instances of intra-linguistic borrowing. Amy and her mother are looking at photos taken in France during the summer. They are talking of a child with whom Amy played during the holiday. The mother says that that child did not speak Amy’s language. Amy contradicts her mother and claims that that child also spoke Italian. She uses *parlare* (*to speak*), a verb in *-are*, and selects the correct person-number combination and verbal aspect, but adds the ending *-eva* that only verbs in *-ere* take.

(3;9.20)

- 5.19 *MOT: no quella bambina non parl-ava
 no that child not speak-3SG.IPFV.ARE
 la lingua come te.
 the tongue like you
 ‘no that child did not speak the same language as you.’
 *MOT: parlava francese.

	French
	speak-3SG.IPFV.ARE
	‘she spoke French.’
*CHI:	sì, parl-eva anche la mia lingua.
	yes speak-3SG.IPFV.ERE also the my tongue
	‘yes, she also spoke my language.’
*CHI:	I'ho sentita.
	I heard her.
*INV:	quale lingua parlava?
	which language did she speak?
*INV:	tu che lingua parli.
	you speak two languages.
*INV:	quale parlava?
	which one did she speak?
*MOT:	parlava quella di mamma o quella di papa?
	did she speak mum's one or dad's one?
*CHI:	quella di mamma e me.
	the one of mum and me.
*MOT:	sì, okay.
	yes, okay.

Immediately after that, when the mother asks about another child with whom Amy also played during the same holiday, she uses the target form *parlava*.

(3;9.20)

5.20 *MOT: e ti ricordi Celeste che lingua parlava?
 ‘do you remember which language Celeste spoke?’
 *CHI: parl-ava la mia lingua.
 speak-3SG.IPFV.ARE the my tongue
 ‘she spoke my language.’

This could suggest that *parleva* is just a slip of the tongue but in the same session, after an interval of 250 utterances, Amy borrows the *-eva* suffix into the imperfect indicative paradigm of *parlare* again.

(3;9.20)

5.21 *CHI: ma Celeste parl-eva anche la mia lingua.
but Celeste speak-3SG.IPFV.ERE also the my tongue
‘but Celeste also spoke my language.’
*MOT: sì, Celeste parl-ava italiano.
yes Celeste speak-3SG.IPFV.ARE Italian
‘yes, Celeste spoke Italian.’

The last intra-linguistic borrowing occurs with a noun. Amy asks to watch TV. Amy's family has just moved to a new house, where they have also built a small apartment for when the Italian grandparents come and visit. Amy often goes to the apartment that is

adjacent to the main house, to watch cartoons on the Italian channels also when the grandparents are not there. Now she does not want to watch the Italian TV, which - she complains - will be showing pirates.

(3;9.20)

- 5.22 *CHI: voglio guardare quella TV. I want to watch that TV.
 *MOT: quale TV? which TV?
 *CHI: la nostra. ours.
 *MOT: non ti piace più quella dei nonni? don't you like the grandparents' one anymore?
 *CHI: no, perché quella dei nonni ha i pirati. no, because the grandparents' one has got pirates.
 *CHI: non mi piacciono i pirati. I don't like pirates.
 *MOT: non ti piacciono i pirati. you don't like pirates.
 *MOT: ma a volte qua c'è anche Peppa Pig. but sometimes here there is also Peppa Pig.
 *MOT: c'è Barbapapà. there is Barbapapa.
 *MOT: non è colpa della tv it is not fault of the TV.
 *MOT: solo che in questo momento c'è Pepter Pan. it is just that now there is Peter Pan.
 *MOT: poi avevi detto che Peter Pan ti piaceva. then you had said you liked Peter Pan.
 *CHI: no, ma ci sono i pirati. no, but there are pirates.
 *CHI: uno pirat-o ha i baffi. a pirate-M.SG has the moustache
 'a pirate has got a moustache.'

She says *i pirati* in the plural three times before using this noun in the singular. The majority of masculine nouns in Italian ends in *-o* in the singular and in *-i* in the plural. However, there is a small group of nouns that end in *-i* in the plural but in *-a* in the singular and *pirata/i* belongs to this small group. When using this noun in the singular, Amy overgeneralises and makes it end in *-o*, thus borrowing the more common ending vowel for masculine singular nouns. She also adds the *-o* marker to the indefinite article *un* (*a, an*). Something similar happens with the definite article *lo* (*the*) in a cross-linguistic borrowing that is discussed here below.

There are only two instances of cross-linguistic borrowings from English into

Italian and they occur in the seventh session. Amy is playing with the *Happy Family* house. There are not enough beds to put the family members to sleep.

(3;4.13)

5.23 *CHI: perché non c' è l-o-s lett-o-s?
 why not there is the-M.SG-PL bed-M.SG-PL
 'why isn't there beds?'

*MOT: non c'è?
 'isn't there?'

*CHI: non c'è ancora de-i lett-s.
 not there is still some-M.PL bed-PL
 'there isn't more beds.'

*MOT: no, non ce ne sono degli altri lett-i
 no not there of them are some other bed-M.PL
 'no, there aren't more beds.'

The mother has just used the noun *letto* (*bed*) in the singular, and when Amy repeats the word, it appears she wants to use it in the plural but instead of taking the plural suffix from Italian she takes it from English. She does so twice, but interestingly she seems to use two slightly different morphological processes. In the first instance, she adds the plural marker *-s* to both the definite article and the noun *letto* that the mother has just used. This is exactly the type of morphological operation used in English. The use of *los* is also of interest because again it is a form that Amy (who has never been exposed to Spanish) cannot have heard in the input and hence is the result of a morphological operation that reveals a sophisticated degree of metalinguistic competence. The Italian masculine plural articles are *i* and *gli*. *Lo* is singular and only occurs in the singular in front of clusters and is much less frequent than the allomorphs *il* which is used in front of most consonants and *l'* used before vowels. However, *-o* is the most common marker for masculine/singular on nouns and adjectives and *la* is the feminine singular article used in front of all feminine nouns starting with a consonant, consonant clusters included. In fact, if we could design the grammar of a language it would make perfect sense to say that if the singular feminine definite article is *la* than the masculine allomorph should be *lo*. What Amy seems to be doing here is a morphological operation, involving knowledge of number and gender marking in Italian and number marking in English. She needs to use a masculine plural article, does not seem to be able to recall the target form and copes with this issue by taking the singular feminine article *la*, changing the feminine ending *-a* to the correspondent

masculine one *-o* and then adding the English plural marker *-s*.

In the second instance, she drops the singular masculine ending vowel *-o* and adds the English plural suffix. She seems to be using a morphological operation more akin to the way the plural is formed in Italian, where markers are substituted and not added. In Italian, bare stems are not allowed and content words never occur without endings, which need to be changed to express different grammatical meanings. In English, bare stems are allowed, singular nouns occur as bare stems and the plural is formed by adding the *-(e)s* suffix to those uninflected stems. Also, in the second instance the influence of English is evidenced by the use of the word *ancora*, a literal translation from the English *more*, whereas Amy should have said *più*. Compare *there are no **more** beds* versus *non ci sono **più** letti*.

The data presented here show that morphological overgeneralisations and intra-linguistic borrowings take place throughout the sampling period. The earliest instance in the samples is an overgeneralisation with the feminine plural marker *-e*, which is used with the unchangeable noun *frutta*. The same ending is used with another unchangeable noun, *moto*, in session eight. The only overgeneralisation with a verb form takes place in session eleven and concerns the conjugation of the irregular verb *potere* (*to be able to*). Here the first person plural marker *-iamo* is used with a stem that, in the present indicative, only occurs in the second person plural, which is never used throughout Amy's data. However, the stem *pot* also occurs in the infinitive and the imperfect. Although *potere* is never used in the imperfect in Amy's speech samples, the imperfect tense appears in the data from session three. The earliest intra-linguistic borrowing recorded occurs in session six and concerns the past participle ending *-ata*. With respect to the verbal domain, the remaining intra-linguistic borrowings concern the third person singular marker *-e* (3;7.21), the infinitive ending *-ire* (3;7.21), the present tense third person plural marker *-ono* (3;7.21) and the imperfect ending *-eva* (3;9.20). The only intra-linguistic borrowing with a noun marker concerns the masculine singular ending *-o* (3;9.20). Cross-linguistic borrowings revolve around the use of the plural marker *-s* (3;4.13). These target deviations relate to a range of bound morphemes both in the nominal and the verbal domain, but what they all have in common is that they show that the inflections in questions have been detached from stems and that Amy is aware of their grammatical meanings. The case of *-ono*, is particularly noteworthy, because the analysis of its use in obligatory contexts seems to

suggest that point of acquisition has not been reached yet for this morpheme by the end of the longitudinal study.

5.4.4 Copula forms

The results for the analysis of present tense copula forms are summarised in Table 5.10. Potential obligatory contexts for copula forms include all those constructions constituted by a null or overt subject, the copula and a predicate, be it an adjective, a deictic pronoun, a noun or a nominal infinitive, i.e., an infinitive used like a noun. What emerges from this analysis is that Amy's use of present tense copula forms is virtually errorless. Copulas are used in the third person singular, the third person plural and, to a lesser extent, the first person singular. However, the absence of tokens of other person-number combinations is not due to omission or agreement errors but to the absence of obligatory contexts for their use. The predominant use of third person forms is a consequence of the fact that, during the play sessions, Amy was frequently engaged in the identification or the description of objects, toys and pictures, as a result of her parents' attempt to elicit as much speech as possible from her.

TABLE 5.10 Proportion of present indicative copula *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	-	-	-	3/3
2;11.15	-	-	-	-	-	-
3;0.14	-	-	17/17	-	-	-
3;2.2	-	-	5/5	-	-	1/1
3;2.21	-	-	9/9	-	-	5/5
3;3.10	-	-	7/7	-	-	1/1
3;4.13	2/2	-	8/8	-	-	3/3
3;5.23	-	-	10/10	-	-	1/1
3;6.21	1/1	-	9/9	-	-	3/3
3;7.21	1/1	-	3/3	-	-	1/1
3;8.24	1/1	-	5/5	-	-	-
3;9.20	-	-	7/7	-	-	4/5
Total C/OC	5/5	-	80/80	-	-	22/23
%	100%	-	100%	-	-	96%

The first person singular occurs in the structures *sono stanca* (*I am tired*) (3;6.21) and *non sono stanca* (*I am not tired*) (3;7.21 and 3;8.24).

(3;6.21)

- 5.24 *MOT: racconti a Anna una storia? do you tell Anna a story?
*CHI: no. no.
*MOT: come no? no?
*CHI: sono stanca. I am tired.

(3;7.21)

- 5.25 *MOT: vuoi andare a letto? do you want to go to bed?
*CHI: non sono stanca. I am not tired.
*FAT: I think you are, Amy.

(3;8.24)

- 5.26 *CHI: io non sono stanca. I am not tired.
*MOT: non sei stanca. you are not tired.

Only on two occasions, the first person singular occurs in a different construction. Amy and her mother are playing with *Happy Family* and she clarifies that she wants to play the customer rather than the baker.

(3;4.13)

- 5.27 *MOT: lui è il pasticcere. he is the baker.
*CHI: sì. yes.
*MOT: e quindi? and so?
*CHI: io non sono. I am not.
*MOT: Amy, se vuoi fare questa tu, devi dire che vuoi i croissant. Amy, if you want to be this you need to say that you want the croissants.
*MOT: io faccio il pasticcere. I play the baker.
*MOT: tu fai questo. you play this.
*MOT: chiedi i croissant. ask for the croissants.
*CHI: no, questo sono io. no, I am this.
*MOT: tu sei quello, okay. you are that one, okay.

Throughout the recording period, there is only one error with present tense copula forms. This is a number deviation that, as it was observed with respect to lexical verbs,

occurs in a sentence where the third person plural copula is not required by a third person plural subject but by the use of two third person singular subjects.

(3;9.20)

- 5.28 *MOT: fai vedere questi a Anna. show Anna these.
 *MOT: questi non glieli hai fatti vedere. you have never showed her them.
 *MOT: chi te li ha regalati quelli? who gave those to you?
 *INV: un pesciolino e una macchinina no? a little fish and a car, right?
 *CHI: no è una balena e un coccodrillo
 no be[3SG.PRS] a whale and a crocodile
 ‘no, it is a whale and a crocodile.’

In all the remaining 22 contexts where third person plural subjects occur, Amy correctly provides the required third person plural copula forms. Hence, there is evidence that Amy can use third person singular and plural forms contrastively from the three years of age. The following are just some examples of contrastive use of singular and plural forms from the earliest stages of the study: *no, quelli non sono le scarpe* (*no, those are not the shoes* 2;10.18) and *è una torta* (*it is a cake* 3;0.14); *no sono queste le sponde* (*no, these are the sides* 3;2.2) and *questo è il cuscino del bambino* (*this is the child's pillow* 3;2.2); *sono dei girasoli* (*they are sunflowers* 3;2.21) and *questo è un fiore* (*this is a flower* 3;2.21); *lui è il pasticcere!* (*he is the baker!* 3;4.13)/*lei è piccola!* (*she is small!* 3;4.13) and *questi sono piccoli* (*these are small* 3;4.13). The above examples also show that, although the copula predominantly appears in structures where the subject is constituted by a deictic pronoun, Amy also uses it in different constructions. In such structures, most often the pronominal slot is left empty, but, when the pronoun serves an emphatic function, then it is phonetically realised (e.g., *lui è il pasticcere!* *he is the baker!* 3;4.13). One other device specific to Italian of which Amy makes use is subject inversion: *no sono queste le sponde* (*no, these are the sides* 3;2.2). There are also examples where the subject is constituted by a common noun or a proper noun: *Ava è troppo piccola* (*Ava is too small* 3;5.23) and *i piedi sono rossi* (*the feet are red* 3;5.23). In other instances, an interrogative pronoun appears in the subject position: *chi è?* (*who is it?* 3;0.14) and *che cos'è questo?* (*what is this?* 3;0.14). The predicative position is predominantly occupied by an adjective or a common noun but, on a few occasions towards the end of the study, proper nouns are also used: *è la Federica* (*it is Federica* 3;8.24); *è Anna* (*it is Anna* 3;8.24); *questa è Amy* (*this is Amy* 3;9.20).

The use of imperfect tense copula forms is equally limited to the first person singular and the third person singular and plural, with a predominance of third person singular forms. In total, there are 24 imperfect tense copula tokens, which are distributed as follows: 17 third person singular forms, four first person singular forms and three third person plural forms (Table 5.11). Similar to what was observed for present tense forms, the absence of the remaining person-number combinations is not determined by omission or commission errors, but by the absence of obligatory contexts for their production.

TABLE 5.11 Proportion of imperfect indicative copula *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	-	-	-	-
2;11.15	-	-	-	-	-	-
3;0.14	-	-	1/1	-	-	-
3;2.2	-	-	1/1	-	-	-
3;2.21	-	-	-	-	-	-
3;3.10	4/4	-	5/5	-	-	-
3;4.13	-	-	-	-	-	-
3;5.23	-	-	-	-	-	-
3;6.21	-	-	4/4	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	3/3	-	-	-
3;9.20	-	-	3/3	-	-	3/3
Total C/OC	4/4	-	17/17	-	-	3/3

This analysis shows that Amy can use both present tense and imperfect tense forms, although the imperfect forms are less frequent. The absence of omission errors indicates that Amy has knowledge of the obligatory nature of the copula from the beginning of the longitudinal study. With specific reference to the present tense, the data show that singular and plural forms are used contrastively at least from session three, which is when third person singular forms emerge in the samples. However, this is a conservative measure, because there are no errors in the previous two sessions to suggest that Amy cannot use singular and plural forms contrastively or has no knowledge of the third person singular form, especially considering that she uses the homophonous third person singular form of the auxiliary *essere* (Table 5.12) from the first session. Furthermore, copula forms appear in varied constructions where subjects are realised as DPs containing deictic pronouns, interrogative pronouns, personal pronouns, common nouns and proper nouns. The predicate

is realised by DPs containing adjectives, proper nouns and common nouns. The subject position is often left empty in accordance with the pro-drop status of Italian and personal pronouns are phonetically realised only for emphatic purposes. Therefore, the data suggest that Amy's knowledge of the copula *essere* is language specific and based on the abstract construction DP + copula + DP.

5.4.5 Other uses of *essere*

The verb *essere* also functions as an auxiliary in compound tenses and as a verbal predicate in the existential construction *c'è (there is)/ci sono (there are) + DP* and the general construction *DP + essere + PP*. In the latter construction, *essere* is followed by a preposition and assumes the meaning of *to be for sth/sb* (e.g., *è per te, it is for you*); *to belong to* (e.g., *questo è di Maria, this belongs to Maria*); *to be made of* (e.g., *il bicchiere è di plastica, the glass is made of plastic*); and *to be somewhere* (e.g., *dov'è la bacchetta magica?, where is the magic stick?*).

The results for other uses of *essere* are summarised in Table 5.12. Amy's use of *essere* as an auxiliary and a verbal predicate is accurate throughout the recording period. In these two other functions, the use of *essere* is not limited to first person singular and third person singular and plural contexts. There are also 12 occurrences of the first person plural form and, on one occasion, she produces a second person singular form. Again, this circumstance can be accounted for by the activities in which Amy was engaged in the course of the play sessions. If the cause of the bias towards third person copula contexts can be found in the fact that she often had to identify and describe objects, the use of the first person plural auxiliary form was determined by the fact that Amy was often asked to recount what she did with friends or family members at the crèche, or during a party or a summer holiday for example. Indeed, out of 12 occurrences of the first person plural, 11 are auxiliary forms in present perfect periphrases as shown in the following examples:

(3;0.4)

5.29 *CHI: ho fatto questo quando siamo andati a I did that when we went to
Skerries. Skerries.

(3;6.21)

5.30 *CHI: siamo andati alla fattoria. we went to the farm.

(3;9.20)

- 5.31 *CHI: ma non ci siamo bagnati. we did not get wet.
*CHI: siamo venuti a vedere barche. we came to see boats.

Only in one utterance *siamo* occurs as a verbal predicate (see section 5.4.1 passage 5.8).

The third person singular occurs in 43 out of 44 obligatory contexts. It appears 13 times in predicative constructions, 19 times in existential constructions and 11 times in constructions where *essere* is used as an auxiliary. The only error with the third person singular form is a finiteness deviation, which occurs in a present perfect periphrastic structure. Amy is reading a story from a *Hello Kitty* picture book with her mother.

(3;2.21)

- 5.32 *CHI: perché lo mangia in una padella? why does she eat it in a pan?
*MOT: perché è la padella per fare la torta. because it is the pan to make a cake.
*CHI: perché non è una scodella? why is it not a bowl?
*MOT: perché la torta non si fa nella scodella. because a cake cannot be baked in a bowl.
*MOT: questa si chiama tortiera. this is called a baking pan.
*CHI: perché? why?
*MOT: perché ci si fa la torta dentro. because it is for baking a cake.
*CHI: perché si sporcata un po' quando ha fatto una torta?
why herself dirtied a little when has made a cake?
'why did she get a little dirty when she made a cake?'

The present tense third person singular form is correctly provided in all the remaining 11 present perfect periphrases. With regard to the 13 verbal predicate forms, *essere* is mainly used with the locative meaning. Amy asks or says where something or somebody is as in the following examples: *dov'è la pressione?* (*where is the pressure* 3;0.14), *dov'è una scatola?* (*where is a box?* 3;2.21), *dov'è la bacchetta magica adesso?* (*where is the magic stick now?* 3;3.10), *dov'è papà, mamma?* (*where is dad, mum?* 3;3.10), *dov'è il mio tè, mamma* (*where is my tea, mum?* 3;5.23), *questo dov'è?* (*where is this?* 3;9.20), *è nel letto* (*it is in the bed* 3;0.14), *perché è alla mongolfiera?* (*why is she at the hot-air balloon?* 3;2.21), *perché lui non è qua?* (*why is he not here?* 3;2.21), *è a casa* (*she is at home* 3;6.21). *Essere* in its function of verbal predicate is also used with the meaning

of *to belong to* and *to be for*: *è anche mio* (it is also mine 3;2.21), *è per il pupazzo* (it is for the doll 3;0.14), *è per il bambino quando non cadono dal letto* (it is for the child when they do not fall off the bed 3;2.2).

TABLE 5.12 Proportion of present indicative auxiliary *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	3/3	-	-	-
2;11.15	-	-	-	-	-	-
3;0.14	-	-	5/5	1/1	-	2/2
3;2.2	-	-	2/2	1/1	-	1/1
3;2.21	-	-	5/6	-	-	4/5
3;3.10	1/1	-	4/4	-	-	-
3;4.13	1/1	-	-	-	-	1/4
3;5.23	-	-	4/4	-	-	1/1
3;6.21	-	-	3/3	1/1	-	1/1
3;7.21	-	-	5/5	-	-	3/3
3;8.24	1/1	1/1	2/2	2/2	-	-
3;9.20	2/2	-	10/10	7/7	-	3/3
Total A/OC	5/5	1/1	43/44	12/12	-	16/20
%	100%	100%	98%	100%	-	80%

As for the present tense third person plural forms, out of 20 obligatory contexts, Amy provides the required third person plural form 16 times. *Essere* is never used as an auxiliary in the third person plural: out of 16 occurrences it is used nine times as a verbal predicate and seven times in the existential construction *ci sono*. As a verbal predicate, *essere* is used with the meaning of *to be in a place* and *to belong to* as in the following examples: *sono qua* (they are here 3;0.14), *sono del dottore* (they belong to the doctor 3;0.14), *sì, sono qua dentro* (yes, they are inside here 3;2.2), *perché sono un po' qua sulla faccia?* (why are they a little here on the face? 3;2.21). There is only one agreement error, which occurs in the fifth session: *dov'è le scarpe di vernice?* (where is the patent leather shoes? 3;2.21). The structure in question does not appear before in the speech samples with a plural subject. It is only two months later that Amy uses it again and correctly produces the required third person plural form: *dove sono i miei croissant?* (where are my croissant? 3;4.13). The remaining three agreement errors happen with the existential construction *ci sono*, which is discussed later in this section.

The first person singular is always used in a target-like fashion. There are five

tokens, of which three are verbal predicates and two auxiliaries. As a verbal predicate, this person-number combination only occurs with the locative meaning: *sono al Nicky Nok* (*I am at the Nicky Nok* 3;3.10), *qui sono in treno* (*here I am in the train* 3;9.20), *dove sono?* (*where am I?* 3;9.20). As an auxiliary, it is used in the following utterances: *mi sono fatta male* (*I have hurt myself* 3;4.13) and *sono andata al parchetto* (*I have gone to the little park* 3;8.24). There is also some evidence of contrastive use of first person singular versus first person plural: *sono andata al parchetto* (3;8.24) and *l'ha detto quando siamo andati la fattoria* (3;8.24). The second person singular only occurs once. Amy tells her mother that her name is Fabi, however she does not provide the required past participle inflection *-ata*.

(3;8.24)

- 5.33 *CHI: tu sei chiam-are Fabi.
 you be[2SG.PRS] call-INF Fabi.
 ‘you are to call Fabi.’
 *MOT: io sono Fabi sì.
 I be[1SG.PRS] Fabi yes
 ‘I am Fabi, yes.’

The existential construction *c'è/ci sono*, occurs 19 times in the singular form and seven times in the plural form. While the third person singular *c'è* appears from the beginning of the study and is used in all the obligatory contexts, the plural construction *ci sono* only appears from the fifth session and is used in seven out of ten obligatory contexts. However, the late appearance of the plural construction *ci sono* is likely determined by the absence of obligatory contexts for its use before session five. Indeed, prior to that, with respect to this construction, there are no instances in which Amy omits the third person plural verb *sono* or provides the third person singular verb *è* with a third person plural subject. There is no reason to assume that Amy cannot use this construction contrastively before the fifth session, especially if one takes into account that there is evidence of contrastive use of third person singular and plural forms for the verbal predicate *essere* from the third session, which is when the third person plural form appears in the samples for the first time. Furthermore, Amy uses the homophonous third person plural copula from the beginning of the study. However, it is from the fifth play session that there is clear evidence of contrastive use of singular and plural forms with respect to the construction in question as shown in the following examples: *ci sono dei fiori su quello di Hello Kitty* (*there are some flowers on the Hello Kitty's one* 3;2.21), *ci sono dei girasoli su quelli della*

nonna (there are some sunflowers on the grandmother's one 3;2.21), *perché ci sono tanti* (why are there so many? 3;2.21) and *perché c'è un po' di farina qua e un po' là?* (why is there a bit of flour here and a bit there? 3;2.21).

There are three agreement errors where Amy produces a third person singular form in contexts where a third person plural form is required and they all occur in the seventh session. In only one instance, the agreement error takes place in a sentence where the plural subject is an Italian noun.

(3;4.13)

5.34 *CHI: non c' è delle scale!
not there be[3SG.PRS] some stairs
'there is no stairs!'

*MOT: non ci sono le scale, Amy!
not there be[3PL.PRS] the stairs Amy
'there are no stairs, Amy!'

In the remaining two occurrences, the third person plural subject is the already discussed bilingual blend consisting of an Italian stem and an English inflection (*perché non c'è los letto?* and *non c'è ancora dei letts* 3;4.13). It seems that these agreement errors can be discarded as a performance effect for two reasons. Firstly, there is evidence of contrastive use of the existential construction in the Amy's earlier speech samples. Secondly, two times out of three agreement deviations occur in utterances where she has problems retrieving the target lexical forms.

In the imperfect tense of *essere*, obligatory contexts only occur for third person forms (Table 5.13). Out of 14 contexts the required imperfect form is provided 13 times. The 13 forms are divided into eight singular forms and five plural forms. The eight singular tokens are distributed as follows: two verbal predicates with the meaning of *to be in a place*, one auxiliary and five existential constructions. In the plural, *essere* is never used as an auxiliary, but the five plural forms include one predicate with the meaning of *to be in a place* and four existential constructions. Predicative constructions appear when Amy is 3;3.10. There is evidence of contrastive use of singular and plural forms.

(3;3.10)

5.35 *CHI: ma dov' era Valerio?
but where be[3SG.IPFV] Valerio?
'but where was Valerio?'

(3;5.23)

- 5.36 *CHI: le persone.
 'the people.'
 *MOT: quali persone?
 'which people?'
 *CHI: che erano sotto
 who be[3PL.IPFV] underneath
 'who were underneath.'

(3;8.24)

- 5.37 *CHI: no Sarah era al piano di sopra.
 no Sarah be[3SG.IPFV] to the floor of above
 'no Sarah was upstairs.'

The only target deviation is an omission error and it occurs in a sentence that is a partial repetition of Amy's mother's utterance. They are looking at photos. The mother says her youngest daughter Ava was on a little table and Amy asks why.

(3;9.20)

- 5.38 *MOT: Ava era sul tavolino. Ava was on the table.
 *CHI: perché Ava sul tavolino? why Ava on the little table?

TABLE 5.13 Proportion of imperfect indicative auxiliary *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	-	-	-	-
2;11.15	-	-	-	-	-	-
3;0.14	-	-	1/1	-	-	-
3;2.2	-	-	-	-	-	-
3;2.21	-	.	-	-	-	-
3;3.10	-	-	1/1	-	-	-
3;4.13	-	-	-	-	-	-
3;5.23	-	-	-	-	-	1/1
3;6.21	-	-	-	-	-	-
3;7.21	-	-	2/2	-	-	1/1
3;8.24	-	-	4/4	-	-	-
3;9.20	-	-	0/1	-	-	3/3
Total A/OC	-	-	8/9	-	-	5/5

Essere as an auxiliary is only used once in the imperfect tense. Talking about a visit to Dublin zoo, the mother asks Amy to explain why they did not manage to see the wolf and Amy replies that *he was hidden in his cave*:

(3;0.14)

5.39 *CHI: era nascosto nella sua grotta.

Existential constructions appear in Amy's speech samples for the first time when she is 3;7.21 and there is evidence for contrastive use of singular and plural forms from then onwards.

(3;7.21)

5.40 *CHI: la mamma di Wioletta non c'era.
the mother of Wioletta not there be[3SG.IPFV]
'Wioletta's mum wasn't there.'

*CHI: c'era anche Caitriona.
there be[3SG.IPFV] also Caitriona
'there was also Caitriona.'

*CHI: nel negozio dove c'erano
in the shop where there be[3PL.IPFV]
le lampade di Peppa Pig.
the lights of Peppa Pig
'in the shop where there were Peppa Pig's lights.'

(3;8.24)

5.41 *CHI: c'era una bambina con il vestito.
there be[3SG.IPFV] a child with the dress
'there was a child with the dress.'

*CHI: no, non c'era Ava.
no not there be[3SG.IPFV] Ava
'no, Ava was not there.'

*CHI: perché c'erano delle alghe.
because there be[3PL.IPFV] some seaweeds
'because there were some seaweeds.'

(3;9.20)

5.42 *CHI: allora se c'erano io volevo comprare uno
then if there be[3PL.IPFV] I wanted to buy one
che erano bellissimi.
that were beautiful
'then if there were I wanted to buy one because they were very beautiful.'

The data presented here suggest that Amy has knowledge of the obligatory nature of the verbal predicate and the auxiliary *essere* from the beginning of the longitudinal study. The data also provide evidence of contrastive use of plural and singular forms from the age of 3;0.14. Predicative constructions cover a variety of meanings, dummy subjects never appear and structures displaying VS word order are used. Therefore, Amy's knowledge of

the verbal predicate *essere* appears to be based on the abstract construction DP + VP + PP.

5.4.6 Auxiliary and verbal predicate *avere*

The results for *avere* are summarised in Table 5.14. Potential obligatory contexts for *avere* include periphrastic structures where it functions as an auxiliary and the general construction DP + *avere* + DP where it functions as a verbal predicate and assumes the meaning of *to possess*. The use of the present tense of *avere* is errorless, as there are no omission or commission errors in any of the Amy's files. It is predominantly used as an auxiliary: out of the 68 obligatory contexts, 42 are contexts for the auxiliary *avere* in present perfect periphrases and 26 for *avere* as a verbal predicate. With regard to *avere* as an auxiliary, all the person-number combinations are represented in the samples, with the exception of the second person plural. The auxiliary *avere* is used 12 times in the first person singular, seven times in the second person singular, 13 times in the third person singular, eight in the first plural and two in the third plural. The singular forms of the paradigm are used from the beginning of the study and in combination with several verb types, whereas the plural ones appear towards the end of the first half of the sampling period and with fewer verb types. More precisely, the second person singular is used from the first session.

TABLE 5.14 Proportion of present indicative auxiliary *avere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	1/1	1/1	-	-	-
2;11.15	1/1	-	2/2	-	.	-
3;0.14	2/2	-	1/1	-	-	-
3;2.2	1/1	-	-	-	-	-
3;2.21	2/2	-	7/7	-	-	1/1
3;3.10	2/2	-	1/1	2/2	-	-
3;4.13	-	-	1/1	1/1	-	-
3;5.23	-	2/2	2/2	-	-	-
3;6.21	2/2	2/2	2/2	2/2	-	2/2
3;7.21	1/1	-	4/4	2/2	-	1/1
3;8.24	1/1	2/2	1/1	3/3	-	1/1
3;9.20	3/3	-	5/5	4/4	-	-
Total A/OC	15/15	7/7	27/27	14/14	-	5/5

(2;10.18)

5.43 *CHI: la gonna l'hai tagliata? the skirt have you cut it?

*MOT: la gonna l'ho tagliata sì. the skirt I have cut yes.

In the remaining instances, it occurs with four more verb types: *capire* (to understand), *vedere* (to see), *dire* (to say) and *fare* (to do). The third person singular equally appears from the first session. Amy uses it in a conversation where the mother tries to make her recount an accident that had happened to a friend from the crèche the year before.

(2;10.18)

5.44 *MOT: cosa le era successo? what had happened to her?

*CHI: ha battuto la testa. she has banged the head.

It is used with ten more verb types: *rompere* (to break), *fare* (to do), *saltare* (to jump), *tagliare* (to cut), *chiudere* (to close), *tenere* (to keep), *cantare* (to sing), *dire* (to say), *distruggere* (to destroy) and *pungere* (to sting). The first person singular appears for the first time in her data in the second session. Amy is stirring sugar into her mother's cup of coffee and spills some coffee over the table.

(2;11.15)

5.45 *MOT: è uscito un pochino. a little bit has been spilled.

*MOT: puliamo? shall we clean up?

*CHI: ho fatto un danno! I have made a damage.

It occurs with six more verb types: *mangiare* (to eat), *pestare* (to step on), *vedere* (to see), *giocare* (to play), *sentire* (to hear) and *prendere* (to take). The first and the third person plural appear in the ninth session. The former is used with four verb types: *vedere* (to see), *fare* (to do), *togliere* (to take away) and *comprare* (to buy). The latter appears in present perfect periphrases with the verbs *aiutare* (to help) and *prendere* (to take). Therefore, it is from session nine that there is evidence of contrastive use of person and number with respect to both first and third person forms. Amy is recounting a visit to a farm with her mother.

(3;6.21)

5.46 *CHI: abbiamo visto dei maiali. we have seen some pigs.

*MOT: non c'erano solo i maiali. there were not only pigs.

- *MOT: cosa hai visto anche? what have you also seen?
 *MOT: i maiali e poi? pigs and then?
 *CHI: e poi ho visto le pecore. and then I have seen sheep.

Amy and her mother are reading the story of *Little Red Riding Hood*. Amy's mother changes some details of the story to make Amy intervene and correct her. Here she has just said that the hunter had cut off the Wolf's foot.

(3;6.21)

- 5.47 *MOT: cosa ha fatto, Amy, il cacciatore? what has the hunter done, Amy?
 *MOT: ha tagliato un piede al lupo. he has cut off the Wolf's foot.
 *CHI: no ha tagliato la testa! no, he has cut off the head!
 *MOT: povero lupo! poor wolf!

After that, Amy looks at a picture where the Wolf is depicted with his eyes shut and asks *perché ha chiuso gli occhi?* (*why has he closed his eyes?*). Later in the same session Amy and her mother are reading the story of *The Big Enormous Turnip*.

(3;6.21)

- 5.48 *MOT: e perché loro non lo mangiano? and why they do not eat?
 *CHI: perchè non hanno aiutato. because they have not helped.
 *MOT: sì, non hanno aiutato a fare il pane. yes, they have not helped make the bread.

A quite complex construction appears in the second last session. Amy and her mother are talking about a trip to a farm where Amy went to with her Italian grandfather and Amy's mother addresses her younger daughter Ava to say she was not invited because she was too young.

(3;8.24)

- 5.49 *MOT: non ti hanno preso per andare alla fattoria. they have not taken you to go to the farm.
 *CHI: perché non l'hanno presa? why have they not taken her?

The mother addresses Ava and uses the second person singular direct object clitic pronoun *ti* (*you*). Amy asks about Ava and uses the third person singular direct object clitic pronoun *la* (*her*), accordingly she makes the past participle agree in gender and number with it. The agreement between the past participle and the direct object pronoun is only compulsory

with third person pronouns. Amy's mother, who uses the second person singular pronoun *ti*, uses the default masculine singular past participle *preso* whereas Amy, who uses the third person singular *la*, correctly makes the past participle agree in gender and number with the pronoun.

With reference to the use of *avere* as a verbal predicate, out of the 26 occurrences 14 are third person singular forms, three first person singular forms, six first person plural forms and three third person plural forms. The plural persons emerge earlier than in constructions where *avere* is used as an auxiliary. The third person plural is attested in Amy's speech samples from the fifth play session and the first plural from the sixth play session. There is evidence for contrastive use of singular and plural with respect to both first and third person forms. At the beginning of session five (3;2.21), Amy and her mother are reading a story of *Hello Kitty*. Amy looks at the pictures and every now and then asks something. She correctly uses the third person singular when she asks questions about *Hello Kitty* (e.g., *perché ha il pigiama?*, *why has she got pyjamas*; *perché non ha pantaloni?*, *why has she not got trousers?*) and the third person plural when she asks a question about *Hello Kitty* and her grandmother (e.g., *perché hanno gli occhiali?*, *why have they got sunglasses?*). In the sixth session, Amy and her mother are looking at various pictures taken the previous Halloween.

(3;3.10)

- | | | |
|------|---|---|
| 5.50 | *CHI: perché non abbiamo più una zucca? | why have we not got a pumpkin anymore? |
| | *MOT: perché la zucca dopo un po' marcisce. | because the pumpkin goes bad after a while. |

(3;3.10)

- | | | |
|------|--|-----------------------------------|
| 5.51 | *CHI: perché Chica aveva le maniche corte? | why had Chica got short sleeves? |
| | *MOT: perché c'era caldo quel giorno. | because it was hot that day. |
| | *CHI: ma io non ho le maniche corte. | but I have not got short sleeves. |

(3;3.10)

- 5.52 *CHI: perché io ho quelle scarpe? why have I got those shoes?
*MOT: erano le scarpe che ti andavano bene they were the shoes that fit
l'anno scorso. you well last year.
*CHI: ma, mamma, non se [: ce] l'abbiamo but, mum, have we not got
più? them anymore?

The results for the imperfect tense are summarised in Table 5.15, which shows that only first and third person singular forms appear with a predominance of third person forms over first person forms and predicative forms over auxiliary forms. Out of 15 imperfect tense forms, *avere* is used as a verbal predicate 12 times with 10 third person singular forms and two first person singular forms and as an auxiliary three times with two third person singular forms and one person singular form. However, in the absence of obligatory contexts for other person-number combinations, it is difficult to say whether or not other verbal persons do not appear in Amy's speech samples because they have not been learned yet or because contexts for their production do not arise. Amy only makes two errors with the imperfect tense of *avere*, which occur in the same session. The first one is a finiteness error. Amy and her mother are looking at photographs taken during a summer holiday in France. Amy's mother recalls finding a pigeon's nest on the balcony of their holiday home and asks Amy what happened to the eggs that were in the nest. In her answer, Amy first omits the auxiliary and, subsequently, moves from the pluperfect to the present perfect.

(3;3.10)

- 5.53 *MOT: cosa aveva fatto sul balcone? what had he made on the
balcony?
*MOT: ti ricordi cosa aveva fatto? do you remember what he
had made?
*CHI: fatto così. done so.
*MOT: cos'è questo? what's this?
*MOT: cosa c'era lì dentro? what was inside there?
*CHI: il uovo. the egg.
*MOT: le uova. the eggs.
*MOT: perché aveva fatto? because he had made?
*CHI: il nido. the nest.
*CHI: e poi ha fatto crack! and then it has done crack!

The second error is an agreement deviation, however, the very same form is used in a

target-like fashion within the same stretch of conversation.

(3;3.10)

5.54 *CHI: Valerio!

*MOT: sì, questo è Valerio.
'yes, this is Valerio.'

*CHI: av-evo fatto una foto di Valerio.
have-1SG.IPFV done a photo of Valerio
'I had taken a picture of Valerio.'

*CHI: e qua av-evi i leggings.
and here have-2SG.IPFV the leggings
'and here you had leggings.'

*MOT: qua avevi i leggings, Amy, sì.
'here you had leggings, Amy, yes.'

TABLE 5.15 Proportion of imperfect indicative auxiliary *avere* in obligatory context

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	1/1	-	-	-
2;11.15	-	-		-	-	-
3;0.14	1/1	-	1/1	-	-	-
3;2.2	-	-	-	-	-	-
3;2.21	-	-	-	-	-	-
3;3.10	2/3	-	6/7	-	-	-
3;4.13	-	-	-	-	-	-
3;5.23	-	-	1/1	-	-	-
3;6.21	-	-	1/1	-	-	-
3;7.21	-	-	1/1	-	-	-
3;8.24	-	-	1/1	-	-	-
3;9.20	-	-	-	-	-	-
Total A/C	3/4	-	12/13	-	-	-

There is evidence of contrastive use of first person singular and third person singular in the following examples:

(3;3.10)

5.55 *CHI: av-evo i pantaloni.
have-1SG.IPFV the trousers
'I had trousers.'

(3;3.10)

5.56 *CHI: av-eva i pantaloni Anna.
have-3SG.IPFV the trousers Anna
'Anna had trousers.'

The data presented here show that the paradigm of the present tense of *avere* is almost fully acquired by age 3;6.21. The only person-number combination that does not reach point of acquisition is the second person singular, but this possibly happens because of the absence of obligatory contexts over three consecutive sessions.

5.4.7 Plural noun inflections

The use of plural noun markers is accurate throughout the longitudinal study. Out of 100 obligatory contexts for noun plural inflections there are four target-deviant forms, of which two are cross-linguistic borrowings and only two agreement errors.

TABLE 5.16 Proportion of plural noun inflections in obligatory contexts

Age	a-e	o-i	e-i	a-i
2;10.18	3/3	2/2	-	-
2;11.15	1/1	2/2	-	-
3;0.14	3/3	-	-	-
3;2.2	4/4	-	2/2	-
3;2.21	3/3	-	7/7	-
3;3.10	6/6	1/1	3/3	-
3;4.13	8/8	2/4	2/4	-
3;5.23	4/4	-	1/1	1/1
3;6.21	3/3	2/2	6/6	-
3;7.21	3/3	1/1	1/1	-
3;8.24	3/3	2/2	-	-
3;9.20	7/7	7/7	2/2	4/4
Total I/OC	48/48	19/21	24/26	5/5
%	100%	90%	92%	100%

With reference to the *-a* → *-e* group, the plural marker occurs in 48 out of 48 obligatory contexts (Table 5.16) and is used with 34 different noun types (Table 5.17). The productive use of the marker in question is not only shown by the lack of agreement errors and high number of different noun types with which it is used but also by the non-target forms in which it appears. These are the overgeneralisations *frutte* (fruits 3;0.14) and *mote*

(*motorbikes* 3;5.23) that have been discussed earlier (see section 5.4.3).

As for the $-o \rightarrow -i$ group, the $-i$ marker appears with 17 different noun types (Table 5.17) and in 19 out of the 21 obligatory contexts (Table 5.16). There are two instances of cross-linguistic borrowing, where Amy substitutes the $-i$ ending with the English plural marker $-s$, which she adds to the Italian stem *lett-* and the Italian singular noun *letto*. They have equally been discussed in section 5.4.3. Plural nouns belonging to the $-e \rightarrow -i$ group appear in Amy's spontaneous speech samples from the fourth play session. The $-i$ marker appears with 13 different noun types and is used in 24 out of 26 obligatory contexts. The two target-deviant forms are agreement errors, both occurring in the same session and with the same noun type.

TABLE 5.17 Appearance of plural noun inflections with different noun types

Age	a-e	o-i	e-i	a-i
2;10.18	2	2	-	-
2;11.15	-	2	-	-
3;0.14	3	-	-	-
3;2.2	3	-	2	-
3;2.21	2	-	4	-
3;3.10	1	1	1	-
3;4.13	7	2	-	-
3;5.23	4	-	1	1
3;6.21	2	1	3	-
3;7.21	3	1	1	-
3;8.24	1	2	-	-
3;9.20	6	6	1	2
Total	34	17	13	3

(3;4.13)

- 5.57 *MOT: ti ricordi che favola è questa?
 you remember which story be[3SG.PRS] this
 'do you remember what story is this?'
 *CHI: gli elefant-e.
 the[M.PL] elephant-M.SG
 'the elephant.'

(3;4.13)

- 5.58 *MOT: è più grosso l' elefante o la lepre?
 is more big the elephant or the hare

‘is it bigger the elephant or the hare?’
 *CHI: gli elefant-e.
 the[M.PL] elephant-M.SG
 ‘the elephant.’

However, it seems more likely that the error is with the number of the definite article rather than the noun, as Amy is speaking of one single elephant. In the elicitation task, administered when she was 2;11.15, Amy had correctly provided the plural of the same noun. Plural nouns belonging to the *-a* → *-i* group appear last in her speech samples. The plural marker *-i* appears with three different noun types and is supplied in all the five obligatory contexts.

5.5 The elicitation task

The elicitation task was administered at the end of the second play session, when Amy was 2;11.15. The results for the elicitation task are summarized in Table 5.18, which also presents the occurrences of the same morphemes in the spontaneous speech samples collected in the first two sessions. Amy performed quite poorly throughout the task. For example, out of four probes she never provided the third person singular copula *è*. With respect to the third person plural copula *sono*, Amy provided the target answer only once. However, in her spontaneous speech samples, present tense copula forms are never omitted in obligatory contexts. Her poor performance may be accounted for by the fact that the task was perhaps not fully understood. For instance, although in the prompt for the copula forms the first slide was shown with the aim of creating a context for the production of the target morpheme, there was no actual need for Amy to produce a full sentence in her answer. Indeed, seven times out of eight her answer did not include the copula, as shown in the example below.

5.59 Probe	Target answer	Child's answer
Questi fiori sono gialli, ma questo...	<i>è</i> arancione	arancione
These flowers are yellow, but this...	<i>is</i> orange	orange

Amy performed a little better with the plural noun probes. Each probe was equally constituted by two slides, with the first one aimed at creating a context for the production of the target suffix. The majority of the non-target answers were due to the misidentification or non-recognition of the items depicted in the pictures. Out of 12 probes, Amy provided a

non-target answer five times, however, only in two instances the non-target answers were constituted by ungrammatical forms. For example, one of the probes for the $-a \rightarrow -e$ noun group showed oranges, but Amy thought that they were mandarins. The Italian word for *oranges* is *arance* and belongs to the $-a \rightarrow -e$ group, but the word for *mandarins* is *mandarini* and belongs to the $-o \rightarrow -i$ group. Hence, her response did not provide the target morpheme and could not be included in the count of the correct answers. Similarly, for the $-o \rightarrow -i$ group, out of three non-target answers there was only one grammatical error, as Amy failed to produce the plural marker $-i$ for a picture showing four hippopotamuses and said *ippopotamo*. The other two non-target answers were caused by the non-identification of the items shown: in one case she did not supply any answer, in the other she produced the singular noun *cioccolato* (*chocolate*), where the target was *gelati* (*ice creams*). An actual target-deviant answer was also produced for the $-e \rightarrow -i$ group, where Amy said *le tigre* (*the tiger*) instead of *le tigri* (*the tigers*). This error could be interpreted as an agreement deviation, where the singular form *tigre* is provided in place of the plural form *tigri*. A more convincing explanation is that it constitutes an instance of intra-linguistic borrowing where the most frequent feminine plural noun marker $-e$ is borrowed into the declension of a noun following a less frequent ending vowel pattern. This interpretation takes into account the fact that Amy uses the plural article *le* as well as the fact that she is talking of two tigers.

TABLE 5.18 Responses for the elicitation task in Italian

Grammatical morpheme	Score	S1	S2
third person singular copula	0/4	-	-
third person plural copula	1/4	3/3	-
plural noun inflection <i>a-e</i> group	3/4	3/3	1/1
plural noun inflection <i>o-i</i> group	1/4	2/2	2/2
plural noun inflection <i>e-i</i> group	3/4	-	-
third person singular <i>are</i> group	3/3	1/1	2/2
third person plural <i>are</i> group	2/3	1/1	-
third person singular <i>ere</i> group	3/3	-	3/3
third person plural <i>ere</i> group	3/3	-	-
third person singular <i>ire</i> group	1/3	-	1/1
third person plural <i>ire</i> group	0/3	-	-

With regard to present tense third person endings, Amy's modest performance was

possibly determined by task demands. Out of six non-target answers, in three cases Amy used the present continuous instead of the present simple and in three other cases she did not answer at all. Despite the attempt to create a context for the production of a present indicative form, there was no explicit reason for not using the present continuous. Present continuous forms could not be included in the count of the correct answers because they do not bear the same morphemes as the verbal forms tested in the task. It is worth pointing out that for *leggere* (to read) and *piangere* (to cry), Amy's answers were *leggiono* and *piangiono* instead of *leggono* and *piangono*. These are overgeneralisation errors which, therefore, suggest productive use of inflections. *Leggere* and *piangere* have a regular paradigm in the present indicative, but the *g* of the stem is pronounced [g] in the first person singular and the third person plural and [dʒ] in the remaining person-number combinations. The stem does not change as for irregular verbs, but the alternation between the voiced velar stop [g] and the voiced palate-alveolar affricate [dʒ] is caused by the alternation between the vowels *o* and *e/i* of the endings. The use of the voiced palate-alveolar affricate instead of the voiced velar stop shows that the third person plural forms in question are not passively repeated from the input, but they are created on the basis of a morphological operation, where the third person plural marker *-ono* is added to the stem. The stem is likely derived from the third person singular, which has been shown to be the first verbal person usually learned by monolingual acquirers of Italian (Pizzuto & Caselli, 1992; Leonard *et al.*, 2002). These forms were included in the count of the correct answers as they provide the target morpheme *-ono*.

5.6 The English spontaneous data

5.6.1 Present indicative person-number combinations

The results for the present indicative person-number combinations are summarized in Tables 5.19, 5.20 and 5.21. As explained in the methodology chapter, the analysis of the acquisition of the paradigm of the present indicative in English included not only the occurrences of the third person singular marker *-(e)s* but also of personal pronouns, which can be regarded as inflection equivalent items, because in English they function as agreement markers.

Two person-number combinations, the first person singular and the second person singular, are used from the beginning of the sampling period. Throughout the study, the first person singular is used in 111 out of 112 obligatory contexts (Table 5.21) and with 18 verb types (*want, know, colour, need, love, run, think, show, make, take, can, go, do, like, drink, fix, remember, put*). It appears with a maximum of ten verb types within the same session (Table 5.19). In one case, Amy uses the Italian first person subject pronoun *io* instead of *I*. She wants to build a turtle with her father who asks who should build it.

(3;2.21)

5.60 *FAT: do you want me to make it or will you make it?

*CHI: io make it!

This can be regarded as an instance of morphological cross-linguistic borrowing, where an equivalent morpheme is borrowed from the one language into the other. The second person singular appears in all the 22 obligatory contexts (Table 5.21) and with nine verb types (*help, see, do, can, know, like, remember, draw, want*). It is used with a maximum of five verb types within the same session (Table 5.19).

TABLE 5.19 Appearance of person-number combinations with different verb types

MLU	AGE	1ps	2ps	3ps	1pp	2pp	3pp
2.9	2;10.18	3	2				
2.4	2;11.15	1	1	1			
2.8	3;0.14	6	1	2			
3.8	3;2.2	4	2	3	2		1
3.1	3;2.21	4		1	1		2
3.1	3;3.10	8		3			1
3.1	3;4.13	7	5	2	4		2
3.6	3;5.23	10	3	1	3		2
	3;6.21						
	3;7.21						
	3;8.24						
3.7	3;9.20	7	2	6	5		2

Blue font highlights the appearance of new person-number combinations

The third person singular marker *-(e)s* is used for the first time in the second session. It appears in 46 out of 48 obligatory contexts (Table 5.21) and with 12 verb types (*go, do, sleep, live, play, know, like, mean, take, stop, sail, need*). It occurs with a maximum of six verb types within the same session (Table 5.19). In only two instances, bare forms

are used in a third person singular context (Table 5.20). The first instance takes place in the second session. Amy is playing with her father, spelling words with a toy alphabet. Suddenly, they hear Ava cry.

(2;11.15)

5.61 *FAT: why is Ava crying?

*CHI: because **she don't** want to go and change her nappy.

*FAT: she doesn't want to change her nappy?

*CHI: no.

TABLE 5.20 Proportion of inflected and bare forms in third person singular contexts

Age	Inflected forms	Bare forms	Obligatory contexts
2;10.18	-	-	-
2;11.15	3	1	3/4
3;0.14	6	-	6/6
3;2.2	12	-	12/12
3;2.21	8	-	8/8
3;3.10	3	1	3/4
3;4.13	7	-	7/7
3;5.23	1	-	1/1
3;6.21			
3;7.21			
3;8.24			
3;9.20	6	-	6/6

The second instance occurs in the sixth play session. Amy is chatting with her father about her little sister Ava, who often does not return Amy's card game to her after playing with it.

(3;3.10)

5.62 *CHI: Ava plays the card game but she doesn't give it back to me.

*FAT: she doesn't give it back to you?

*CHI: because mummy +...

*CHI: because Ava does this +...

*CHI: lie in your bed and mummy's bed.

This passage also shows that Amy correctly inflects the third person singular with three different verb types in her previous utterances.

The first person plural and the third person plural appear for the first time in Amy's speech samples in the fourth session. The first person plural occurs in all 32 obligatory contexts (Table 5.21) and with eight verb types (*need, can, put, get, build, make, do, go*). It is used with a maximum of five verb types within the same session (Table 5.19). The third person plural appears in all the 14 obligatory contexts (Table 5.21) and with eight verb types (*live, want, fall, put, live, go, can, look*). It occurs with a maximum of two verb types within the same session (Table 5.19). Just like in Italian, the second person plural does not appear in the samples.

TABLE 5.21 Proportion of person-number combinations in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	3/3	1/1	-	-	-	-
2;11.15	1/1	1/1	3/4	-	-	-
3;0.14	17/17	1/1	6/6	-	-	-
3;2.2	13/13	3/3	12/12	6/6	-	1/1
3;2.21	10/11	-	8/8	1/1	-	3/3
3;3.10	13/13	-	3/4	-	-	1/1
3;4.13	12/12	6/6	7/7	6/6	-	2/2
3;5.23	20/20	5/5	1/1	12/12	-	5/5
3;6.21	-	-	-	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	-	-	-	-
3;9.20	22/22	5/5	6/6	7/7	-	2/2
Total	111/112	22/22	46/48	32/32	-	14/14
%	99%	100%	96%	100%	-	100%

The data presented here show that the use of present tense person-number combinations is accurate because there are no agreement deviations in the use of personal subject pronouns and they appear in all the obligatory contexts that arise across the sessions. In one case, the first person singular pronoun is substituted with the Italian equivalent. The third person singular marker is equally used with accuracy. Despite being omitted once in session two and once in session six, throughout the study it is provided in 96% of obligatory contexts. It reaches point of acquisition in the samples by session three when Amy is 3;0.14.

5.6.2 Simple past

With respect to the simple past, Amy's behaviour seems more revealing of what she knows about inflectional morphology. The appearance of past tense forms is summarised in Table 5.22. There are 25 verbs used in the simple past, 19 of which are irregular (*know, do, eat, hurt, see, take, make, find, go, put, come, break, loose, get, sting, swim, give, bring, buy*). However, the distinction between regular and irregular verbs can only be made for affirmative sentences, because all verbs follow the same morphological pattern and use *did* as a tense marker in negative and interrogative sentences. Two of the 19 irregular verbs, *hurt* and *know*, only occur in negative sentences. Ten of them (*do, eat, see, make, find, come, break, loose, get, sting*) are exclusively used in the correct past forms. The picture is more complex for the remaining seven verbs. For four of them (*give, bring, buy, swim*), Amy only produces target-deviant forms.

TABLE 5.22 Appearance of past tense forms

Age	-ed	negative forms	overgeneralisations	intra-linguistic borrowings	irregular forms
2;10.18					4
2;11.15		2		1	2
3;0.14	2				5
3;2.2	1	3			2
3;2.21		1			5
3;3.10				1	
3;4.13					6
3;5.23					5
3;9.20	3	2	1	5	16

One of such ungrammatical forms is an overgeneralisation and it occurs with *to swim* in the last play session. Amy's father asks her to tell what they did during their summer holiday in France. They are at the point where they went on a day trip to Nice and went swimming in the sea.

(3;9.20)

5.63 *FAT: when you were swimming in the sea did you have something to hold on to?

*FAT: what did you use to swim?

*CHI: a ring.

*FAT: a ring.

*FAT: very good.

*CHI: and then I **swimmed** like this.

*CHI: that's what I did.

*FAT: that's what you did.

As to the remaining three irregular verbs that only appear in target-deviant forms (*give, bring, buy*), Amy places *did* before the verb in contexts where it does not serve an emphatic purpose. This use of *did* as a tense marker can be regarded as an instance of intra-linguistic borrowing, because it is the result of the borrowing of a non-target but semantically equivalent morpheme, to express the grammatical meaning that is required. The borrowing yields the production of a target-deviant form, which suggests knowledge of morphological marking. Three of these intra-linguistic borrowings occur in the last session within the same stretch of conversation, where Amy is still talking of what happened to her when she went swimming in Nice.

(3;9.20)

5.64 *FAT: what happened another day?

*FAT: the fishes weren't friendly to us?

*CHI: why?

*FAT: I don't know, Amy.

*FAT: (be)cause they were a bit thirsty.

*CHI: well the fish did +...

*FAT: the fish stung you?

*CHI: no the fish **did give** me a kiss on my leg.

*FAT: and you went swimming in the sea.

*CHI: yes, then I did that.

*CHI: another fish went in my hand.

*FAT: did you eat him?

*CHI: no I **did bring** them to R.

*FAT: you brought them +...

*CHI: I **did put** them in my pillow.

*CHI: in my little Hello Kitty pillow.

*FAT: did you?

*CHI: yes.

*FAT: very nice.

While *bring* and *give* do not occur in the past tense anywhere else in the samples, *put* is also used in a seemingly target-like fashion in session seven.

(3;4.13)

5.65 *FAT: what was the story of Hansel and Gretel?

*CHI: that **they put** the witch in the oven.

*FAT: they put the witch in the oven?

*CHI: yes.

*FAT: what happened before that?

*CHI: they were going to eat her.

*FAT: who were they going to eat?

*CHI: the witch.

*FAT: they were going to eat the witch?

*CHI: yes.

*FAT: why did they want to eat the witch?

*CHI: because **they put** her in the oven.

*CHI: and when we put the witches in the oven we eat them.

*FAT: we eat the witches?

*CHI: yes.

*FAT: oh dear, that's not good!

There are also cases where intra-linguistic borrowings with specific verbs coexist with the use of the target past forms of the verbs in question within the same session. One of such cases concerns the verb *to take*, which is used in a target- and non-target-like fashion within the same stretch of conversation in session two. This also represents the first occurrence of an intra-linguistic borrowing in the data. Amy is playing with her father and they are spelling words with a toy alphabet.

(2;11.15)

5.66 *CHI: I am a rabbit.

*FAT: pardon?

*CHI: who **did take** this blue key?

*FAT: who took it?

*FAT: I don't know.

*FAT: who took it?

*FAT: I think you took it, Amy.

*CHI: no, you **took** it!

*CHI: I was talking and you **took** this!

Likewise, *go* is used in grammatical and ungrammatical forms in the last play session. First, Amy uses *went* in four different utterances as illustrated in the following passages.

(3;9.20)

5.67 *FAT: where did you see them?

*CHI: we **went** to eat the ice cream.

*FAT: you saw them when we went to see the ice cream?

(3;9.20)

5.68 *FAT: we went to Nice and we had lunch.

*FAT: do you remember?

*CHI: no we **went** to tree.

*FAT: we went to tree?

*CHI: yes.

*FAT: and what did we do there?

*CHI: we climbed up trees.

(3;9.20)

5.69 *FAT: what happened when you were swimming?

*CHI: a fish **went** on my leg.

(3;9.20)

5.70 *FAT: and you went swimming in the sea.

*CHI: yes then I did that.

*CHI: another fish **went** in my hand.

However, subsequently in the same session, she uses *did* + *go* in two different utterances. Amy and her father are still talking about things they did during the summer holiday in France.

(3;9.20)

5.71 *FAT: and what did we do after we made loom bands?

*CHI: we **did go** and buy more loom bands.

And again the use of *did* + *go* is repeated by Amy while talking about outings to the playground in France.

(3;9.20)

5.72 *FAT: were there any slides in France?

*CHI: yeah.

*FAT: what did you do when you went to slides?

*CHI: we **did go** on the swing and the see-saw.

Intra-linguistic borrowings seem to be limited to irregular verbs. On one occasion, *did* appears with a regular verb, but its use is pragmatically appropriate. Amy and her father are playing with *Happy Family*. The father asks whether Amy likes her new dress and where she bought it. Then he asks about the pink shoes she is wearing.

(3;3.10)

5.73 *FAT: where did you get the pink shoes?

*CHI: I don't know!

*FAT: you don't know?

*FAT: did they just magically appear?

*CHI: yeah, they **did** maaly [: magically] **appear**.

*FAT: can you say magically?

*CHI: magically.

It could be objected that some of these intra-linguistic borrowings are triggered by the interrogative structures that her father uses. In fact, only three out of six instances (all occurring in session twelve) take place in immediate answers to questions containing *did*. Furthermore, there are examples where Amy uses the target past form in answers to questions where *did* has been used.

(3;9.20)

5.74 *FAT: what did we do there?

*CHI: we climbed up trees.

(3;9.20)

5.75 *FAT: where did you see them?

*CHI: we went to eat ice cream.

(3;9.20)

5.76 *FAT: and did we go outside?

*CHI: no we stayed all the time making loom bands.

Indeed, the borrowing of *did* to mark tense takes place throughout the sampling period and coexists with the use of *-ed* and irregular target-like simple past forms. The simple past marker *-ed* appears with six verb types (*play, open, show, stay, climb up* and *swim*) and in six out of six obligatory contexts. It is used for the first time in the data in the third session and with two verb types within that session (*no, I already showed Anna with mummy* and *I opened it for mummy* 3;0.14). Subsequently, the past tense morpheme appears once in session four (*I just played with her* 3;2.2) and four times with three verb types in session twelve (*I just stayed, we climbed up trees, and then I *swimmed like this, we stayed all the time making loom bands* 3;9.20). Therefore, in the data, there is evidence of the ability to use the past marker from session three. However, it seems that sometimes Amy uses *did* in order to mark tense. If she knows that she needs a tense marker and she can also use *-ed*, why does she not add *-ed* instead of resorting to the borrowing of *did*? A possible explanation can be found in the relatively limited use of the past marker *-ed* in English. The *-ed* marker is semantically transparent because it only encodes the grammatical feature of tense. At the same time, it is not very frequent in the input because many of the most commonly used verbs have an irregular past form. Indeed, 19 out of the 25 verbs used by Amy in the past tense throughout the recording period are irregular. Moreover, even regular verbs do not add the suffix *-ed* in negative and interrogative sentences. Hence, the simple past marker only occurs with regular verbs in affirmative sentences. Conversely, *did* is widely used as it occurs with both regular and irregular verbs in negative and interrogative sentences. The insertion of the *do* support takes place in the present tense too and, sporadically, in affirmative sentences for emphatic purposes.

There is one other possible explanation. On the one hand, throughout the samples there is only one overgeneralisation error and it appears in the last session. On the other, the number of irregular verbs exclusively used in a target-like fashion in the samples is

relatively high (ten out of seventeen). These two circumstances together seem to suggest that Amy is at a stage where most overgeneralised verb forms have been replaced with the relative target forms. Therefore, she may have noticed that *-ed* cannot be added to all verbs to make the past tense and that, conversely, all verbs often appear with *did*. And it is noteworthy that virtually all the intra-linguistic borrowings in the samples concern irregular verbs. Either way Amy appears to be aware of tense marking morphological processes. Her use of *did* suggests that she knows that a particular phonological form is needed in order to express the meaning of tense and that, when the specific target form has not been learned yet or is not available to her, she copes by using *did*.

5.6.3 Tenses moods and verb stems

The emergence of tenses and moods in the English speech samples is summarised in Table 5.23. Three tenses are represented in Amy's speech data from the beginning of the longitudinal study, namely the present indicative, the simple future and the simple past. The present continuous and the past continuous emerge in the second session, the future continuous in the third session, the present perfect in the fifth session. On three occasions, Amy also produces a passive form (*he's called Daniel* 3;2.21; *no, she is called Fabi!* 3;2.21; *I don't know what it's called.* 3;3.10).

As to contrastive use of verb types, Amy uses 65 verb types of which 33 are used in the present indicative. Throughout the study, twelve verb types are used with the third person singular, twelve with at least two different person-number combinations, five with at least three person-number combinations. The relatively low number of verbs used in the present indicative can be accounted for by the fact that, unlike in Italian, Amy often uses the present progressive in English. Eighteen verb types are used in the present progressive and of those only eight are also used in the present indicative. If one also includes the verbs used with the *-ed* marker, the total of verbs used in non-compound tenses rises to 37.

TABLE 5.23 Emergence of tenses and moods in English

Age	Tense	Mood
2;10.18	Pres/Fut/SimPast	Ind/Imp
2;11.15	Pres/ PresCont/PastCont /SimPast	Ind/Imp
3;0.14	Pres/PresCont/SimPast/ FutCont	Ind/Imp
3;2.2	Pres/PresCont/Fut/PastCont/SimPast/FutCont	Ind/Imp/ ImpNeg
3;2.21	Pres/ PresPass/PresPerf /PresCont/Fut/SimPast/FutCont	Ind/Imp
3;3.10	Pres/PresCont/PresPass/PresPerf/Fut/SimPast/FutCont	Ind/Imp
3;4.13	Pres/PresCont/PastCont/Fut/SimPast/FutCont	Ind/imp
3;5.23	Pres/PresCont/PastCont/Fut/SimPast/FutCont	Ind/Imp/ImpNeg
3;9.20	Pres/PresCont/PastCont/Fut	Ind/Imp/ Cond

The emergence of new tenses and moods is highlighted in bold

5.6.4 Copula forms

The results for the analysis of present tense copula forms are illustrated in Table 5.24. Like in Italian, copula forms appear in the third person singular, the third person plural and, to a lesser extent, the first person singular. On one occasion, the second person singular is also used. As already mentioned in the presentation of the Italian data, the bias towards third person forms is likely due to the activities in which Amy was engaged during the play sessions. In English too, the absence of tokens of other person-number combinations can be accounted for by the absence of obligatory contexts for their use. Present tense copula forms are used with accuracy. Each person-number combination is reliably provided in virtually all the obligatory contexts that arise throughout the study. There is only one target deviation and it is an omission error which occurs in a third person singular context, in the first session (*this difficult* 2;10.18).

TABLE 5.24 Proportion of present tense copula *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	1/1	-	3/4	-	-	-
2;11.15	4/4	-	1/1	-	-	-
3;0.14	-	-	5/5	-	-	-
3;2.2	1/1	-	12/12	-	-	4/4
3;2.21	-	-	8/8	-	-	-
3;3.10	-	-	5/5	-	-	-
3;4.13	2/2	-	17/17	-	-	12/12
3;5.23	-	-	11/11	-	-	1/1
3;6.21	-	-	-	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	-	-	-	-
3;9.20	1/1	2/2	13/13	-	-	-
Total C/OC	9/9	2/2	75/76	-	-	17/17

The first person singular occurs in nine out of nine obligatory contexts. Despite the few occurrences, the structures in which the first person singular copula occurs are varied. The predicate is realised as a DP containing an adjective (*I am able* 2;10.18; *I am silly* 3;2.2; *I'm bigger and she is small* 3;4.13; *I am tired* 3;9.20), and common nouns (*I am a rabbit* and *I am a silly bee* 2;11.15). The third person plural appears in the data for the first time in the fourth session. It occurs in 17 out of 17 obligatory contexts. The second person singular is only used twice in the last session.

(3;9.20)

5.77 *FAT: who did the loom bands?

*CHI: mum.

*FAT: and is mum good at making loom bands?

*CHI: yes and you are very good.

*FAT: thanks very much.

*CHI: you are also very good.

*FAT: thanks.

In the imperfect tense, the copula is only used in the third person singular and the third person plural. In total, there are nine imperfect tense copula tokens of which eight are third person singular forms and one is a third person plural form (Table 5.25). The absence of the remaining person-number combinations is not determined by omission or commission errors, but by the absence of contexts in which they are required.

TABLE 5.25 Proportion of imperfect tense copula *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	-	-	-	-
2;11.15	-	-	-	-	-	-
3;0.14	-	-	1/1	-	-	-
3;2.2	-	-	3/3	-	-	-
3;2.21	-	-	1/1	-	-	-
3;3.10	-	-	1/1	-	-	-
3;4.13	-	-	-	-	-	-
3;5.23	-	-	-	-	-	-
3;6.21	-	-	-	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	-	-	-	-
3;9.20	-	-	2/2	-	-	1/1
Total C/OC	-	-	8/8	-	-	1/1

As for the present tense, Amy's speech samples provide evidence of contrastive use of singular and plural forms from the fourth session, (e.g., *daddy, these are the curtains, this is the balcony upstairs, these are the seats, this is the bedroom here, because these blocks are too hot, I will make a turtle because the turtle is my pet* 3;2.2). Furthermore, the copula appears with a range of third person singular and plural subjects including personal pronouns (e.g., *it's difficult* 2;10.18; *it's soft* 3;2.21; *she is asleep* 3;0.14; *she is small*, 3;3.10; *they are eyes* 3;3.10; *they are balloons* 3;3.10), interrogative pronouns (e.g., *what is it?* 2;10.18; *what is the k?* 2;11.15), deictic pronouns (e.g., *this is my game* 2;11.15; *that's the same* 2;11.15; *these are the curtains* 3;2.2; *these are the seats* 3;2.2) and common nouns (*the turtle is my pet* 3;2.2; *a car is not like that* 3;2.2; *these blocks are too hot* 3;2.2; *clouds are blue* 3;4.13; *the arms are like that* 3;4.13; *birdies are like that* 3;4.13; *the boat is good in five minutes* 3;9.20). Such variety of structures suggests that, in English too, Amy's knowledge is not limited to a lexically specific construction.

5.6.5 Other uses of *to be*

The results for the use of the present tense of *to be* as an auxiliary and a verbal predicate are summarised in Table 5.26. With regard to the other uses of *to be*, the picture that emerges from the English data is again similar to what was observed for Italian. The third person singular is the only person-number combination that appears from the first session. Throughout the study, it is used in all the 44 obligatory contexts in both predicative and

auxiliary constructions. Out of 44 occurrences, 17 are auxiliary forms, 27 are predicate forms of which nine are existential constructions. With respect to the 17 auxiliary forms, the third person singular appears nine times in present continuous constructions with three verb types: *this is missing there* (3;2.21); *she is getting the lunch* (3;5.23); *I don't think this is working very well* (3;9.20); three times in a passive construction with one verb type; once in a present perfect periphrasis (*where is the baby gone?* 3;3.10) and four times in future continuous constructions (e.g., *it is going to be with loads of colours* 3;0.14). Verbal predicate forms are used with the meaning of *to be in a place* (*look, it's there* 2;11.15; *where is it?* 3;2.2; *it's over there faraway* and *it's down there* 3;3.10; *he is in Kelly's class* 3;4.13, *that is there* 3;5.23; *it's near* 3;9.20), *to belong to* (*this is my car* 3;0.4); *to be for/from* (*this is for Ava's car*, 3;0.14; *that's for the house* 3;2.2; *what is the phone for?* 3;9.20; *that's for going on the boat*, 3;9.20; *it's from a little brick*, 3;9.20).

TABLE 5.26 Proportion of present tense auxiliary *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	1/1	-	-	-
2;11.15	1/1	-	2/2	-	-	-
3;0.14	1/1	-	4/4	-	-	1/1
3;2.2	11/11	-	3/3	1/1	-	3/4
3;2.21	1/1	-	4/4	-	-	6/6
3;3.10		-	9/9	-	-	8/9
3;4.13	7/7	-	4/4	1/1	-	1/1
3;5.23	7/7	1/1	3/3	4/4	-	-
3;6.21	-	-	-	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	-	-	-	-
3;9.20	-	1/1	14/14	-	-	6/6
Total C/OC	28/28	2/2	44/44	6/6	-	25/27

The first person singular appears for the first time in Amy's samples in the second session. It is exclusively used as an auxiliary and occurs in 28 out of 28 obligatory auxiliary contexts. It is used with 11 verb types (*I'm finding* 2;11.15; *I'm running* 3;0.14; *I'm going*, *I'm doing*, *I'm looking* 3;2.2; *I'm making* 3;2.21; *I'm drawing* 3;4.13; *I'm waiting*, *I'm building*, *I'm fixing*, *I'm missing*, 3;5.23). As an auxiliary it appears in 16 present continuous periphrastic structures and in 12 future continuous periphrastic structures.

The third person plural appears for the first time in the data in the third play session.

It is used in 25 out of 27 obligatory contexts. The 25 occurrences are 16 auxiliary forms and 9 verbal predicates. As an auxiliary, the third person plural appears nine times in future continuous periphrases, six times in present continuous periphrases, once in a present perfect periphrastic structure (*all the flowers are gone* 3;2.21). In the present continuous, it is used with six verb types (*because they are growing up*, 3;0.14, *they are sitting on them*, 3;2.2; *they are going to the café shop* 3;2.21; *I think they are waking up*, 3;3.10; *mamma and Anna are talking* 3;9.20; *when are they coming here?* 3;9.20). As to the function of verbal predicate, the third person plural is used with the meaning of *to be in a place* and *to be for* as shown in the following examples: *where are the shiny shoes?* (3;2.2); *where are them two beds?* (3;3.10); *they are on the ground* (3;4.13); *where the planes are* (3;9.20); *daddy what are these for?* (3;9.20). The first person plural appears for the first time in the data in the fourth session. It is exclusively used as an auxiliary and appears in six out of six obligatory contexts. It occurs five times in present continuous periphrases with two verb types (*to miss* and *to build*) and once in a future continuous periphrastic structure. The second person singular is used for the first time in the eighth session. It only appears twice, once as an auxiliary (*you are just messing* 3;5.23) and once as a verbal predicate (*you are on my tree* 3;9.20).

The third person singular is correctly provided in all the existential constructions with a singular subject as shown in the following examples: *daddy, there is nothing in there* (3;3.10); *there is no toilet* (3;3.10); *there is soap* (3;3.10); *there is snow* (3;3.10); *there is mummy* (3;3.13); *there is a pink one* (3;9.20); *no one because there is no one* (3;9.20). In two utterances, the third person singular form *there is* appears with a third person plural subject.

(3;2.2)

5.78 *CHI: there is no names.

*FAT: there is no names?

*FAT: you have to have names, Amy.

(3;3.10)

5.79 *CHI: there is no chairs.

*FAT: there is no chairs, Amy?

*FAT: what do we do?

As shown by the father replies, even adult native speakers of English make use of existential constructions where the third person singular form is followed by a plural noun. As a result, these instances can hardly be regarded as number deviations in the speech of young children. To the contrary, the data provide evidence of contrastive use of singular and plural forms with respect to both the auxiliary and the verbal predicate functions. With respect to the auxiliary function, there is evidence of contrastive use of singular and plural forms in present perfect periphrases (e.g., *all the flowers are gone* 3;2.21 and *where is the baby gone* (3;3.10); future continuous periphrases (e.g., *I'm going to build a house* 3;2.2 and *we are going to make stairs* 3;2.2); present continuous periphrases (e.g., *I'm missing a piece* 3;5.23 and *we're missing some pieces* 3;5.23). In relation to the verbal predicate function, there is evidence of contrastive use of singular and plural forms from the fourth play session onwards (e.g., *where is it?* 3;2.2 and *where are the shiny shoes?* 3;2.2; *it's down there* 3;3.10 and *the plates are there* 3;3.10 ; *it's for jumping* 3;9.20 and *what are these for?* 3;9.20).

There are only 17 tokens of the imperfect tense and they are distributed as follows: 12 auxiliary forms, three predicate forms with the locative meaning and two existential constructions. Unlike in Italian, obligatory contexts are not limited to third person forms, which again can be explained with the broader use that English makes of the periphrastic forms requiring *to be* as an auxiliary. For instance, all the nine occurrences of the first person singular are embedded in past progressive constructions. Verbal predicates occur in the second person singular (*you were there* 3;0.4) and the third person singular (*she was in bed*, *she wasn't in bed* 3;3.10). The existential construction is only used in the singular: *there was no ballet shoes* (3;3.10); *there was Eva, Isobel and Joan* (3;4.13). In both cases, the third person singular form is used with a plural subject. The latter instance is acceptable and could be included in the count of obligatory contexts for the third person singular. The former instance represents a number deviation but, as it was observed with respect to similar instances occurring in the present tense, this type of use is also attested among adult native speakers. Some evidence of contrastive use of singular and plural forms can be found in past continuous constructions: *they were going to eat him* (3;4.13) and *she was laughing when the plane was going high and high* (3;9.20).

TABLE 5.27 Proportion of imperfect tense auxiliary *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	-	-	-	-
2;11.15	1/1	-	-	-	-	-
3;0.14	-	1/1	-	-	-	-
3;2.2	3/3	-	-	-	-	-
3;2.21	-	-	-	-	-	-
3;3.10	-	-	2/2	-	-	0/1
3;4.13	-	-	1/1	-	-	1/1
3;5.23	1/1	-	-	-	-	-
3;6.21	-	-	-	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	-	-	-	-
3;9.20	4/4	-	2/2	-	-	-
Total A/OC	9/9	1/1	5/5	-	-	1/2

5.6.6 Auxiliary and verbal predicate *to have*

The results for the present tense of *to have* are summarised in Table 5.28. Unlike *avere* in the Italian data, in the English data *to have* is never used as an auxiliary but exclusively as a verbal predicate. There are no omission or commission errors in any of Amy's files with the present tense of *to have*. As a verbal predicate *to have* occurs with the meaning of *to possess* and the meaning of *to have to*. More precisely, out of 45 occurrences, it is used 34 times with the former meaning and 11 times with the latter. All the verbal person-number combinations of the present tense paradigm are represented in the samples (with the exception of course of the second person plural) and the dual meaning appears with all of them (e.g., *I have loads of pencils* and *I have to be* [well organised] 3;4.13; *you have blond hair* and *you have to draw it here on the ground beside mum and dad* 3;4.13; *it has to have legs on it* and *it has these two towers* 3;2.2; *we have a chimney in R.* and *we have to do like that* 3;5.23; *they have to sleep in there* and *they have their best costumes on* 3;3.10).

The first person-number combination that appears in Amy's speech samples is the first person plural. Amy and her father are spelling out words with a toy alphabet.

(2;11.15)

5.80 *FAT: we are missing the k@l.

*CHI: no, we have it.

TABLE 5.28 Proportion of present tense auxiliary *have* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;10.18	-	-	-	-	-	-
2;11.15	-	-	-	2/2	-	-
3;0.14	-	-	1/1	-	-	-
3;2.2	-	1/1	10/10	1/1	-	1/1
3;2.21	1/1	-	1/1	1/1	-	5/5
3;3.10	-	-	2/2	-	-	2/2
3;4.13	2/2	2/2	4/4	1/1	-	-
3;5.23	1/1	-	1/1	4/4	-	-
3;6.21	-	-	-	-	-	-
3;7.21	-	-	-	-	-	-
3;8.24	-	-	-	-	-	-
3;9.20	-	-	2/2	-	-	-
Total C/OC	4/4	3/3	21/21	9/9	-	8/8

The third person singular appears in the third session. Amy and her father are talking about Amy's newborn cousin. When the father asks *what colour hair did he have?* she replies that *he doesn't have any hair* (3;0.14). The second person singular and the third plural appear in the following session.

(3;2.2)

5.81 *FAT: I'm going to build the tower here, okay?

*FAT: a separate tower.

*FAT: is that okay?

*CHI: yeah.

*CHI: well, you have to build a tall tower.

(3;2.2)

5.82 *FAT: you have to have names, Amy.

*CHI: they don't have any names.

The first person singular appears last in Amy's speech samples.

(3;2.21)

5.83 *FAT: I think we don't have enough blocks, Amy.

*CHI: I think I have.

As for third person contexts, there is evidence for contrastive use of singular and plural forms from the fourth session. Talking of a turtle she is building with *Lego*, Amy says that *it has two feet* (3;2.2). Later in the same session, when asked by her father about

the names she wants to give to the toys with which she is playing, she replies that *they don't have names* (3;2.2). Amy also uses *to have* contrastively in its meaning of *to have to* as illustrated in the following examples: *this has to go here and this goes here* (3;2.2) and *now they have to go to a new coffee shop* (3;2.21). The same contrastive use of singular and plural forms also occurs in first person contexts.

(3;4.13)

5.84 *FAT: you are very organised, Amy, with all your crayons.

*CHI: I am.

*FAT: you are.

*CHI: I have to be.

(3;5.23)

5.85 *FAT: will we build a very tall house?

*CHI: yes.

*CHI: but first I have to put windows.

(3;5.23)

5.86 *FAT: which pieces are you missing?

*CHI: we need one like this.

*FAT: okay.

*CHI: you see?

*CHI: we have to do like that.

The data presented in this section show that Amy is able to use the present tense of *to have* with accuracy.

With respect to the past tense, the use of *to have* is very limited. Only three past forms occur throughout the sampling period and all of them are first person singular forms. As noted for the present tense, *to have* is exclusively used as a predicate and never as an auxiliary. There are no omission errors. In the imperfect, *to have* occurs once with the meaning of *to have to*: *I had to wash my hands, daddy* (3;3.10). In the remaining two instances, it is used with the idiomatic meaning of *to drink* and *to eat*.

(3;5.23)

5.87 *FAT: Amy, did you already have a cup of tea?

*CHI: I had two cup of teas.

*CHI: now I drink another cup of tea.

*FAT: this is your second cup for the day?

(3;9.20)

5.88 *FAT: what did you do on the airplane?

*CHI: I had something, daddy.

*FAT: what did you have?

*CHI: my dinner.

5.6.7 Noun morphology

The analysis of nominal morphology focused on the use of the plural suffix *-(e)s* in obligatory contexts. The analysis of productivity was implemented with a search for noun types. In addition, Amy's speech samples were also searched for potential instances of target-deviant forms showing productive use of noun inflections, i.e., cross-linguistic borrowings and overgeneralisations at the level of inflectional morphology. The plural suffix *-s* occurs in 91 of the 92 obligatory contexts (Table 5.29) and is used with 46 noun types (Table 5.30). The allomorph *-es* appears in all the eight obligatory contexts (Table 5.29) and with five different noun types (Table 5.30). There is only one target-deviant form with the plural marker *-s*, which is an agreement error where Amy uses the singular form of the noun *cup* in a context where the plural *cups* is required (*two cup of teas* 3;5.23).

TABLE 5.29 Proportion of plural noun inflections in obligatory contexts

Age	-s	-es
2;10.18	-	-
2;11.15	1/1	-
3;0.14	5/5	1/1
3;2.2	15/15	-
3;2.21	7/7	-
3;3.10	10/10	1/1
3;4.13	21/21	6/6
3;5.23	12/13	-
3;6.21	-	-
3;7.21	-	-
3;8.24	-	-
3;9.20	20/20	-
Total I/OC	91/92	8/8

With regard to morphological mixing, while no instances of cross-linguistic borrowing occur, there are four overgeneralisations (Table 5.30). In one case, the plural suffix *-s* is added to noun *foot*. This happens three times in two different play sessions. The first two instances occur in the fourth session. Amy and her father are playing with *Lego* and Amy wants to build a turtle.

(3;2.2)

5.89 *CHI: so I will make a turtle because the turtle is my pet.

*CHI: it has these.

*CHI: it has **foots**, okay?

*FAT: feet you mean.

*FAT: do you mean feet?

*CHI: so yeah I'm just finding more **foots**.

*FAT: how many feet does it have the turtle?

*CHI: it has two feet.

Initially, Amy does not seem to take note of her father's correction and repeats *foots* but, eventually, she uses the target form *feet*. However, three months later, in session seven, Amy makes the same overgeneralisation error again. She is drawing the members of her family with her father.

(3;4.13)

5.90 *FAT: and what are these, Amy?

*CHI: these are **foots**.

*FAT: feet.

In the last instance, the plural marker is added to the mass noun *tea*. This syntagmatic expression as well as the previous instances of overgeneralisation are of interest because they cannot have been heard in the input and reveal that Amy treats the inflection *-s* as a mobile phoneme, which she attaches to words to convey the meaning of plurality.

(3;5.23)

5.91 *FAT: Amy, did you already have a cup of tea?

*CHI: I had two cup of **teas**.

*CHI: now I drink another cup of tea.

*FAT: this is your second cup for the day?

TABLE 5.30 Contrastive use of noun types and overgeneralisations

Age	-s	-es	Overgeneralisations
2;10.18	-	-	-
2;11.15	1	-	-
3;0.14	5	1	-
3;2.2	6	-	2
3;2.21	5	-	-
3;3.10	5	1	-
3;4.13	11	3	1
3;5.23	4	-	1
3;6.21	-	-	-
3;7.21	-	-	-
3;8.24	-	-	-
3;9.20	9	-	-
Total	46	5	4

5.7 The elicitation task

The elicitation task was administered at the beginning of the third play session, when Amy was 3;0.14. The results for the elicitation task are summarized in Table 5.31, which also presents the occurrences of the same morphemes in the spontaneous speech data collected from session one to session three. In none of the eight present tense copular probes did Amy provide the required copula form. However, in her spontaneous speech samples, present tense copula forms are used with accuracy and in a variety of constructions. As mentioned with respect to the Italian task, one possible explanation of her poor performance is that the copular probes did not create an explicit need for Amy to include the copula in her answers as shown in the example below.

5.92 Probe	Target answer	Child's answer
This soother is red but these ones...	are blue	blue

TABLE 5.31 Responses for the elicitation task in English

Grammatical Morpheme	Score	S1	S2	S3
third person singular copula	0/4	3/4	1/1	5/5
third person plural copula	0/4	-	-	-
plural noun inflection –s	4/4	-	1/1	5/5
plural noun inflection –es	4/4	-	-	1/1
third person singular	2/6	-	3/4	6/6
third person plural	2/6	-	-	-

Her performance improved with the plural marker probes. Indeed, Amy provided the target answer in all eight probes. As for the present tense third person singular marker, Amy provided the target answer in two out of six probes (*what does George do? he cries; what does George do? he brushes his teeth*). In one case, she answered by using the verbal predicate *to be* as illustrated in the example below.

5.93 Probe	Target answer	Child's Answer
what does George do here?	cycles	George is on the bike

In the remaining three probes, Amy used the present continuous. With respect to the six present tense third person plural probes, she provided two target answers and four present continuous forms. As already mentioned with regard to the Italian task, present continuous forms could not be included in the count of the correct answers because they do not bear the morphemes tested in the task.

5.8 The comparative analyses

5.8.1 The present indicative paradigm

Amy shows a similar degree of accuracy with the present tense paradigm in both languages (Table 5.32). In Italian, each inflection is provided with a high degree of reliability: the error rate ranges between 0% and 4% for the singular markers and 0% and 8% for the plural suffixes. The highest error rate concerns the third person plural marker *-ono*, which appears in 92% of the contexts in which it is required. However, as pointed out in section 5.4.1, the target deviation with this morpheme is a number deviation, which takes place in a context where the plural status of the subject is not very transparent since the subject is an English plural noun (session ten, Table 5.4). Furthermore, an intra-linguistic borrowing,

which occurs in the very same session, suggests that the morpheme in question has been identified and is used to mark the third person plural. The two Italian third person plural markers never reach point of acquisition in the course of the longitudinal study. This circumstance can be accounted for by the fact that obligatory contexts for the markers in question do not arise over three consecutive sessions. This possibly happens because in Italian there are two different morphemes to mark the third person plural. The third person plural itself does indeed appear in eight out of twelve sessions and, consecutively, from session four to session seven, but neither marker is used in each of those sessions. In English, there are no agreement errors with personal pronouns. The only person-number combination that does not reach point of acquisition by the end of the study is the first person plural, but again this happens because of the absence of contexts for its use. The third person singular marker reaches point of acquisition in session three when Amy is 3;0.14.

TABLE 5.32 Accuracy and productivity of present tense forms in Italian and English

Italian				
	First Appearance	Point of Acquisition	Accuracy	Productivity
1ps	2;10.18	2;10.18	96%	30%
2ps	2;10.18	3;3.10	100%	19%
3ps –a	2;10.18	2;10.18	98%	37%
3ps –e	2;11.15	3;3.10	97%	27%
1pp	3;3.10	3;3.10	100%	24%
3pp –ano	2;10.18	-	94%	10%
3pp –ono	3;2.2	-	92%	13%
English				
1ps	2;10.18	2;10.18	99%	54%
2ps	2;10.18	2;10.18	100%	27%
3ps	2;11.15	3;0.14	96%	36%
1pp	3;2.2	-	100%	24%
3pp	3;2.2	3;2.2	100%	24%

Present tense inflections are often but not always used with more than one verb type in each session. There is variability not just among inflections, but also in the behaviour of each individual inflection over time. For example, the Italian first person singular ending *-o* appears with 13 verb types in session eight, but with only two verb types in sessions seven and ten (Table 5.3). Likewise, the English third person singular marker appears with one verb type in sessions two, five and eight, but with three verb types in sessions four and six (Table 5.19). On the other hand, the overall ratio of present tense inflections over the total of verb types used in the present tense shows that there is a similar level of productive use of inflections in Italian and in English (Table 5.32).

5.8.2 Morphological mixing

Target-deviant forms have been split in this study in two groups: deviations that show productive use of inflections, i.e., overgeneralisations, intra- and cross-linguistic borrowings, and deviations that supposedly show non-productive use of inflections, i.e., omissions, finiteness and agreement deviations. Overgeneralisations, intra- and cross-linguistic borrowings indicate that separation of inflections from stems has taken place. An overview of this type of target deviations in the two languages is provided in Table 5.33.

The cross-linguistic comparison shows that, in both languages, morphological overgeneralisations concern the verbal and the nominal domain. With regard to verb inflections, in Italian, Amy says *piangiono* (*they cry*) and *leggiono* (*they read*) when she is 2;11.15 and *potiamo* (*we can*) when she is 3;8.24 and her MLU values are respectively 2.5 and 3.8. In each one of these instances, the verb stem that she uses is not the one that in the input combines with the inflections *-ono* and *-iamo*. The same phenomenon takes place with the verb *fare* (*to do/make*). She says *facciono* (*they do* 3;7.21 MLU 3.5) where the target is *fanno*. This instance has been categorised as an intra-linguistic borrowing because *fare* is a verb in *-are* and, therefore, it does not take *-ono*, which is the third person plural ending for verbs in *-ere* and *-ire*. With respect to the stem that is used, it is an overgeneralisation too. The verb *fare* appears with the stem *facci-* in the first person singular and the first person plural. Amy takes this stem from either person-number combination and also borrows into its conjugation the ending *-ono* from a different verb class. In English, there is only one instance of overgeneralisation in the verbal domain. It

consists of the borrowing of the past tense marker *-ed* and it occurs at the end of the longitudinal study, when Amy is 3;9.20 and her MLU values are 3.7.

TABLE 5.33 Morphological mixing in Italian and English

Italian				
Age	MLU	Overgeneralisations	Intra-linguistic Borrowings	Cross-linguistic Borrowings
2;11.15	2.5	leggiono/ piangiono sono le frutte	le tigre	
3;0.14	2.1			
3;3.10	2.8		è marciata	
3;4.13	2.5			perché non c'è los lettos
3;4.13	2.5			non c'è ancora dei letts
3;5.23	2.6	le mote		
3;7.21	3.5		vole via/ fa diventire/ che tende facciono?	
3;8.24	3.8	potiamo un'altra?		
3;9.20	3.6		sì parleva anche la mia lingua/ma Maria Sole parleva la mia lingua/ uno pirato ha i baffi	
English				
2;11.15	2.4		who did take this blue key?	
3;2.2	3.8	it has foots/so yeah, I'm just finding more foots		
3;2.21	3.1			io make it
3;3.10	3.1		yeah, they did maaly appear.	
3;4.13	3.1	these are foots		
3;5.23	3.6	I had two cup of teas		
3;9.20	3.7	and then I swimm ed like this.	no the fish did give me a kiss on my leg/ I did bring them to R./ I did put them in my pillow/ we did go and buy more loom bands/ we did go on the swing and the see-saw.	

In the nominal domain, in Italian, Amy says *frutte* (fruits) and *mote* (motos), while the target is *frutta* and *moto* because the noun *frutta* is only used in the singular and the noun *moto* is unchangeable. The fact that she cannot have heard these forms in the input suggests that she makes the plural by using a morphological process where the plural marker is added to the noun stem. In English, overgeneralisations in the nominal domain revolve around the borrowing of plural noun marker *-s*. They take place between the age of 3;2.2 and 3;5.23 when her MLU values range between 3.8 and 3.6.

Cross-linguistic borrowings from English into Italian are limited to the plural suffix *-s*. The borrowing of the English plural marker is of particular interest because Amy appears to make use of the two morphological processes needed to form the plural in English and Italian, i.e., addition (*los lettos* = *lo* + *s* and *letto* + *s*) and substitution (*letts* = *lett-o* → *lett-* → *lett-* + *s* 3;4.13 MLU 2.5). The only instance of cross-linguistic borrowing from Italian into English relates to the borrowing of the Italian first person singular pronoun *io* (*io make it* 3;2.21 MLU 3.1).

Intra-linguistic borrowings concern both noun and verb inflections in Italian, but exclusively the verbal domain in English. In Italian, Amy takes past participle (*marciata* 3;3.10 MLU 2.8), infinitive (*diventire* 3;7.21 MLU 3.5) present tense (*vole/facciono* 3;7.21 MLU 3.5), imperfect tense (*parleva* 3;9.20 MLU 3.6) endings that share with the targets semantic properties, i.e., person, number, tense, aspect, and adds them to stems of verbs belonging to a different verb class and that, therefore, do not combine with such endings in the input. The same phenomenon takes place with the masculine noun *pirata*, which she changes in *pirato*, thus borrowing the most common ending for singular masculine nouns. In English, intra-linguistic borrowings relate to the use of *did* as a tense marker which spans throughout the sampling period from session two, when she is 2;11.15, to the last session. They exclusively concern irregular verbs and coexist with the use of the relative target forms.

5.8.3 Agreement and omission errors

Agreement errors on lexical verbs only occur in Italian. They appear to be systematic in nature, because they only concern one of the two features encoded by agreement on Italian verbs, i.e., either person or number. Person deviations exclusively concern singular forms.

They appear to be unidirectional because they all consist of the borrowing of the second person singular marker into a context where the first person singular is required. They occur from session five to session eight and almost exclusively relate to irregular verbs. Out of six instances four concern the verb *volere*, one the verb *sapere*, which are both irregular in the present indicative, and only one the verb *preferire*, which follows a more regular morphological pattern.

There are only three number deviations and they are limited to third person contexts. In two cases, the third person singular marker *-e* is used in a context where the third person plural ending *-ono* is required. The first instance takes place in the third session. Here the obligatory context for the use of the third person plural marker arises from the use of two third person singular subjects (*esce Cappuccetto Rosso e la nonna*, *Little Red Riding Hood and the grannie emerges from the wolf's belly* 3;0.14). The second instance takes place in the tenth session in an utterance where the subject is an English plural noun (*ci serve dei curtains, mamma, some curtains is needed, mamma* 3;7.21). The plural marker *-ono* appears for the first time in session four; hence, in session three, i.e., at the time of the first number deviation, the samples do not contain evidence that Amy has knowledge of this morpheme. However, because it is a frequently used ending (so much so that, as it will be shown in the next chapter, it appears in Ava's samples from the very first play session, when she is only 2;0.26), it is likely that Amy had knowledge of this morpheme in session three. The point is that, on the one hand, the two errors occur in contexts where the plural status of the subject is opaque; on the other, the data contain evidence that Amy uses the morpheme *-ono* productively. Before the second agreement error takes place, this morpheme is used with five more verb types. And it is interesting to notice that, in session ten, although the morpheme does not appear in the only obligatory context that arises for its use, Amy borrows it into the conjugation of *fare* (*to do*), which suggests that the inflection in question is used productively. Moreover, the morpheme *-ono* appears with the verb types *uscire* and *servire* in session nine.

(3;6.21)

5.94 *MOT: cosa ci serve ancora?

what else do we need?

*CHI: si servono questi.

we need these.

(3;6.21)

- 5.95 *MOT: e cosa pensano di fare? and what do they think of doing?
*CHI: escono di casa poi arriva *Riccioli* they leave home and then *Golden*
D'Oro. *Locks arrives*.

The third number deviation occurs in the fourth session and concerns the use of the third person plural ending *-ono* in a context where a third singular morpheme *-e* is required (*questo è per il bambino quando non cadono dal letto, this is for the child when (they) do not fall off the bed* 3;2.2). The structure of this sentence is awkward and, because the subject is omitted and the referent is imaginary, the possibility cannot be ruled out that Amy is thinking of a plural subject, which is precisely what her mother's answer appears to assume. In the data, there is evidence that the morpheme *-e* is used productively by Amy. Although *-e* is not used in session four, it appears in the samples from the second session and it is used with five verb types in total between session two and three. Moreover, for this verb type too the data show that there is no lexical effect (*vedi, cade, see, it falls off* 3;4.13). Agreement errors with lexical verbs in English do not occur. For example, Amy never uses the second person singular pronoun to refer to herself as she does with the Italian second person singular ending.

Agreement errors with function words are very few in Italian and virtually non-existent in English. In Italian, they concern the copula *essere*, the predicate *essere* and the existential construction. They are equally systematic and unidirectional, as they all consist of number deviations in third person contexts, where the singular form *è* is used instead of the plural form *sono*. In the case of the copula, the obligatory context for the use of the plural form is created by the occurrence of two singular subjects (*è una balena e un coccodrillo* 3;9.20). In the case of the verbal predicate, the number deviation is more straightforward, because it occurs with a plural noun (*dov'è le scarpe di vernice?* 3;2.21). In the samples, the plural form *dove sono* only appears two months later (*dove sono i miei croissant?* 3;4.13). Therefore, it is possible that, up until the fifth session, *dov'è* is used as an unanalysed chunk with both plural and singular subjects. Number deviations with the existential construction only occur in the seventh session (*non c'è delle scale/perché non c'è los lettos/non c'è ancora dei letts* 3;4.3). However, as highlighted in section 5.4.5, with regard to the construction in question, there is evidence of contrastive use of singular and plural forms from session five.

In English, there are equally cases where *is* occurs with plural subjects in existential constructions (*there is no names* 3;2.2, *there is no chairs* 3;3.10). These occurrences can hardly be regarded as number deviations, because they are pragmatically acceptable in spoken English. As for errors of omission, in English there is only one instance and it occurs in the first session in a third person singular context (*this difficult* 2;10.18). In Italian, there are no omissions with present tense forms. Therefore, the analysis of copula forms in Italian and English suggests that Amy has knowledge of the obligatory nature of the copula from the beginning of the longitudinal study.

5.8.4 Finiteness errors

Finiteness deviations occur in two types of context: present indicative contexts¹⁶ and contexts for compound tenses. The former type occurs in both languages, whilst the latter only occurs in Italian. Non-finite forms have come to be known in the literature as *root infinitives* (Rizzi, 1994) or *optional infinitives* (Wexler, 1998). In this study, the term *root infinitive* is used solely to refer to Italian infinitival forms and English bare forms occurring in present indicative contexts. The terms *root participle* and *root gerund* are used to refer to errors resulting from the omission of the auxiliary from a compound tense context. The more general label of *finiteness deviation* or *non-finite form* is used to refer the phenomenon of the optional omission of tense and agreement-bearing material from finite contexts.

In Italian, there is only one root infinitive and it occurs in the fourth session in a first person plural context (*comprare questa* 3;2.2, see section 5.4.1, passage 5.8). This finiteness error lends itself to a modal interpretation (Hoekstra and Hyams, 1998; Freudenthal *et al.*, 2009), because it clearly refers to a future event that Amy wants to take place. In English, the third person singular marker is used in 96% of obligatory contexts and with 12 verb types (*go, do, sleep, live, play, know, like, mean, take, stop, sail, need*). In only two instances, bare forms are used in a third person singular context. One instance takes place in session two (*because she don't want to go and change her nappy* 2;11.15) and the other in session six (*because Ava does this +... lie in your bed and mummy's bed*

¹⁶ More in general this type of context could be referred to as a non-compound tense context; however, in the data, the only non-compound tense context in which finiteness deviations occur is the present indicative.

3;3.10). The contextual analysis (see also section 5.6.1) shows that, unlike the Italian infinitival forms, the English root infinitives do not have a modal interpretation and, more in general, do not appear to result from the omission of tensed material from a compound finite. The former root infinitive is a stative and there is considerable cross-linguistic evidence that the modal reference is limited to eventive verbs (e.g., Meisel, 1990; Platzack, 1990; Ingram and Thompson, 1996; Wijnen, 1996; Freudenthal *et al.*, 2009). Furthermore, it occurs in a compound structure; hence, the lack of finiteness clearly cannot originate from the omission of the tensed form of the dummy *do*. Here the dummy *do* has been inserted, but only to support the contracted negative marker *n't*¹⁷ (Hoekstra & Hyams, 1998). The latter root infinitive could be interpreted as part of a compound finite if it occurred in an interrogative structure, but this hypothesis becomes implausible if one looks at the preceding utterance which shows that Amy is saying that her younger sister Ava in the morning has the habit of lying in her parents' bed.

Table 5.34 summarises the occurrences in Amy's input corpus of the Italian verb *comprare* and the English verbs that she uses in third person singular contexts. Occurrences have been divided into modal compound finites, non-modal compound finites and tensed forms. In English, non-modal compound finites include structures where finiteness is marked on the periphrastic *do* or on a verb selecting the infinitive. In Italian, they include structures where the infinitival form is governed by a verb selecting an infinitive or a preposition. With respect to English, red font highlights the verb types that appear in the bare form in Amy's output corpus. The analysis shows that there is little correlation between forms that appear in compound finites in the input corpus and root infinitives in Amy's output corpus. The Italian verb *comprare* is used by Amy also in the first person plural, but only once and in session six at the age of 3;3.10, that is two say two months after the occurrence of the *root infinitive*. As shown in Table 5.34, in her input corpus, the verb in question appears almost in the same number of tensed and modal contexts. However, if also non-modal compound finites are considered, then, the number of contexts in which *comprare* appears in the infinitival form outweighs the number of contexts in which it appears in the inflected form.

¹⁷ While bare negative markers with inflected verbs (e.g., *@daddy not makes*) are unattested in the acquisition literature, children use both *don't* and *doesn't* in third person singular contexts in negative utterances (Harris & Wexler, 1996).

In English, 14 verb types occur in third person singular contexts, Amy always correctly inflects 12 of them. For two of them, *to want* and *to lie*, she exclusively provides the bare form. In the English input corpus, bare forms in modal contexts are very rare and are limited to the verb *to sleep*. All verbs, including the ones for which Amy always produces the inflected form, predominantly appear in compound finites in her input corpus. Exceptions are represented by the verbs *to live* and *to do* which are highlighted in green. The latter appears 45 times in the inflected form (= *does*) and 39 times in a compound finite, however, 42 out of 45 times, the inflected form is used in questions, i.e., in utterance initial position.

TABLE 5.34 Appearance in the input of verb types used in root contexts in the output

Italian	CF Modal	CF non modal	Inflected
comprare	9	14	8
English			
do	-	39	45
go	-	40	7
know	-	48	1
lie	-	2	-
like	-	24	1
live	-	7	9
mean	-	2	-
need	-	10	1
play	-	6	1
sail	-	-	-
sleep	4	-	-
stop	-	2	1
take	-	4	-
want	-	57	-

As mentioned above, finiteness deviations in a context for a compound tense periphrastic structure can only be found in the Italian data. Nine times Amy produces non-finite utterances in which the auxiliary is omitted and only the non-finite form of the lexical verb is supplied. One of such finiteness deviations occurs in a present perfect periphrasis: *perché si sporcata un po' quando ha fatto una torta?* (3;2.21, see section 5.4.5). It is worth pointing out that this is a reflexive verb form, where the reflexive pronoun and the past participle are provided while only the auxiliary is left out. Another root participle occurs in a pluperfect periphrasis (*fatto così* 3;3.10, see section 5.4.6). Six non-finite forms occur in

contexts for the past continuous. On three occasions, the auxiliary *stare* is omitted and only the gerund of the main verb is used.

(3;3.10)

- | | | | |
|------|-------|-------------------------|---------------------------|
| 5.96 | *MOT: | qua cosa stavi facendo? | what were you doing here? |
| | *CHI: | giocando con loom bands | playing with loom bands. |

(3;3.10)

- | | | | |
|------|-------|-------------------------|---------------------------|
| 5.97 | *MOT: | qua cosa stavi facendo? | what were you doing here? |
| | *CHI: | spingendo il carrello. | pushing the trolley. |

(3;3.10)

- | | | | |
|------|-------|---------------------------|-------------------------------|
| 5.98 | *MOT: | e qua cosa stavi facendo? | and what were you doing here? |
| | *CHI: | mangiando il gelato. | eating the ice cream. |

In three instances, Amy only uses the infinitive of the main verb.

(3;3.10)

- | | | | |
|------|-------|------------------------------|---------------------------|
| 5.99 | *MOT: | qua cosa stavi facendo? | here what were you doing? |
| | *CHI: | andare sullo scivolo. | to go on the slide. |

(3;9.20)

- | | | | |
|--------|-------|-------------------------------------|----------------------------------|
| 5.100* | MOT: | cosa stavi facendo al parco? | what were you doing at the park? |
| | *CHI: | andare su quello scivolo là. | to go on that slide there. |

(3;9.20)

- | | | | |
|-------|-------|-----------------------------|-------------------------------|
| 5.101 | *MOT: | e qua cosa stavate facendo? | and here what were you doing? |
| | *CHI: | comprare la fontana. | to buy the fountain. |
| | *MOT: | come comprare la fontana | to buy the fountain? |

This use of the infinitival form also takes place in a present continuous context.

(3;5.23)

- | | | | |
|-------|-------|-----------------------------|------------------------------|
| 5.102 | *MOT: | e cosa stai facendo adesso? | and here what are you doing? |
| | *CHI: | mescolare . | to mix. |

It is noteworthy that out of nine finiteness deviations six occur in contexts for the past continuous. Finiteness deviations in past continuous periphrases continue until the end of the sampling period, while, in all the other periphrastic structures, they end four months earlier. The past continuous does not appear to be established in Amy's grammar, as it only appears in her speech samples once in the last session.

5.8.5 Tenses moods and verb stems

Amy displays a comparable level of contrastive use of verb types in Italian and in English (Table 5.35). There is only one noticeable difference: the verb types that appear in the present indicative in Italian are twice as many as in English. This discrepancy can be partially accounted for by the fact that in English, Amy makes a greater use of the present continuous. In English, Amy uses 18 verbs in the present progressive and of those only eight also appear in the present indicative. In Italian, only six verbs are used in the present continuous and only two of them are not also used in the present indicative. Moreover, as mentioned at the beginning of the present chapter, English data could not be collected for a period of three months. Therefore, the recordings accumulated for Italian exceed the English recordings by two hours and forty minutes.

TABLE 5.35 Proportion of verb types used contrastively in Italian and in English

Italian	
Present Tense	Non-Compound Tenses
23/67	28/77
33%	36%
English	
Present Tense	Non-Compound Tenses
12/33	12/37
36%	32%

With regard to the acquisition of tenses, in Italian three tenses are already represented in Amy's speech in the first session, i.e., the present indicative, the present perfect and the pluperfect. Three other tenses appear in the data, namely the imperfect in session three, the present continuous in session four and the past continuous in session twelve. In English, three tenses are already represented in Amy's speech samples in the first session, namely, the present indicative, the future and the simple past. Throughout the sampling period, four new tenses appear: the present continuous and the past continuous in session two, the future continuous in session three and the present perfect in session five. Therefore, *prima facie*, it seems that a higher number of new grammatical contrasts is

incorporated in English than in Italian. However, in Italian, each tense's paradigm includes several grammatical contrasts. Indeed, the imperfect alone counts as many as 18 different inflectional endings and new imperfect tense morphemes appear in the speech samples in almost each session from session six to session twelve.

Other differences in the use of tenses between the Italian and the English data are also a consequence of the structural features of the two languages. The present continuous is much more frequently used in English than in Italian, where the present indicative is used to refer to actions that are about to take place and often even to describe actions that take place at the time of speaking. Amy's speech samples reflect this difference: in English, the present continuous appears in all sessions in which English data were collected apart from the first session; in Italian, it is only used in sessions four, eight, nine and twelve. The present perfect is broadly used in Italian to talk about past events that took place in the near as well as the less recent past, while in English its use is much more limited. Once again Amy's data reflect this characteristic of the languages she is acquiring. In the Italian data, the present perfect appears in every session. In the English samples, it is used in sessions five and six. This circumstance also explains the broader use of the auxiliary *to have* in Italian than in English. The much more frequent use that the English language makes of the past continuous explains the fact that the tense in question appears in session two in the English data and is then used in session four, seven, eight and twelve, while it only appears once in the last session in the Italian data.

In sum, the analysis of the use and the emergence of tenses suggests that the acquisition of new grammatical contrasts proceeds in a language-specific, balanced fashion across the two languages.

5.8.6 Copula and auxiliaries

Amy displays a comparable level of accuracy across the two languages in the use of the copula and the auxiliaries (Table 5.36). In both languages, the paradigms of the present tense of *essere/be* and *avere/have* appear to be fully acquired from the beginning of the longitudinal study. Indeed, the error rate is nil or almost nil for most forms; hence, when point of acquisition does not coincide with first appearance or is not achieved, this seems to be imputable to the absence of obligatory contexts in the following session(s). With regard

to *avere/have*, the only noticeable difference concerns the more limited use of *to have* in comparison with the Italian counterpart *avere*, which is a function of the more limited use the English language makes of *have* as an auxiliary. In Italian, *avere* occurs as an auxiliary in 42 out of 68 contexts. In English, *to have* is exclusively used as a verbal predicate.

TABLE 5.36 Accuracy and point of acquisition for function words

Italian			
	First Appearance	Point of Acquisition	Accuracy
1ps <i>essere</i>	3;3.10	3;6.21	100%
2ps <i>essere</i>	3;8.24	-	100%
3ps <i>essere</i>	2;10.18	3;0.14	99%
1pp <i>essere</i>	3;0.14	-	100%
3pp <i>essere</i>	2;10.18	3;0.14	93%
1ps <i>avere</i>	2;11.15	2;11.15	100%
2ps <i>avere</i>	2;10.18	-	100%
3ps <i>avere</i>	2;10.18	2;10.18	100%
1pp <i>avere</i>	3;3.10	3;6.21	100%
3pp <i>avere</i>	3;2.21	3;6.21	100%
English			
1ps <i>be</i>	2;10.18	2;10.18	100%
2ps <i>be</i>	3;5.23	-	100%
3ps <i>be</i>	2;10.18	2;11.15	99%
1pp <i>be</i>	3;2.2	-	100%
3pp <i>be</i>	3;0.14	3;0.14	100%
1ps <i>have</i>	3;2.21	-	100%
2ps <i>have</i>	3;2.2	-	100%
3ps <i>have</i>	3;0.14	3;0.14	100%
1pp <i>have</i>	2;11.15	-	100%
3pp <i>have</i>	3;2.2	3;2.2	100%

With specific reference to the copula, evidence of contrastive use of third person

singular and plural forms emerges in the data in the third session in English and in the fourth session in Italian. However, in both languages, no agreement errors occur in the previous sessions to suggest that Amy could not use such forms contrastively before then. In the two languages, varied copular constructions appear, which suggests that her knowledge of the copula is based on the abstract construction DP + copula + DP. Finally, all the copular constructions are language specific, i.e., in Italian the subject position is often left empty, while in English expletive subjects are never omitted. There are instances of VS structure in Italian, which is a linguistic device of which English does not make use. As for the other uses of *essere/to be*, the two languages are also comparable. First, in both languages, two more person-number combinations emerge than the ones used with a copular function: besides first person singular and third person singular and plural forms, there are also occurrences of first person plural forms and second person singular forms. Second, in both languages, Amy uses the predicate *essere/be* to cover a variety of meanings. There are two superficial differences, which can be explained with differences between structural features of the two languages. One relates to the more limited use of the first person singular in the Italian data than in the English samples. The first person singular appears in 28 out of 28 obligatory contexts in English and in five out of five contexts in Italian. This difference can be accounted for by the fact that, in English, the present continuous and the future continuous are often used in contexts where, in Italian, the present indicative is used. Furthermore, in Italian, the present continuous is formed with the present tense of the verb *stare* plus the present gerund. Hence, even when the present continuous is used the auxiliary *essere* does not appear. Indeed, in English the first person singular is exclusively used as an auxiliary and appears in 16 present continuous periphrases and in 12 future continuous periphrastic structures. In Italian, on two occasions only, it is used as an auxiliary and it appears in present perfect periphrases.

The second difference concerns the use of the existential construction *c'è/there is* and *ci sono/there are*. In both languages, the existential construction is used in the present and in the imperfect. In Italian, there is evidence of contrastive use of singular and plural forms from the fifth session in the present and in the last session in the imperfect. In English, the existential construction is never used in the plural. However, this circumstance can be accounted for by the fact that the singular form of the existential construction is also

used with plural subjects in spoken English. For example, as mentioned in section 5.6.5, in two instances Amy uses the singular form *there is* with a plural subject (*there is no names* 3;2.2, *there is no chairs* 3;3.10). Likewise she uses the singular form with a plural subject in the imperfect (*there was no ballet shoes* 3;3.10). However, each of these utterances is pragmatically acceptable.

5.9 Chapter summary

In sum, the data presented in this chapter show that, with respect to Italian, the paradigm of present tense is almost fully established by the age of 3;3.10, the only exception being the second person plural, which never appears in any of Amy's files. There are hardly any substitution errors. Overall, each individual inflection is provided in at least 92% of obligatory contexts. Point of acquisition is not reached only for the two Italian third person plural markers, but this is likely due to the lack of obligatory contexts over consecutive play sessions. Indeed, with regard to the plural marker *-ano*, the only missed opportunity is represented by an instance of intra-linguistic borrowing and not by an agreement error. Productivity of the suffix *-ono* is signalled by instances of overgeneralisation, which occur in the second play session. The only deviation with this marker occurs in an utterance whose subject is an English plural noun in session seven. In the same session, an intra-linguistic borrowing suggests that the marker is used with paradigmatic mastery. When substitutions do occur they deviate from the target by number or person. When they deviate by number, the singular or plural status of the subject appears ambiguous. In one case, where a third person plural verb form is used with a third person singular subject, the subject is not phonetically realised and there is reason to believe the number of the subject Amy is thinking of matches her choice of the verbal number. In one other case, a third person singular verb is used with two singular subjects. In the remaining instance, the agreement error occurs in a mixed utterance where the subject is a plural English noun. In English, personal pronouns are always used in a target-like fashion. The only target deviation occurs with the first person singular pronoun and consists of the use of the equivalent Italian pronoun (3;2.21).

Finiteness deviations occur in both languages. In English, they are restricted to present indicative contexts and end when Amy is 3;3.10. Not only they do not lend

themselves to a modal interpretation, but also, more in general, they do not seem to result from the omission of inflection-bearing material. In Italian, finiteness errors mostly occur in past continuous periphrastic structures. These deviations continue until the end of the longitudinal study and the tense in questions is absent from her Italian speech data. In both languages, overgeneralisations, intra- and cross- linguistic borrowings of inflectional items occur throughout the sampling period. They show that the segmentation of stems from inflections has taken place and that inflections are used to convey a grammatical meaning. Age and MLU values are other important factors in establishing whether or not one should expect that the child has already achieved a sufficient amount of linguistic information for generalisations to occur. Ava's data were collected with the aim of determining whether similar use patterns are already detectable at an earlier stage of bilingual first language acquisition. Her data analyses are presented in the next chapter.

CHAPTER 6

Ava's data analyses

6.1 Introduction

The data analysed in this chapter come from the case study of Ava, an Italian-English bilingual first language acquisition child. Ava was born in Dublin, Ireland, where she lives with her Italian mother, her Irish father, a native speaker of English, and her elder sibling, Amy, whose data were presented in the preceding chapter. This chapter is structured in the same way as the previous one. First, a description of Ava's linguistic environment is provided. The description is based on the questionnaire that her parents completed at the start of the sampling period. Second, I present the analyses of the Italian spontaneous and elicited data. Then, I focus on the English speech samples. Finally, a comparison is provided between the morphological acquisition and use patterns in Italian and in English.

6.2 Ava's linguistic environment

At the beginning of the sampling period, Ava's parents were asked to individually complete the *Questionnaire on the linguistic environment of the bilingual child*. The following report is mostly based on the answers they gave, although additional pieces of information were collected in a more informal fashion by the researcher during her monthly visits. Like her sister Amy, Ava has been exposed to both Italian and English from birth. She sleeps from 9:00pm to 7:00am and for about one hour and a half in the afternoon. From Monday to Friday, she attends an English day care from nine in the morning to six in the evening. When she is at home, she is exposed to English and Italian in approximately equal measure in direct interaction with her parents, as her parents always speak with her in their respective native language. Therefore, on Saturdays and Sundays, her overall exposure to both languages becomes more balanced. However, on weekdays, Ava is exposed to Italian for about one hour and a half and to English for about eleven hours and a half. In the family, her parents always speak English to each other. Ava and Amy interact with each other in Italian but, given the very young age of both children, their linguistic exchanges were very limited through the whole of the sampling period. Both parents think that it is

important that Ava learns both languages. When Ava addresses her mother in English, she usually just moves on and answers in Italian. When asked about the language that Ava uses more frequently or in which she shows better confidence, the parents have opposite views. The mother thinks it is English, because in Italian sometimes she has difficulties in conjugating verbs or seems unable to find words. The father thinks it is Italian, but he also says that it could just be that Ava is chattier with her mother. No asymmetries are noticeable in comprehension. Ava produced her first words when she was 1;2 and there was no gap between the two languages. When playing on her own, she uses Italian or English depending on who surrounds her. Unlike her sister Amy, Ava never attended a weekly Italian-focused playgroup. Nevertheless, her mother tries to create opportunities for Ava to engage with Italian. In Italian, they play together, read stories, learn songs. Moreover, Ava watches Italian cartoons on TV. When asked to rate the need that Ava has for her two languages, both parents claim that it is more important for Ava to speak English because she lives in Dublin. As in Amy's case, again it is only the father who highlights that Ava also needs Italian. He says she needs it to communicate with her Italian relatives, some of whom have no English. He also adds that he is glad that Ava has the opportunity to grow up bilingual, since it is well known that there is a general benefit from speaking two languages. Ava's mother claims that she does not need to speak Italian, because she lives in Ireland and goes to an English speaking school, where no one would understand her if she spoke Italian.

6.3 Quantitative analysis

Like her sister Amy, Ava was recorded in her home in interaction with one parent at a time on Saturday or Sunday mornings. Only the February's play session took place on a Saturday evening. Possibly because of her very young age (Ava was only 2;0.26 at the time of the first play session), she had not been very talkative in the first two months of the study and her parents suggested I try to record her during mealtime, when she was normally chattier. As a result of the fact that she did not seem to talk as much as Amy, her play sessions were on average 30 minutes longer than her sister's ones; hence, each play session lasted approximately two hours. Efforts were made to record her in each language for an equal amount of time, but the actual length of the Italian and the English sessions was also

affected by parents' availability, family commitments and child's routines. In total, almost 23 hours of recording were accumulated over the one-year long longitudinal study, 12 hours and 37 minutes in Italian and 10 hours 15 minutes in English. The recordings were fully transcribed into CHAT. Ava's data are summarised in Table 6.1 and Figure 6.1. Her spontaneous speech corpus is comprised of 4357 utterances, of which 2464 are Italian utterances and 1893 are English utterances. As in Amy's case, mixed utterances represent a very small percentage of her overall speech production (0.85%). If directionality of code-mixing is considered (Paradis, Nicoladis & Genesee, 2000), it can be noted that borrowing from English into Italian is more frequent than the reverse pattern. Indeed, mixed utterances represent 1% of the overall Italian speech production, but only 0.6% of the English data.

TABLE 6.1 Ava's data

Age	It MLU	En MLU	U	It U	En U	It-En	En-It
2;0.26	2.2	1.9	406	182	224	-	-
2;2.6	1.9	1.8	255	205	50	1	-
2;3.10	2.0	2.0	293	194	99	-	-
2;4.10	1.2	1.9	325	153	172	1	-
2;5.8	2.0	3.0	384	227	157	2	1
2;6.6	3.0	3.0	368	239	129	5	3
2;7.10	2.4	2.7	373	224	149	4	1
2;8.0	2.9	2.8	540	280	260	1	2
2;9.19	3.2	2.8	485	269	216	2	-
2;10.15	2.9	2.8	352	140	212	2	2
2;11.14	2.8	2.3	308	184	124	4	2
3;0.18	3.2	2.7	268	167	101	4	-
			4357	2464	1893	26 (1%)	11 (0.6%)

Code-mixing is mostly limited to the lexical domain and consists of the insertion of an English lexical item, usually a noun, into an Italian utterance or vice-versa¹⁸. MLU values

¹⁸ The list of Ava's Italian-English and English-Italian mixed utterances is provided in Appendix H. As regards the Italian-English directionality, the following instances of mixing have been identified: noun insertion (42%), word order (19%), word order and noun insertion (4%), verb morphology (23%), insertion of an adjective (8%), insertion of a subject pronoun (4%). With regard to the English-Italian directionality, the

were calculated through CLAN for all transcriptions in both languages. They were computed in words as an average utterance length for each session. Figure 6.2 presents the results when MLUw is plotted against age for Italian and English.

FIGURE 6.1 Overview of Ava’s data

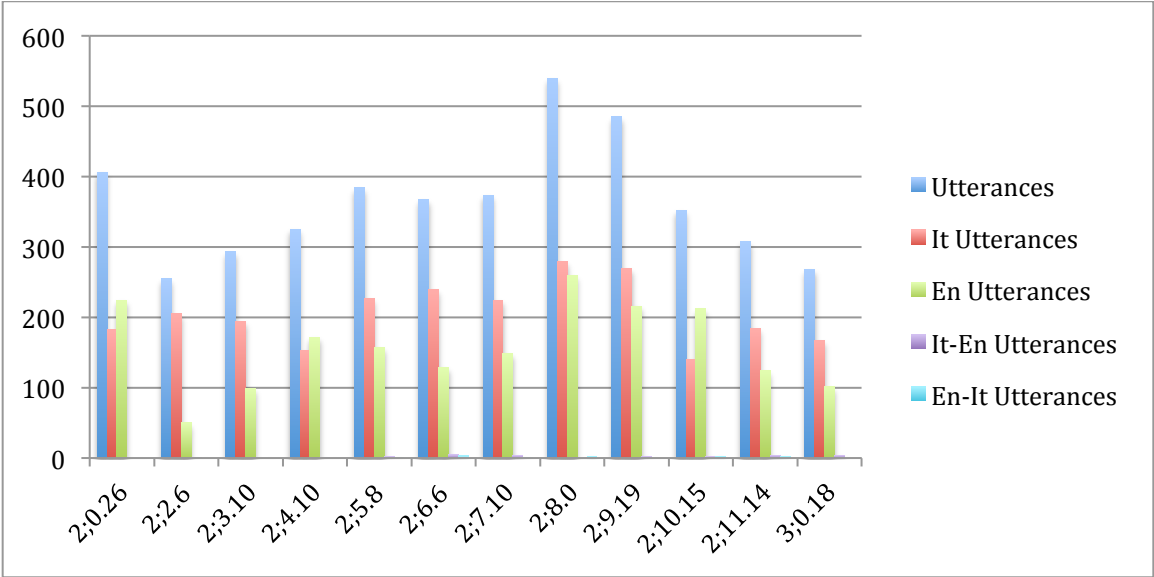
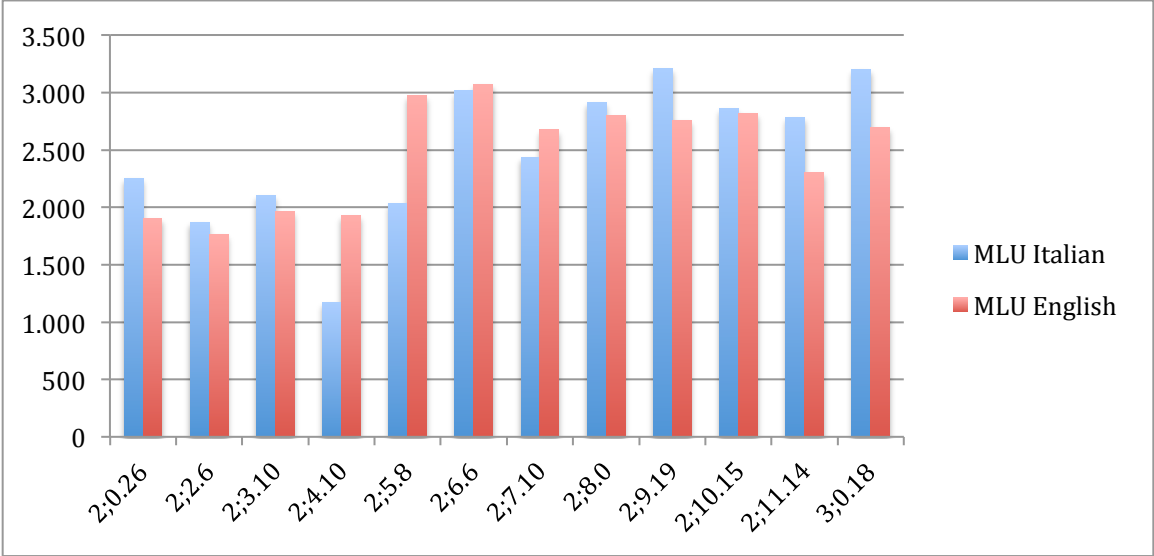


FIGURE 6.2 Mean length of utterance and chronological age



following instances have been identified: noun insertion (82%), verb insertion (9%), insertion of a deictic pronoun (9%).

6.4 The Italian spontaneous data

6.4.1 Present indicative inflections

The results for present tense endings are illustrated in Tables 6.2-6.5. In Table 6.2 accuracy rate is provided. Table 6.3 offers a view of the verb inflections that appear with different verb types at each point in time. Table 6.4 presents all the instances of agreement and finiteness deviations. Table 6.5 presents the 64 verb types with which present indicative endings appear throughout the study. Blue font highlights the irregular verbs that keep the same stem for at least two of the inflections with which they appear in the samples. Red font signals the irregular verbs that change their stem for each of the endings with which they are used. Green highlights the regular verbs appearing with at least two different endings. Similar to what was observed in Amy's speech data, second person plural markers do not appear in Ava's speech samples (Table 6.2). As mentioned above, in the course of the sampling period, the seven present tense endings are used with 64 verb types (Table 6.5). Five endings are already present in the data from the first play session, namely the first person singular ending *-o*, the third person singular endings *-a* and *-e*, and the third person plural endings *-ano* and *-ono*.

TABLE 6.2 Proportion of present indicative inflections in obligatory contexts

Age	1ps o	2ps i	3ps a	3ps e	1pp iamo	2pp ate	2pp ete	2pp ite	3pp ano	3pp ono
2;0.26	13/14	-	5/5	2/3	-	-	-	-	4/5	1/1
2;2.6	2/2	-	1/1	3/3	-	-	-	-	-	-
2;3.10	16/18	-	6/6	3/3	-	-	-	-	-	-
2;4.10	6/6	-	6/6	5/5	-	-	-	-	-	-
2;5.8	15/15	-	4/4	-	-	-	-	-	-	-
2;6.6	27/28	3/3	16/16	4/4	3/4	-	-	-	-	-
2;7.10	23/24	-	0/2	1/1	8/8	-	-	-	-	1/1
2;8.0	23/23	2/2	20/20	6/6	16/16	-	-	-	9/10	3/3
2;9.19	60/60	-	19/19	10/10	-	-	-	-	9/9	-
2;10.15	32/32	3/3	6/6	0/1	1/1	-	-	-	1/1	-
2;11.14	47/47	5/5	9/9	3/3	1/1	-	-	-	1/1	5/5
3;0.18	29/29	3/3	8/8	4/4	2/2	-	-	-	2/2	4/4
Total	293/298	16/16	100/102	41/43	31/32	-	-	-	26/28	14/14
%	98%	100%	98%	95%	97%	-	-	-	93%	100%

Bold indicates the first appearance of a given inflection

TABLE 6.3 Appearance of verb inflections with different verb types

MLU	Age	Present Indicative				Imperative				Imperfect				1ps evo	3ps eva	1pp avamo	1pp evamo	3pp evano
		1ps o	2ps i	3ps a	3ps e	1pp iamo	3pp ano	3pp ono	2ps a	2ps i	1ps avo	3ps ava						
2.2	2;0.26	2		2	2		2	1	1									
1.9	2;2.6	2		1	3				1	1								
2.0	2;3.10	4		6	1				1									
1.2	2;4.10	3		4	4													
2.0	2;5.8	5		2					1						1			
3.0	2;6.6	7	2	3	3	3			1	3	1	1	1					
2.4	2;7.10	6	2	0	1	3		1	1							1		
2.9	2;8.0	5	1	5	4	3	3	3	1	3				1				
3.2	2;9.19	7		8	5		5	1	1		1							
2.9	2;10.15	4	2	5		1	1		2	1			1					1
2.8	2;11.14	2	5	5	3	1	1	4				1	1	1			1	
3.2	3;0.18	6	3	4	3	2	2	2	1					1				1

Blue font highlights first appearance of a given inflection

TABLE 6.4 Agreement errors with verb inflections and non-finite forms

Age	Agreement Errors	Target	Non-Finite Forms	Target
2;0.26	manca due	mancano	leggere questa	leggo
2;0.26			finito lo yogurt	è finito
2;0.26			Ava vedere!	vede
2;2.6			cosa fatto Ava?	ha fatto
2;3.10			io mangiare questo	mangio
2;3.10			io fare pessi [: pezzi]	faccio
2;4.10			fare un castello di sabbia	stanno facendo
2;4.10			andati via	sono andati
2;5.8			entrati in casa	stanno entrando
2;5.8			fare un puzzle con papà	ho fatto
2;5.8			fatto clina [: collanina]	ho fatto
2;5.8			fatto così	ho fatto
2;6.6		poi io fa questo	faccio	andare a ballet
2;6.6	preso il gelato			abbiamo preso
2;6.6	fatto il limone			abbiamo fatto
			fatto yoga	abbiamo fatto
2;7.10	cololi [: colori]	colora		
2;7.10	cololi [: colori] i twistable			
2;7.10	questo vuoi girare	voglio		
2;8.0			caduto il mio fiore	è caduto

The first person singular appears with 18 verb types (Table 6.5) and is provided in 293 out of 298 obligatory contexts (Table 6.2). It is the only marker that is used in every session. It appears with a minimum of two and a maximum of seven verb types within the same session (Table 6.3). There are two agreement and three finiteness errors with this ending (Table 6.4). The agreement errors are all deviations by person. The first instance occurs when Ava is 2;6.6. She wants to make a tree behind the *Legó* house she has just built with her mother.

(2;6.6)

- 6.1 *MOT: poi puo-i fare un' altra casa.
 then can-2SG.PRS to make an other house
 'then you can make another house.'
 *CHI: poi io f-a questo dietro.
 then I make-3SG.PRS this behind
 'then I makes this behind.'

Ava says: *poi fa questo (then she makes this)* but she is talking about what she is going to build next; hence, she should have said *poi faccio questo (then I make this)*. This target deviation can be accounted for by the fact that, as often happens in the speech of very young children (Guasti, 1994), sometimes, Ava refers to herself by using the third person singular. The second instance occurs in the subsequent play session. Again, Ava and her mother are playing with *Lego*.

(2;7.10)

- 6.2 *CHI: questo è un caminetto. this is a little fireplace.
 *MOT: ma il caminetto va sul tetto. but the fireplace goes on the roof.
 *CHI: ma questo vuo-i girare dall' altra parte.
 but this want-2SG.PRS to turn from the other side
 'but this you want to turn to the other side.'
 *MOT: vuo-i girare così?
 want-2SG.PRS to turn so
 'do you want to turn it like this?'

She wants to turn a block to the other side, but says *vuoi (you want)* instead of *voglio (I want)*. The fact that she means to use the first person singular is clear from intonation and is confirmed by her mother's immediate answer. There is one last instance in which Ava uses the second person singular in place of the first person singular with the verb *volere*, but it seems more a slip of the tongue. Since she immediately corrects herself, this deviation was not included in the count of missed opportunities for the use of the first person singular marker.

(2;9.19)

- 6.3 *CHI: adesso vuo-i +...
 now want-2SG.PRS
 'now you want +...'
 *CHI: adesso vogli-o fare +...
 now want-1SG.PRS to do
 'now I want +...'

*INV: il puzzle vuo-i fare?
the jigsaw want-2SG.PRS to do
‘do you want to do the jigsaw?’

It is worth pointing out that both *fare* and *volere* are irregular in the present tense. Although they still bear the same endings as regular verbs, which is why they have been included in the analysis of the acquisition of present tense inflections, they are certainly characterised by a less transparent morphological pattern. The first finiteness deviation occurs in the first play session: *leggere questa, to read this*, (2;0.26). The other two finiteness deviations take place in the third play session. Ava is at the dinner table and, in the first occurrence, she manifests her intent to eat something else, because she does not seem to like what she is eating.

(2;3.10)

6.4 *MOT: è troppo piccante?
is too spicy
‘is it too spicy?’
*CHI: io mangi-are questo.
I eat-INF this
‘I to eat this.’
*MOT: intanto mangi-a quello.
meanwhile eat-2SG.IMP that
‘eat that first.’

What she probably means here is *I want to eat this*. Her mother’s answer confirms this interpretation. Similar is the reading of the other infinitive. Ava is eating a pear and almond cake and she is making small pieces. The pear bit is harder to break and her mother wants to show her how to do it.

(2;3.10)

6.5 *MOT: bisogn-a fare così.
need-3SG.PRS to do so
‘you need to do like so.’
*MOT: guard-a.
look-2SG.IMP
‘look.’
*CHI: io f-are pezzi.
I make-INF pieces
‘I to make pieces.’

What she seems to mean is that she wants to make the pieces herself.

The third person singular morpheme *-a* is used in 100 out of 102 obligatory contexts (Table 6.2). It appears with 26 verb types (Table 6.5) and is used with a maximum of eight verb types within the same session (Table 6.3). There are two agreement errors with this ending, in which it is replaced with the second person singular marker *-i* (Table 6.4). They occur over two consecutive utterances with the same verb in the seventh play session. Ava and her mother are looking at some photos of a summer holiday the family spent in France. I ask what her sister Amy is doing in one of the photos and Ava replies by saying *colori* (*you colour*) but the intended meaning is *colora* (*she colours*).

(2;7.10)

6.6 *INV: quella è Ava o Amy?
that is Ava or Amy
'is that Ava or Amy?'

*CHI: è Amy.
is Amy
'it is Amy.'

*INV: e che cosa f-a Amy?
and what do-3SG.PRS Amy
'and what does Amy do?'

*CHI: colol-i [: colori].
colour-2SG.PRS
'you colour.'

*CHI: colol-i [: colori] i twistables.
colour-2SG.PRS the twistables
'you colour the twistables.'

*MOT: us-a i twistables.
use-3SG.PRS the twistables
'she uses the twistables.'

*MOT: color-a con i twistables.
colour-3SG.PRS with the twistables
'she colours with the twistables.'

The third person singular ending *-e* appears in 41 out of 43 obligatory contexts (Table 6.2) and it is used with 18 verb types through the whole of the sampling period (Table 6.5). It appears with a maximum of five verb types within the same session (Table 6.3). In two instances, the suffix *-e* is not supplied in an obligatory context, once in the first session and once in the tenth session (Table 6.4). The former is a finiteness error. Ava is flicking through photos of the previous summer holiday on her mother's phone. The mother asks who is portrayed in each picture and she identifies herself.

(2;0.26)

- 6.7 *CHI: è Ava.
is Ava
'it is Ava.'
*MOT: è Ava anche quella!
is Ava also that
'that is also Ava!'
*CHI: Ava ved-ere.
Ava see-INF
'Ava to see.'

What she probably means is *Ava wants to see*, because she refers to herself in third person in the previous stretch of conversation. The target deviation occurring in session ten is an instance of what has been defined in this study as intra-linguistic borrowing and, therefore, it is discussed in section 6.4.3.

The third person plural ending *-ano* is used in 26 out of 28 obligatory contexts (Table 6.2) and appears with nine verb types (Table 6.5). It is used in the first session, but then it is not used again over the subsequent six sessions. It appears with a maximum of five verb types within the same session (Table 6.3). There are two errors with respect to this ending (Table 6.4). The first is an agreement error where the third person singular ending *-a* is used in place of the third person plural and occurs in the first session. Ava is doing a jigsaw with her mother.

(2;0.26)

- 6.8 *CHI: manc-a due.
miss-3SG.PRS two
'two is missing.'
*MOT: no, non manc-ano.
no not miss-3PL.PRS
'no, they are not missing.'
*MOT: li ha messi via papa.
them has put away dad
'dad put them away.'

The second non-target form is very unusual because it resembles a bare-stem form and it occurs in session eight. Ava and her mother are playing with dolls and pretending that the dolls are on holiday and have just arrived at their hotel bedroom.

(2;8.0)

- 6.9 *CHI: e poi si addorment-ano e si svegl-i.
and then themselves fall-3PL.PRS asleep and themselves wake-2SG.PRS up

‘and then they fall asleep and wake up.’
 *MOT: si addorment-ano
 themselves fall-3PL.PRS asleep
 e si svegli-ano?
 and themselves wake-3PL.PRS up
 ‘do they fall asleep and wake up?’

Svegli could be a second person singular form, but the pronoun *si* that Ava uses is the third person reflexive pronoun. Therefore, it can more likely be explained as a phonological error, in the sense that Ava encounters a difficulty in reproducing the entire phonological sequence of the target verb form. This explanation is made even more plausible by the circumstance that third person plural forms may be challenging from a prosodic perspective for young children. They are proparoxytone and, thus, they deviate from the usual prosodic pattern of Italian words, where the stress falls on the second last syllable (Leonard *et al.*, 2002). The third person plural suffix *-ono* is used in all 14 obligatory contexts (Table 6.2). It appears with 11 different stems throughout the study (Table 6.5) and is used with a maximum of four verb types within the same session (Table 6.3). It appears in the first session, but then it is not used again until session seven.

The second person singular *-i* and the first person plural *-iamo* appear for the first time in Ava’s speech samples in the sixth play session. The second person singular ending is provided in all the 16 obligatory contexts (Table 6.2). It is used with ten verb types (Table 6.5) in the course of the sampling period. It appears with a maximum of five verb types within the same session (Table 6.3). Although there are no errors with this ending, it is worth pointing out that all but one of the person deviations that have been discussed above entail the provision of a second person singular marker in a non-obligatory context (Table 6.4) and take place in the session which follows the first appearance of this morpheme in the speech samples. The first person plural marker is used in 31 out of 32 obligatory contexts (Table 6.2). It appears with six verb types (Table 6.5) throughout the study and with a maximum of three verb types within the same session (Table 6.3). There is only one error, which occurs in the sixth session, where Ava uses an infinitive in a context where the first person plural is required (Table 6.4). Ava’s mother is saying that she needs to take Amy to ballet and adds that from September Ava can start attending ballet classes too.

(2;6.6)

- 6.10 *MOT: ci vuoi andare Ava?
there want to go Ava
'do you want to go Ava?'
- *CHI: sì
'yes.'
- *CHI: tu vai con me.
'you go with me.'
- *MOT: sì.
'yes.'
- *CHI: and-are a ballet.
go-INF to ballet
'to go to ballet.'
- *MOT: and-iamo insieme.
go-1PL.PRS together
'we go together.'
- *MOT: io, te ed Amy.
I you and Amy
'me, you and Amy.'

The data presented here show that the use of present tense inflections is accurate, because each marker appears in at least 95% of obligatory contexts. Only the third person plural suffix *-ano* appears in 93% of obligatory contexts. However, this is a conservative measure, because it takes into account a deviation that, in all likelihood, only constitutes the result of Ava's inability to reproduce the entire phonological sequence of the target verb form. If this error is excluded from the count of missed opportunities, the reliability with which Ava provides the marker in question reaches 96%. The first morpheme to reach point of acquisition is the third person singular marker *-a*, which meets the accuracy criterion from the first session, while the third person singular marker *-e* attains criterion in the second session. The remaining morphemes reach point of acquisition in a gradual fashion. The first person singular marker attains criterion in session four; the third person plural *-ano* in session eight, the second person singular and the first person plural in session ten, whereas the third person plural marker *-ono* does not attain criterion by the end of the sampling period. It is worth noting that the suffix *-ono* does not reach point of acquisition owing to the absence of contexts for its use over three consecutive speech samples. Together with the second person singular, it is the only marker that has a 100% accuracy rate throughout Ava's Italian files.

TABLE 6.5 View of the 64 verb types that appear with present indicative endings

1ps -o	2ps -i	3ps -a	3ps -e	1pp -iamo	3pp -ano	3pp -ono
voglio	vuoi	arriva	vuole	mescoliamo	addormentano	cadono
credo	aiuti	si attacca	apre		giocano	chiudono
vado	vai	va	corre	andiamo	vanno	corrono
posso	chiedi	bisogna	dorme	possiamo	versano	partono
devo	colori	canta	deve	dobbiamo	cantano	tengono
metto	gratti	si chiama	mette	mettiamo		vengono
leggo	leggi	da	legge			leggono
faccio	fai	fa	piace	facciamo	fanno	
mi ricordo	usi	si gira	piange			piangono
prendo		incastra	prende			
riesco		innaffia	pulisce			
trovo		lancia	sale			
lavo		lava	serve			servono
siedo		manca	siede			
mangio		mangia	spegne			
porto	togli	porta	toglie			tolgono
vedo		punta	vede			vedono
so		sa	vince			
		scappa				
		sembra			sembrano	
		sta			stanno	
		suona			suonano	
		taglia				
		torna				
		vola				
		diventa				
18/64	10/64	26/64	18/64	6/64	9/64	11/64
28%	16%	41%	28%	9%	14%	17%

Although the analysis confirms that the first person-number combination to be acquired is the third person singular (e.g., Guasti, 1994; Leonard *et al.*, 2002), it is not in line with the finding from the same studies that plural persons are acquired later than singular persons. The second person singular reaches point of acquisition after the third person plural *-ano* and is the last marker to make its appearance in the samples, together with the first person plural marker. On the one hand, it cannot be assumed that the absence of a given morpheme from Ava's data means that the morpheme in question is absent from her repertoire, especially in the absence of missed opportunities in the previous speech samples. On the other, the use pattern of the second person singular marker seems to be worth of some attention. This suffix appears in the data for the first time in session six, where it is used in all the three obligatory contexts that arise and with two verb types. In session seven no obligatory contexts arise for its use. Nevertheless, for the first and last time in the samples, the marker appears in three non-obligatory contexts, namely a first person singular and two third person singular contexts. From session eight onwards it is used in all the obligatory contexts and in the second last session even with five verb types. Hence, the migration of the morpheme in question into non-target contexts appears to immediately follow and be limited to its first appearance in the samples. This may indicate that it actually constitutes a new item in Ava's repertoire. If this is the case, the acquisition trajectory of this morpheme is rather rapid. In less than two months it goes from being absent to being used correctly and with multiple stems. The absence of the second person plural also deserves some further consideration. It is certainly the case that the marker in question very rarely occurs in the speech of young children (Guasti, 1994; Leonard *et al.*, 2002; Stavrakaki & Okalidou, 2016). The absence of obligatory contexts for its use may also account for its absence. However, it is noteworthy that, similar to what was observed in relation to Amy's data, this specific marker/person-number combination never occurs in the speech samples, in neither language and not just with respect to lexical verbs but also with respect to the copula and the auxiliaries. These use patterns suggest that the acquisition of the present tense paradigm is protracted, but the acquisition of each given inflection is less gradual.

The analysis of productivity shows that inflections are mostly used with at least two verb types in each session. However, the number of verb types with which individual

inflections combine across sections is quite variable. Target-deviant forms are not random. As it was also observed in Amy's data, agreement errors deviate from the target forms by only one grammatical feature, i.e., person or number. Person deviations only occur with singular endings and almost exclusively revolve around the use of the second person singular marker in a context where the first person singular or the third person singular is required. As mentioned above, these deviations take place soon after the second person singular appears for the first time in the speech samples and then disappear. They also occur with irregular verbs whose morphological pattern is less transparent. There is only one number deviation; it occurs with the third person plural marker *-ano* in an utterance whose subject is a numeral. It can be argued that, because of that, the plural status of the subject is rather opaque. Finiteness deviations all lend themselves to a modal interpretation.

6.4.2 Tenses moods and verb stems

The analysis of the use and the emergence of tenses and moods shows that three tenses are represented in Ava's speech samples from the beginning of the longitudinal study, namely the present indicative, the present perfect and the present continuous (Table 6.6). The imperfect is the only other tense that appears in her speech samples in the course of the sampling period. It is used for the first time in the data in session five and in each of the following sessions (Table 6.3).

Verb stems have been analysed with the aim of establishing whether they are used contrastively (Pizzuto & Caselli, 1992). Ava uses 64 verb types in the present indicative of which twenty-one are used with at least two different inflections. Three verb types (*andare*, *mettere* and *vedere*) appear with three different endings and the verb *leggere* occurs with four endings (Table 6.5). Seven of the 21 verbs used contrastively in the present tense have an irregular paradigm. They are: *andare* (to go), *dovere* (to have to), *fare* (to do/make), *potere* (to be able to), *sapere* (to know), *stare* (to stay), *togliere* (to take off). They were included in the analysis because they appear in person-number combinations in which they exhibit the same stem (Table 6.5). If also the verbs used in all the other non-compound tenses that occur in Ava's speech are considered, the total of verb types in her lexicon is 68, of which 28 are used with at least two different inflections, seven with three inflections, while the only verb type used with four endings remains *leggere*.

TABLE 6.6 Emergence of tenses and moods in Italian

Age	Tense	Mood
2;0.26	Pres /PresPerf /PresCont	Ind /Inf/Imp
2;2.6	Pres /PresPerf	Ind /Inf/Imp
2;3.10	Pres/PresPerf	Ind/Inf/Imp
2;4.10	Pres	Ind/Inf
2;5.8	Pres/PresPerf/ Imperf	Ind/Inf/Imp
2;6.6	Pres/PresCont/PresPerf/Imperf	Ind/Inf/Imp
2;7.10	Pres/PresCont/PresPerf/Imperf	Ind/Inf/Imp
2;8.0	Pres/PresCont/PresPerf/Imperf	Ind/Inf/Imp
2;9.19	Pres/PresPerf/Imperf	Ind/Inf/Imp
2;10.15	Pres/PresCont/PresPerf/Imperf	Ind/Inf/Imp
2;11.14	Pres/PresCont/PresPerf/Imperf	Ind/Inf
3;0.18	Pres/PresCont/PresPerf/Imperf	Ind/Inf/Imp

Bold indicates emergence of new tenses and new moods

As mentioned in relation to Amy's contrastive use of verb types (see section 5.4.2), a more stringent criterion would be to take into consideration exclusively the verb types used with multiple inflections in the same session in all non-compound tenses (Table 6.7). On the basis of this more conservative measure of productivity, the total of verb types used with at least two different endings lowers to 13 (Table 6.8): *leggere* (to read), *andare* (to go), *stare* (to stay), *mettere* (to put), *fare* (to do), *potere* (to be able to), *cantare* (to sing), *sapere* (to know), *correre* (to run), *servire* (to serve), *sembrare* (to seem), *piacere* (to like) and *vedere* (to see). Only two verbs are used with three different inflectional suffixes: *correre* (*corre*, *corrono*, **correviamo*) and *andare* (*vai*, *va*, *vanno*), in the second last and in the last sessions respectively. On four occasions, there are more than two verb types used with multiple endings, namely in sessions six, eight, eleven and twelve (Table 6.8). In particular, in sessions eight and twelve, five verb types appear with at least two different endings, and of those only the verbs *andare* and *potere* occur in both sessions.

TABLE 6.7 Verb types used with present indicative endings session by session

Age	-o	-i	-a	-e	-iamo	-ano	-ono
2;0.26	faccio		fa	prende		giocano	leggono
	voglio		manca	vuole		vanno	
2;2.6	voglio		pada [: punta]	vuole			
	riesco			piange			
				apre			
2;3.10	leggo		manca	legge			
	vado		va	sale			
	metto		lancia				
	voglio		fa				
			arriva				
			taglia				
2;4.10	vado		va	prende			
	voglio		fa	mette			
	leggo		suona	legge			
			innaffia	piange			
2;5.8	apro		fa				
	vado		va				
	prendo						
	voglio						
	trovo						
2;6.6	vado	vai	va	serve	andiamo		
	voglio	vuoi	attacca	pulisce	facciamo		
	vedo		sta	vede	mescoliamo		
	metto						
	so						
	posso						
	devo						
2;7.10	voglio	vuoi		siede	dobbiamo		vedono
	metto	colori			mettiamo		
	faccio				facciamo		
	lavo						

	so						
	ricordo						
2;8.0	devo	togli	sembra	piace	dobbiamo	addormentano	vengono
	so		va	legge	mettiamo	vanno	partono
	posso		sta	siede	possiamo	stanno	tengono
	voglio		s'incasta	toglie			
	faccio		gira				
2;9.19	voglio	vuoi	canta	mette		cantano	vengono
	so		va	dorme		vanno	
	vado		mangia	piace		suonano	
	faccio		sembra	vince		fanno	
	vedo		si chiama	serve		*versano	
	siedo		si gira				
	posso		vola				
			si lava				
2;10.15	so	leggi	fa				
	voglio	aiuti	va		mettiamo	vanno	
	mangio		da				
	devo		scappa				
			*piangia				
			diventa				
2;11.14		gratti	va	deve	andiamo	vanno	tolgono
	so	usi	sa	vuole			chiudono
	voglio	togli	sta	corre			corrono
		leggi	torna				piangono
		fai	porta				
3;0.18	voglio	vuoi	da	piace	dobbiamo		cadono
	posso	chiedi	sembra	serve	possiamo	sembrano	servono
	so	vai	va	spegne		vanno	
	porto		bisogna				
	metto						
	credo						

Bold highlights verb types used contrastively within each session

TABLE 6.8 Verb types used contrastively in each session

Age		Present Tense	Non-Compound Tenses	
2;0.26	7	-	7	-
2;2.6	5	-	5	-
2;3.10	10	leggo legge	10	-
2;4.10	9	leggo legge	9	-
2;5.8	6	-	7	-
2;6.6	13	vai va; vedo vede	18	sta stavo
2;7.10	10	metto mettiamo; faccio facciamo	12	-
2;8.0	19	va vanno; sta stanno; posso possiamo	20	leggi legge; metti mettiamo
2;9.19	23	canta cantano; va vanno	25	-
2;10.15	12	va vanno	15	-
2;11.14	15	so sa; va vanno; corre corrono	16	corre corrono *correiamo
3;9.18	16	posso possiamo; serve servono; sembra sembrano; vai va vanno	17	piaceva piacevano

6.4.3 Morphological mixing

Overgeneralisations, cross- and intra- linguistic borrowings at the morphological level are illustrated in Table 6.9. In the course of the study, three overgeneralisation errors occur and they all concern the verbal domain. The first instance takes place in the fourth session. Ava says *mi stanno cadendi i fusilli* (*fusilli are falling down* 2;4.10), thus making the ending vowel of the gerund agree in gender and number with the noun *fusilli*. She could not have heard this form in the input as the gerund is unchangeable. In the second instance (2;5.8), using the first person singular of the present tense of *leggere* (*to read*), Ava pronounces the *g* as voiced palate-alveolar affricate [dʒ], but, in the target, the *g* is realised as voiced velar stop [g] in the first person singular and the third person plural of the present indicative. The last overgeneralisation in the Italian samples occurs in the second last session. The form that Ava produces *si hanno bagnato tutti* (*they have all got wet*) (2;11.14) deviates from the target because *bagnarsi* is a reflexive verb and takes *essere* as an auxiliary in compound tense periphrases. At the same time, it suggests that by the age of 2;11.14 present perfect periphrastic structures are generated on the basis of a productive rule. It is worth pointing out that, in accordance with her choice of auxiliary, Ava correctly uses the default masculine singular form of the past participle. In the target form, which the mother provides in her next utterance, perhaps with a corrective intent (*si sono bagnati tutti*), the

past participle agrees with the masculine, plural subject.

TABLE 6.9 Morphological mixing

MLU	Age	O	Target	ILB	Target	CLB	Target
2.0	2;3.10			apa	ape		
1.2	2;4.10	cadendi	cadendo				
2.0	2.5.8	leggio	leggo				
2.4	2;7.10			varicelli	foruncoli della varicella		
2.4	2;7.10			i caroti	le carote		
3.2	2;9.19			dento	dente		
3.2	2;9.19			versano	volano verso		
2.9	2;10.15			piangia	piange		
2.8	2;11.14	si hanno bagnato	si sono bagnati	correviamo	correvamo	Spido	Spiderman
2.8	2;11.14			prendere	prendere		
3.2	3;0.18			un nuvolo	una nuvola		

There is only one instance of cross-linguistic morphological borrowing from English into Italian and it occurs in the second last play session. Ava is being shown pictures taken the week before at the Botanic Garden, where the family went to see a sort of fancy dress pumpkin competition. There are photos of pumpkins ‘dressed’ like characters from *Alice in the Wonderland* and several different cartoons.

(2;11.14)

6.11 *MOT: questo è il Cappellaio Matto.
this is the Hatter Mad
‘this is the Mad Hatter.’

*MOT: il primo premio.
‘the first prize.’

*CHI: questo è Spid-o.
this is Spid-M.SG
‘this is Spido.’

*CHI: vogli-o vedere Spid-o.
want-1SG.PRS to see Spid-M.SG
‘I want to see Spido.’

*CHI: Spiderman.

Pointing at the photo of the *Spiderman* pumpkin, Ava says *questo è Spido* (*this is Spido*). Although *spid* is not a morpheme in English, it is possible that Ava treats it as such on the basis of analogies with English nouns that can be decomposed in stem + *-er*. Thus, she

adds the Italian most common ending vowel for masculine singular nouns *-o* to what she appears to have reanalysed as a stem. Similar to what was observed with regard to Amy's cross-linguistic borrowing (see section 5.4.3), this bilingual blend seems to be triggered by a difficulty in retrieving the target lexical item.

There are seven instances of intra-linguistic morphological borrowing scattered throughout the sampling period. The first one occurs in the third session. We are sitting at the dinner table, Ava hears the theme song of a cartoon she likes very much.

(2;3.10)

- 6.12 *CHI: c' è la canzone mia
 there is the song my
 'there is my song.'
- *MOT: che canzone è?
 what song is
 'what song is it?'
- *CHI: l' ap-a Maia.
 the bee-F.SG Maya
 'Maya the bee.'

Ava says *apa* (*bee*) but should have said *ape*, because this is a feminine noun that belongs to the *-e* → *-i* group, which includes both feminine and masculine nouns. However, the majority of feminine nouns in Italian end in *-a* in the singular and make the plural by changing the ending vowel to *-e*. Furthermore, all nouns following this pattern are feminine with no exceptions. Hence, it appears that here Ava overgeneralises and borrows the more common ending vowel of feminine nouns into the declension of a noun belonging to a different nominal group. Something very similar happens with the noun *dente* (*tooth*), which is masculine and equally belongs to the *-e* → *-i* noun group. Ava and her mother are looking at a picture book of *Masha and the Bear*.

(2;9.19)

- 6.13 *CHI: cos' è questo?
 what is this
 'what is this?'
- *MOT: questo qua secondo me è il bagnoschiuma.
 this here according to me is the shower gel
 'this is the shower gel I think.'
- *MOT: per lavarsi.
 'to wash himself.'
- *CHI: questo è un dent-o.
 this is a tooth-M.SG

‘this is a tooth.’
 *MOT: questo è un dent-e.
 this is a tooth-M.SG
 ‘this is a tooth.’

Ava says *dento* instead of *dente*, thus borrowing the ending *-o* of masculine singular nouns into the declension of a noun following the *-e* → *-i* morphological pattern. This type of intra-linguistic borrowing with nominal morphology is again repeated in sessions seven and twelve. In these two instances, though, Ava not only borrows the nominal agreement markers from a different noun group, but also changes the gender of the nouns in question. With regard to session seven, the borrowing takes place in the course of the elicitation task and is discussed in section 6.5. In session twelve, Ava and her mother are doing a jigsaw featuring characters from the cartoon series *Peppa Pig*.

(3;0.18)

6.14 *MOT: cos’ è quella?
 what is that
 ‘what is this?’
 *CHI: è un nuvol-o.
 is a[M.SG] cloud-M.SG
 ‘it is a cloud.’
 *MOT: un cosa?
 ‘a what?’
 *CHI: un nuvol-o.
 a[M.SG] cloud-M.SG
 ‘a cloud.’

The noun *nuvola* (*cloud*) is feminine in Italian and belongs to the *-a* → *-e* group, but Ava uses the masculine singular marker *-o*. What makes this target deviation more akin to a morphological borrowing than to an error of agreement is her choice of the masculine indefinite article *un*, which suggests that she is treating the noun in question as a masculine noun.

Intra-linguistic borrowings also take place with verb morphology. The first instance occurs when she is 2;10.15. Ava and her mother are looking at pictures taken during the summer holiday. Ava asks who is the child who is crying in the photo.

(2;10.15)

6.15 *CHI: chi è quello che piangi-a?
 who is that who cry-3SG.PRS.ARE
 ‘who is the one crying?’

- *MOT: secondo te chi è quello che piang-e?
 according to you who is that who cry-3SG.PRS.ERE/IRE
 ‘who do you think it is the one crying?’
- *CHI: non lo so.
 not it know
 ‘I don’t know.’
- *MOT: sei tu, Ava!
 be[2SG.PRS] you Ava
 ‘it is you, Ava!’

The verb *piangere* (to cry) belongs to the *–ere* group, therefore, it adds the suffix *–e* to mark the third person singular in the present indicative. Ava says *piangia* (cries) instead of *piange*, thus replacing the target ending with the suffix *–a*, which is used to mark the same person-number combination on verbs in *–are*. In her immediate reply, the mother repeats Ava’s question providing the target verb form. The remaining two instances occur within the same session the month after. Ava and her mother are again looking at some pictures, which had been taken just the previous weekend at the Botanic Garden. The mother asks what Ava and her sister Amy are doing in one of the photographs and Ava says *correviamo* (we were running).

(2;11.14)

- 6.16 *MOT: cosa fac-evate lì?
 what do-2PL.IPFV there
 ‘what were you doing there?’
- *CHI: corr-ev-iamo.
 run-IPFV-1PL.PRS
 ‘we were running.’
- *MOT: corr-evate sì.
 run-2PL.IPFV yes
 ‘you were running yes.’

She uses the ending *–eviamo*, which appears to be a blend between the first person plural marker *–evamo* of the imperfect indicative and the first person plural marker *–iamo* of the present indicative (*ev+iamo=eviamo*). In the last instance, Ava and her mother are reading a story and the mother asks her to describe what the characters are doing in one of the illustrations of the storybook.

(2;11.14)

- 6.17 *MOT: secondo te la mamma cosa sta facendo qua?
 according to you the mum what stays doing here
 ‘what do you think the mum is doing here?’

- *CHI: vuol-e prend-are il bimbo.
 want-3SG.PRS take-INF.ARE the child
 ‘she wants to take the child.’
- *MOT: vuol-e prend-ere il bimbo.
 want-3SG.PRS take-INF.ERE the child
 ‘she wants to take the child.’

The verb *prendere* (to take) ends in *-ere* but Ava borrows the suffix *-are* and produces the non-target form *prendare*. The mother repeats Ava’s utterance providing the target form. It is interesting to notice that while intra-linguistic borrowings show that morphological segmentation of words into stems + endings has taken place, there are examples showing that, in some cases, parsing the continuous speech stream into articles and nouns has not occurred yet. One example occurs within the same session as the last two intra-linguistic borrowings discussed above. Ava is still looking at the pictures taken during the October school break.

(2;11.14)

- 6.18 *MOT: cosa st-ai facendo?
 what stay-2SG.PRS doing
 ‘what are you doing?’
- *CHI: sono chiudendo l’ astucci-o di Amy.
 be[1SG.PRS] closing the pen bag-M.SG of Amy
 ‘I am closing Amy’s pen bag.’
- *MOT: okay.
- *CHI: perché hai dato a Amy due lastucc-i?
 why have[2SG.PRS] given to Amy two pen bag-M.PL
 ‘why have you given two pen bags to Amy?’
- *MOT: perché glie-ne hanno regalato uno.
 because to her-of it have[3PL.PRS] given one
 ‘because they gave her one.’

The noun *astuccio* (pen bag) takes the definite article *l’* in the singular. Amy correctly provides the singular form *l’astuccio* in the above stretch of conversation. However, when using the noun in the plural, she correctly changes the ending vowel to *-i*, but seems to be assuming that the definite article *l’* is the initial sound of the noun and says *lastucci* instead of *astucci*.

In the course of the longitudinal study, there are other interesting instances of morphological operations that on the one hand suggest linguistic immaturity, but on the other show how much Ava already knows about morphology in general and Italian morphology in particular. There are instances where she fails to reproduce the full sequence

of phonemes that constitute the target word, but at the same time she is still capable of marking her shortened version of the target word with the correct inflection. In other instances, she literally creates new words to which she adds the appropriate morphological marking. Both types of instances are testimony to her morphological productivity. The former type of morphological operation is represented by words such as *zucco* for *zucchero* (*sugar*) (2;3.10 and 2;5.8), *panta* for *pantofola* (*slipper*) (2;9.19) and *albi* for *alberi* (*trees*) (2;10.15). The latter type includes *varicelli* for *foruncoli della varicella* (*chickenpox spots*) (2;7.10) and *versano* for *volano verso* (*they fly towards*) (2;9.19). These two morphological blends are discussed in more detail here below. We have just completed the elicitation task, when Ava turns to me and says that she has no longer got chickenpox spots.

(2;7.19)

- 6.19 *CHI: i miei varicell-i sono andati via.
the my pimple-M.PL be[3PL.PRS] gone away
‘my pimples have gone away.’
*INV: meno male!
less bad
‘that is good!’

Varicelli is not a word in Italian. She could either have said *la varicella è andata via* (*chickenpox is gone*) or *i foruncoli (della varicella) sono andati via* (*chickenpox’s spots are gone*). It appears that she blends the two nouns, *varicella* and *foruncoli*, and turns the abstract noun *varicella* into a concrete noun by replacing the feminine singular ending *-a* with the masculine plural ending *-i*. The other blend occurs two months later, while Ava is reading a picture book with her mother. The book’s illustrations depict various animals and insects; the mother reads a description and asks Ava to guess which animal or insect that is. The mother has just read the description of the butterfly and asks where the butterfly flies to.

(2;9.19)

- 6.20 *MOT: dove vol-a?
where fly-3SG.PRS
‘where does she fly to?’
*CHI: non lo so.
not it know
‘I don’t know.’
*MOT: vol-a verso le case?
fly-3SG.PRS towards the houses

‘does she fly towards the houses?’
 *MOT: dove vol-a?
 where fly-3SG.PRS
 ‘where does she fly to?’
 *CHI: gli uccellini vers-ano le case.
 the birdies toward-3PL.PRS the houses
 ‘birdies toward the houses.’
 *MOT: gli uccellini vol-ano verso le case?
 the birdies fly-3PL.PRS towards the houses
 ‘birdies fly towards the houses?’

The verb form *versano* appears to be a blend of the preposition *verso* (*towards*) and the verb *volare* (*to fly*), both of which have been used in the mother’s previous two utterances. It is worth pointing out once again that all these non-target forms could not be produced if endings had not been separated from stems and were not used with the intent to communicate a grammatical meaning.

6.4.4 Copula forms

The results for the analysis of present tense copula forms are summarised in Table 6.10. What emerges from this analysis is that Ava’s use of present tense copula forms is substantial from the beginning of the recording period. Copulas are used in the third person singular, the third person plural and, to a lesser extent, the first person singular. As in Amy’s case, the much more prevalent use of third person forms is a consequence of the fact that, during the play sessions, Ava is frequently engaged in the identification or the description of objects, toys and pictures, as a result of her parents’ attempt to elicit the maximum amount of speech from her. Indeed, the absence of tokens of other person-number combinations is due to the absence of obligatory contexts for their use. On one occasion only, a context occurs for a different person-number combination form, namely the second person singular, and Ava omits it. In this latter circumstance, Ava is being shown photos taken during a summer holiday in France. She recognises her mother on one of the photos and says *quella tu* (*that you*) (2;7.10), thus omitting the copula *sei* (*are*). The second person singular form of *essere* only appears in Ava’s speech samples in session six (2;6.6), where it is used as an auxiliary (see section 6.4.5). In her next utterance, she uses the same structure in the third person to identify herself and does not omit the copula *anche quella è Ava* (*also that is Ava*). The first person singular occurs only three times throughout

the sampling period in the structures *quella sono io* (*that is me* 2;5.8), *io sono grande adesso* (*I am big now* 2;8.0) and *perché sono più grande a sedere lì* (*I am too big to sit there*) (2;8.0).

The third person singular copula *è* occurs in 204 out of 209 obligatory contexts. As for this form, from the beginning of the sampling period, the structures that Ava uses are varied. It predominantly occurs in structures where the subject is constituted by a deictic pronoun. The following are just some of the examples that occur throughout the longitudinal study: *questa è l'uva* (*this is the grape* 2;0.26); *questa è la mamma* (*this is the mum* 2;2.6); *questa è la mia sedia* (*this is my chair* 2;4.10); *questo è il sole* and *quella sono io* (*this is the sun* and *that is me* 2;5.8); *quella è la mia macchina* (*that is my car* 2;6.6).

TABLE 6.10 Proportion of present indicative copula *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	29/31	-	-	4/6
2;2.6	-	-	8/8	-	-	1/1
2;3.10	-	-	31/31	-	-	2/3
2;4.10	-	-	11/12	-	-	1/1
2;5.8	1/1	-	10/10	-	-	2/2
2;6.6	-	-	24/26	-	-	3/3
2;7.10	-	0/1	14/14	-	-	5/5
2;8.0	2/2	-	30/30	-	-	1/1
2;9.19	-	-	19/19	-	-	9/9
2;10.15	-	-	6/6	-	-	4/4
2;11.14	-	-	12/12	-	-	1/1
3;0.18	-	-	10/10	-	-	6/6
Total C/OC	3/3	0/1	204/209	-	-	39/42
%	100%	-	98%	-	-	93%

However, there are also examples of a similar structure where the pronominal slot is left empty, in accordance with the null subject status of Italian: *è la Pimpa* (*is Pimpa* 2;0.26); *è il cane* (*is the dog* 2;2.6); *è la sveglia* (*is the alarm clock* 2;3.10); *è la barca* (*is the boat* 2;4.10); *è un cespuglio* (*it's a bush* 2;6.6); *è un adesivo* (*it's a sticker* 2;7.10); *è un pomodorino* (*it's a cherry tomato* 2;10.15); *è un anello* (*it's a ring* 2;11.14); *è una tavola* (*it's a table* 3;0.18). In two cases, a noun is used in the subject position: *Orso è un amico* (*Bear is a friend* 2;9.19); *è un po' buffa questa casa* (*it's a little funny this house* 2;9.19). In the latter example, there is inversion of the subject position. The two structures also differ

The third person plural occurs in 39 out of 42 obligatory contexts and is used in structures where the subject is constituted by a deictic pronoun or omitted. When the subject is left out an adjective or a noun is placed in the predicative position; when the subject is a deictic pronoun only nouns appear in the predicative position. In one case, the noun is accompanied by an adjective: *questi sono dei piccoli albi* (these are some small trees 2;10.15). Third person plural forms are also used in interrogative structures from the third last play session: *cosa sono questi?* (what are these? 2;10.15), *perché i suoi occhi sono rossi?* (why are his eyes red? 2;10.15). Although there are considerably fewer tokens of the third person plural copula form, there is evidence of contrastive use of singular and plural forms from the beginning of the longitudinal study: *questo è il gelato* (this is the ice cream) vs. *sono i gelati* (they are the ice creams) (2;0.26); *è il cane* (it is the dog) vs. *sono i bicchieri* (they are glasses) (2;2.6), *è la barca* (it is the boat) vs. *sono ciliege* (they are cherries) (2;4.10); *è bianco* (it is white) vs. *sono gialli e blu* (they are yellow and blue) (2;6.6.); *questo è un sapone* (this is a soap bar) vs. *sono i lecca lecca* (are the lollipops) (2;9.19); *perché questo è grande?* (why is this big?) vs. *perché i suoi occhi sono rossi?* (why are his eyes red?) (2;10.15); *è una tavola* vs. *sono dei pancake* (3;0.18).

(2;0.26)

(2;0.26)

The remaining three instances occur in the fourth and in the sixth session.

(2;4.10)

6.23 *CHI: questo il polipo.

this the octopus.

(2;6.6)

6.24 *CHI: questo piscina chiusa.

this swimming pool closed.

(2;6.6)

6.25 *CHI: quello mio formaggio.

that my cheese.

As for the third person plural, errors consist of an omission and two agreement deviations, where a third person singular copula form is provided in an obligatory context for a third person plural form. The omission error occurs in the first play session. Ava is reading the story of *Dora* with her mother who asks questions such as *what is/are this/these?* In answering one of these questions, Ava says *questi i muffin (these the muffins)*. Agreement errors occur in the first and in the third play sessions and in both cases the third plural copula is required by two third person singular subjects.

(2;0.26)

6.26 *CHI: questo è Pimpa e Gianni.

this is Pimpa and Gianni.

(2;3.10)

6.27 *CHI: è la luna e la banana.

it is the moon and the banana.

TABLE 6.11 Proportion of imperfect indicative copula *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	-	-	-	-
2;2.6	-	-	-	-	-	-
2;3.10	-	-	-	-	-	-
2;4.10	-	-	-	-	-	-
2;5.8	-	-	-	-	-	-
2;6.6	-	-	-	-	-	-
2;7.10	1/1	-	2/2	-	-	-
2;8.0	-	-	2/2	-	-	-
2;9.19	-	1/1	-	-	-	-
2;10.15	-	-	-	-	-	1/1
2;11.14	-	-	1/1	-	-	-
3;0.18	-	-	-	-	-	-
Total C/OC	1/1	1/1	5/5	-	-	1/1

The use of imperfect tense copula forms is quite limited. The results are summarised in Table 6.11. In total, there are only eight imperfect tense copula tokens. The first tokens appear in Ava's speech samples in the seventh play session. Here, the first and the third person singular forms are used contrastively: *io ero piccolina* (*I was young*) vs. *ma quello era più piccolino* (*it was younger*) and *era molto grande* (*it was very big*) (2;7.10), where she refers respectively to herself, a penguin she had seen in Marineland during the summer holiday in France, and to a boat. Third person singular forms occur again twice in the following play session, with the same adjective: *ma però non era molto grande* (*but he wasn't very old*) and *John era grande* (*John was big*) (2;8.0). The second singular form and the third person plural appear only once. The second person singular occurs in the ninth session: *eri arancione come me* (*you were orange like me*) (2;9.19). The third person plural appears in the samples the following month: *anche i miei occhi erano rossi* (*also my eyes were red*) (2;10.15).

This analysis shows that Ava can use both present tense and imperfect tense forms of the copula *essere*, although the imperfect forms appear from the seventh session and are used to a much lesser extent. The copula is predominantly used in third person forms but, as explained above, the bias towards third person contexts can be accounted for by limitations of the sampling regime. It is certainly noteworthy that despite such limitations, tokens of other person-number combinations emerge with respect to both the present and imperfect tense paradigms. There are no errors in the use of the imperfect tense. As for the present tense, target deviations are very few. Errors with the third person singular are exclusively omissions. However, the third person singular copula is provided in 98% of obligatory contexts throughout the study and at no point during the sampling period it occurs in fewer than 92% of obligatory contexts. This suggests that, at least with regard to third person singular contexts, Ava has knowledge of the obligatory nature of the copula from the beginning of the longitudinal study. The picture that emerges from the analysis of the third person plural is *prima facie* slightly different. Although it appears in 93% of obligatory contexts throughout the study and reaches point of acquisition from age 2;4.10, it is used in 67% of obligatory contexts at two points in time, the first and the third session. If one takes a closer look at the target deviations that occur in the sessions in question, the picture changes. Out of three errors that occur with the third person plural, only one is an

omission and it occurs in the first session. Hence, it appears that, from age 2;2.6 Ava has knowledge of the obligatory nature of the copula also with respect to third person plural contexts. The remaining two errors are number deviations, where a third person singular form is used. However, it is noteworthy that, just as with Amy, in both cases the plural status of the subject is not very transparent, because it is determined by the occurrence of two singular subjects. This circumstance suggests that even at a younger age, it is possible to observe emergence of productivity and systematicity to the patterns.

In addition, these number deviations are counterbalanced by clear evidence of contrastive use of singular and plural forms and contrastive use of person throughout the longitudinal study. Productivity is also signalled by the considerable variety of constructions in which copular forms appear. Ava produces structures where subjects are realised by DPs containing deictic pronouns, personal pronouns, interrogative pronouns, common nouns and proper nouns. The predicate is realised by DPs containing not just common nouns but also proper nouns, adjectives, personal pronouns and deictic pronouns. It is also noteworthy that copular structures are always language specific, i.e., often times the subject position is left empty and expletive subjects never appear. Hence, the data suggest that, just as in Amy's case, Ava's knowledge of the copula is language specific but not construction-specific, in the sense that it does not appear to be based not on a lexically specific construction.

6.4.5 Other uses of *essere*

The results for the uses of *essere* as a verbal predicate and an auxiliary are summarised in Table 6.12. As in Amy's data, with respect to these two other functions, tokens are not limited to first person singular and third person singular and plural forms. Indeed, two person-number combinations, never used as copula, also make their appearance in the samples, namely the second person singular and the first person plural. The third person singular appears in Ava's data from the beginning of the sampling period and occurs in 157 out of 159 obligatory contexts. It is used as an auxiliary, as a verbal predicate and in the existential construction. There are no agreement errors with this person-number combination but only omission errors, which are limited to the auxiliary function. As an auxiliary it appears in 26 out of 28 obligatory contexts and is used in present perfect

periphrases with seven verb types: *rompersi* (to break), *fare* (to do), *andare* (to go), *finire* (to finish), *sparire* (to disappear), *diventare* (to become), *passare* (to go away). The two finiteness deviations occur in contexts for the present perfect where only the past participle of the lexical verb is provided: (è) *finito lo yogurt*, *yogurt (has) finished* (2;0.26); (è) *caduto il mio fiore*, *my flower (has) fallen* (2;8.0). Incidentally, one can observe that, although the auxiliary is omitted, the utterances in question display subject inversion, which is a linguistic device that Italian and English do not share.

TABLE 6.12 Proportion of present indicative auxiliary *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	32/33	-	-	-
2;2.6	-	-	5/5	-	-	0/1
2;3.10	-	-	18/18	-	-	1/1
2;4.10	-	-	9/9	-	-	1/2
2;5.8	0/1	-	20/20	-	-	-
2;6.6	-	2/2	17/17	-	-	1/1
2;7.10	1/1	-	2/2	1/1	-	1/1
2;8.0	5/5	-	16/17	-	-	1/3
2;9.19	-	-	17/17	-	-	6/6
2;10.15	-	-	4/4	-	-	1/1
2;11.14	1/1	-	8/8	-	-	1/1
3;0.18	-	-	9/9	-	-	5/5
Total A/OC	7/8	2/2	157/159	1/1	-	18/22
%	87.5%	100%	99%	100%	-	82%

As a verbal predicate it is used in 131 out of 131 obligatory contexts and occurs in 81 out of 81 contexts in the construction DP+AUX+PP and in 50 out of 50 contexts in the existential construction. In the former construction, the use of the third person singular is quite varied: it appears in 60 out of 60 contexts with the meaning of *to be in a place*, in 20 out of 20 contexts with the meaning of *to belong to* and once with the meaning of *to be for*. With regard to the locative meaning, Ava asks or says where something or somebody is, as illustrated in the following examples: *dov'è il cappello?* (*where is the hat*) and *è qua il cappello* (*the hat is here* 2;0.26); *dov'è papà?* (*where is daddy* 2;2.6); *è qua la porta* (*the door is here* 2;3.10); *è in camera di Amy* (*it is in Amy's bedroom* 2;4.10); *dov'è Armando?* (*where is Armando?* 2;5.8); *dov'è Amy?* (*where is Amy?* 2;6.6); *Birillo è vicino alla mia casa* (*Birillo is near my house* 2;8.0); *dov'è un altro rosso?* (*where is another red?* 2;9.19);

dov'è lupo? (where is the wolf? 2;10.15); *dov'è la freccia?* (where is the arrow? 2;11.14); *ma la scala non è lì* (but the ladder is not there 3;0.8). As regards the possessive meaning, Ava produces utterances such as: *questo è mio* (this is mine 2;0.26); *è mia* (it is mine 2;3.10); *quello è mio* (that is mine 2;6.6); *è di Amy* (it is Amy's 3;0.18). As mentioned above, the meaning *to be for* only appears once: *un *muk è per mettere una cosa* (a *muk is for putting something 2;9.19).

The third person plural occurs in 18 out of 22 obligatory contexts. It is used as an auxiliary in one out of two obligatory contexts and as a verbal predicate in seventeen out of twenty contexts. Although the occurrences of the plural form *sono* are considerably fewer than the occurrences of the singular form *è*, there is evidence of contrastive use of singular and plural from the third session. The following are only some of the examples that appear in the data: *è qua la porta* (the door is here) and *lì sono le scarpe* (the shoes are there) (2;3.10); *il cioccolato è qui* (chocolate is here) and *dove sono le mie gocce?* (where are my drops?) (2;8.0); *un *muk è per mettere una cosa* (a *muk is for putting something) and *questi sono per fare le tigelle* (these are for making tigelle) (2;9.19); *è di Amy* (it is Amy's) and *questi sono di Amy* (these are Amy's) (3;0.18). Non-target forms with the third person plural include one finiteness error and three number deviations. The finiteness error consists of a root participle used in a context for the present perfect.

(2;4.10)

- | | | | |
|------|-------|----------------------|-------------------------|
| 6.28 | *MOT: | dove sono i bambini? | where are the children? |
| | *CHI: | no. | no. |
| | *MOT: | no cosa? | no what? |
| | *CHI: | andati via. | gone away. |
| | *MOT: | sono andati via. | they have gone away. |

Three months later, Ava correctly produces the auxiliary in the same structure and with the same verb type: *i miei varicelli sono andati via* (my chicken pox spots have gone away 2;7.10). As for the number deviations, two of them occur in locative structures: *dov'è i pezzi dell'elicottero?* (where is the pieces of the helicopter? 2;2.6); *dov'è i capelli di Cetto Rosso?* (where is Little Red Riding Hood's hair? 2;8.0). The third number deviation occurs in the existential construction, in the eighth session. Ava and her mother are imagining that they are at a restaurant and the mother takes the order. They are talking about a birthday

cake and the mother asks what is inside the cake.

However, the plural form *ci sono* appears from the fourth session in the samples and is used in the remaining nine obligatory contexts. The third person singular *c'è* appears from the beginning of the recording period and, as mentioned above, is used in all the 50 obligatory contexts. Prior to the fourth session, there are no obligatory contexts for the plural form; hence, there is no reason to assume that Amy cannot use this construction contrastively before the fourth session. It is from the fourth session though that there is clear evidence of contrastive use of singular and plural forms in relation to the construction in question, as shown in the following examples: *c'è la palla* (*there is the ball*) and *ci sono le pecorelle* (*there are the little sheep*) (2;4.10); *non c'è Amy* (*there is not Amy*) and *ci sono le nuvole* (*there are the clouds*) (2;6.6); *c'è una carota* (*there is a carrot*) and *ci sono le carote* (*there are the carrots*) (2;8.0); *qui ci sono le fragole* (*here there are the strawberries*) and *qui c'è un pomodoro* (*here there is a tomato*) (2;8.0); *qui c'è una scopa* (*here there is a broom*) and *ci sono tante costruzioni* (*there are many building blocks*) (2;8.0); *c'è un altro* (*there is another one*) and *ci sono degli altri* (*there are some others*) (3;0.8).

predicate *essere*, but Ava uses the third person singular instead. Ava and her mother are looking at photographs and she identifies her sister Amy and her granddad and then asks where she is in the photo.

(2;5.8)

- 6.30 *CHI: nonno ed Amy. granddad and Amy,
*CHI: anche io dov'è? also I where is?
*MOT: e tu dove sei? and where are you?
*MOT: secondo me eri a letto che dormivi. according to me you were
in bed sleeping.

It is worth pointing out that up until the preceding session, namely session four, Ava has always used the third person singular form of *essere* to refer to herself. Hence, the utterance in question appears to be a sort of transition where the third person singular is maintained in the verb form, but the first person singular form of the subject pronoun is provided. In session six, the first person singular form is not used and in the seventh play session, she correctly uses the first person singular *sono* for the first time and in the very same expression.

(2;7.10)

- 6.31 *CHI: io dove sono?, where am I?
*MOT: e qua non ci sei. and you are not here.
*MOT: non ci sei in tutte le foto. you are not in all photos.

In session seven, the first person singular occurs five more times with an auxiliary function but not in an obligatory context. Ava uses *essere* instead of *stare* as an auxiliary in present continuous periphrastic structures: *io sono mangiando il cracker* (*I am eating the cracker*); *sono bevendo l'acqua* (*I am drinking water*); *sono giocando con il caminetto* (*I'm playing with the little fire place*). In one instance, the mother seems to intervene with a corrective intent, but again in her reply Ava uses *essere* instead of *stare*. Ava is playing with *Lego* and says that she is making a little house.

(2;7.10)

- 6.32 *CHI: io sono facendo una casetta. I am making a little house.
*MOT: o stai facendo un ospedale? or are you making a
hospital?

*CHI: sono facendo un ospedale? am I making a hospital?

This same use is repeated again until the end of the recording period.

(2;10.15)

6.33 *MOT: cosa stai facendo adesso? what are you doing now?

*CHI: sono coprendo Mascia. I am covering Masha.

*MOT: stai coprendo Mascia. you are covering Masha.

(3;0.18)

6.34 *MOT: possiamo mettere insieme dei pezzi. we can put some pieces together.

*CHI: sono aspettando che mi dai la vite. I am waiting for you to give me the screw.

The borrowing of *essere* into the progressive construction is contemporary to the use of the target verb *stare* in the same construction. *Stare* appears in the progressive construction from the first play session. However, in the construction in question as well as throughout the data, *stare* is only used in the third person singular and the third plural and it never appears in the first person singular; *essere* never substitutes for *stare* in the third person singular and the third person plural. In the eighth session, the first person singular is used for the first time as an auxiliary in present perfect periphrases. The following are just three examples: *mi sono fatta male* (*I have hurt myself*) *mi sono battuta* (*I have hit myself*) and *e poi mi sono pulita* (*and then I have cleaned myself*) (2;8.0). In the second last play session, Ava is playing a *Masha and the Bear* version of the goose game and notices that she has already ended up on the spot where her mother is about to end up.

(2;11.14)

6.35 *CHI: io sono andata qui. I have gone here.

*MOT: tu eri andata lì you had gone there.

The first person plural only appears once in session seven and it is used as a verbal predicate. Ava is flicking through photos of the summer holiday on her mother's phone and identifies her holiday brush.

(2;7.10)

6.36 *CHI: quella è la spazzola che siamo in vacanza. that is the brush that we are on holiday.

*INV: è la tua spazzola per la vacanza? is it your brush for the holiday?

*MOT: sì.

yes.

With respect to the imperfect tense of *essere*, there are only five tokens but, as for the copula, no target deviations occur (Table 6.13). The third person plural is the first form that appears in Ava's speech samples. It is used in the existential construction in the seventh session: *c'erano i palloncini* (*there were the balloons* 2;7.10). It appears one more time in the existential construction (*c'erano tanti*, *there were many* 2;9.19) and as a verbal predicate (*dov'erano le formiche?*, *where were the ants?* 2;11.14). The third person singular is used in the existential construction (*non c'era l'acqua*, *there was no water* 2;9.19) and as an auxiliary in the pluperfect (*dove era finita?*, *where had it ended up?* 2;10.15). The only evidence of contrastive use of singular and plural forms is limited to the existential construction: *non c'era l'acqua*, *there was no water* and *c'erano tanti*, *there were many* (2;9.19). However, the use of the imperfect is too sparse to establish whether or not the forms that Ava produces are used productively.

TABLE 6.13 Proportion of imperfect indicative auxiliary *essere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	-	-	-	-
2;2.6	-	-	-	-	-	-
2;3.10	-	-	-	-	-	-
2;4.10	-	-	-	-	-	-
2;5.8	-	-	-	-	-	-
2;6.6	-	-	-	-	-	-
2;7.10	-	-	-	-	-	1/1
2;8.0	-	-	-	-	-	-
2;9.19	-	-	1/1	-	-	1/1
2;10.15	-	-	1/1	-	-	-
2;11.14	-	-	-	-	-	1/1
3;0.18	-	-	-	-	-	-
Total A/OC	-	-	2/2	-	-	3/3

Conversely, as far as the present tense is concerned, the data presented here suggest that the third person forms are used in an adult-like fashion. Like for the homophonous copula, errors with the third person singular are all omissions, which are counterbalanced by the substantial use that Ava makes of the verb form in question throughout the longitudinal study. Indeed, through the whole of the sampling period, the third person singular is provided in 99% of obligatory contexts and at no point it occurs in fewer than

94% of the contexts in which it is required. Overall, the third person plural is provided in 82% of obligatory contexts and only reaches point of acquisition at the age of 2;9.19. Hence, the first impression is that nine months elapse from first appearance in the samples to mastery of the third person plural, but again a deeper analysis of the target deviations changes the picture. Out of four target deviations, one is a finiteness error in a context for the present perfect and it takes place in session four. In session seven, the third person plural is correctly provided in the same periphrastic structure and with the same verb type. Two are number deviations in which the very same structure is used: *dov'è i pezzi dell'elicottero?* (*where is the helicopter pieces?*) (2;2.6) and *dov'è i capelli di Cetto Rosso?* (*where is Little Red Riding Hood's hair?*) (2;8.0). The structure in question also appears with singular nouns from the first session. The impression is that Ava is using *dov'è* as an unanalysed chunk with both plural and singular nouns. However, in session eight, which is when the second agreement deviation with this structure occurs, she also uses the correct third person plural form with a plural noun: *dove sono le mie gocce?* (*where are my drops?*). Therefore, if, with specific reference to this locative structure, there might seem to be a certain degree of lexical specificity in Ava's speech, from session eight she is also capable of using the target plural form. The third error is equally a number deviation, which occurs in session eight but in the existential construction. As mentioned above, in relation to this construction there is evidence of contrastive use of singular and plural forms from session four, which incidentally is when the third person plural of the homophonous copula reaches point of acquisition. Moreover, this number deviation takes place in a mixed utterance containing an English subject (*sweeties*). Amy's data present similar instances of number deviations in mixed utterances, thus suggesting that utterances where the plural verb form is required by an English plural noun may continue to be challenging until a much later stage in development. In sum, a more careful consideration of the data suggests that Ava can use singular and plural forms contrastively at least from the age of 2;4.10. In addition, predicative structures cover a great variety of meanings, namely the locative, the possessive and the *to be for* meaning. Similarly to what was observed for the copula, expletive subjects never appear while there are structures displaying VS word order. Hence, the data suggest that also with respect to the verbal predicate *essere* Ava's knowledge is language specific but not construction specific.

6.4.6 Auxiliary and verbal predicate avere

The results for *avere* are summarised in Table 6.14. In the data, *avere* is mainly used as an auxiliary. Indeed, out of 74 occurrences it is used as an auxiliary in present perfect periphrases 57 times and as a verbal predicate 17 times. The first person singular is the only form of the paradigm to be used from the beginning of the recording period. It appears in 28 out of 30 auxiliary contexts and in ten out of ten verbal predicate contexts. In the present perfect, it is used with 11 verb types: *fare* (to do), *mangiare* (to eat), *bere* (to drink), *vedere* (to see), *comprare* (to buy), *tagliare* (to cut), *trovare* (to find), *superare* (to overtake), *dire* (to say), *mettere* (to put) and *prendere* (to take). The third person singular appears in the samples in session two. It is used in three out of three verbal predicate contexts and as an auxiliary in 15 out of 17 obligatory contexts with eight verb types: *bere*, *comprare*, *mettere*, *disegnare* (to draw), *girare* (to turn), *regalare* (to donate), *fare* and *dare* (to give). The second person singular emerges in the data in the fifth play session. It is only used as an auxiliary and appears in all the seven obligatory contexts with five verb types: *prendere*, *vedere*, *dare*, *togliere* (to take off) and *dire*. The first person plural and the third person plural appear in the samples in session nine. The former occurs in all three verbal predicate contexts and in five out of five auxiliary contexts with five verb types: *portare* (to bring), *mettere*, *prendere*, *trovare* and *vedere*. On its first appearance in the samples, it is used four times, twice as an auxiliary and twice as a verbal predicate. Before then, it had systematically been omitted in all the three obligatory contexts that had arisen in session six, which were auxiliary contexts. The third person plural is only used three times: in session nine as a verbal predicate, in sessions eleven and twelve as an auxiliary with two verb types: *bagnare* (to get wet) and *regalare*.

As far as singular forms are concerned, there is evidence of contrastive use of person from session six. As plural forms only emerge in the speech samples from session nine, it is from then that there is evidence of contrastive use of number in both first and third person contexts. Target deviations are all finiteness errors, in which the auxiliary is omitted in present perfect periphrases. These non-finite forms occur in third person singular and first person singular and plural contexts. With regard to the third person singular, there are two finiteness errors. The first occurs in the second play session.

(2;2.6)

- 6.37 *MOT: Ava sei un disastro oggi. Ava you are a disaster today.
 *CHI: cosa fatto Ava? what Ava done?
 *MOT: cosa hai fatto? what have you done?
 *MOT: non parli! you don't talk!

The other finiteness error takes place in session five. Unlike in the previous example, Ava produces a non-matching non-finite form.

(2;5.8)

- 6.38 *MOT: cosa ha fatto Ava? what has Ava done?
 *CHI: fare un puzzle con papa. to make a puzzle with daddy.

TABLE 6.14 Proportion of present indicative auxiliary *avere* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	2/2	-	-	-	-	-
2;2.6	-	-	1/2	-	-	-
2;3.10	3/3	-	-	-	-	-
2;4.10	-	-	-	-	-	-
2;5.8	1/3	1/1	0/1	-	-	-
2;6.6	17/17	2/2	5/5	*0/3	-	-
2;7.10	-	-	-	-	-	-
2;8.0	3/3	-	2/2	-	-	-
2;9.19	3/3	-	4/4	4/4	-	1/1
2;10.15	1/1	1/1	2/2	2/2	-	-
2;11.14	1/1	3/3	2/2	1/1	-	1/1
3;0.18	7/7	-	2/2	1/1	-	1/1
Total A/OC	38/40	7/7	18/20	8/8	-	3/3
%	95%	100%	90%	100%	-	100%

In session five, two further omissions of the auxiliary *avere* occur in the expressions *fatto clina* (*fatto la collanina*, *made the necklace*) and *fatto così* (*done like that*) (2;5.8). In this session and up until the end of the longitudinal study, at times, Ava refers to herself by using the third person singular. Therefore, it is difficult to establish whether these omissions relate to first or third person singular contexts. However, because unlike in the preceding ones, there are no questions in previous utterances that clearly sets the context for the use of a third person and because Ava also uses the first person to refer to herself in the course of the same conversation, the omissions in questions have been attributed to first

person contexts. The last three finiteness deviations occur in session six and concern first person plural contexts. Ava is looking at photos on her mother phone.

(2;6.6)

6.39 *MOT: che cosa abbiamo fatto? what have we done?

*CHI: preso il gelato. taken the ice cream.

(2;6.6)

6.40 *MOT: che cosa abbiamo fatto? what have we done?

*CHI: fatto il limone. made the lemon.

(2;6.6)

6.41 *MOT: che cosa abbiamo fatto? what have we done?

*CHI: fatto yoga. done yoga.

In each case, the mother's question creates the context for the use of the present perfect. Since the samples do not contain evidence of knowledge of this person-number combination until session nine, these three finiteness deviations were not included in the count of missed opportunities for the use of the first person plural.

The use of the imperfect tense of *avere* is very marginal in Ava's speech samples. Only the first person singular and the third person singular are attested and they both appear once towards the end of the longitudinal study. In each case, *avere* is used as a verbal predicate: *il coniglio aveva Anna* (*Anna had the bunny* 2;10.15) and *ma io non avevo paura di te* (*but I was not afraid of you* 2;11.14). The former instance displays subject inversion. The data presented here show that the use of the present tense of *avere* is quite accurate as each person-number combination is provided in at least 90% of obligatory contexts. All the person-number combinations of the paradigm are represented in the speech samples with the exception of the second person plural, but the plural forms appear at a later stage, when Ava is 2;9.19. Despite having a 100% accuracy rate, the second person singular and the third person plural never reach point of acquisition. The first person plural reaches point of acquisition on its first appearance in the samples at the age of 2;9.19. No agreement errors occur with *avere* throughout the data, but target deviations are exclusively finiteness errors in contexts for the present perfect and cease after session six. As a verbal predicate *avere* is never omitted; hence, the data suggest that Ava has knowledge of the obligatory nature of the use of the verbal predicate *avere* from the beginning of the sampling period.

6.4.7 Plural noun inflections

The results for plural noun markers are summarised in Tables 6.15 and 6.16, which show accuracy rate and the number of noun types appearing with plural inflections in each session and throughout the longitudinal study. The use of plural noun inflections is very accurate. In total, plural markers are provided in 149 out of 150 obligatory contexts.

TABLE 6.15 Proportion of plural noun inflections in obligatory contexts

Age	a-e	o-i	e-i	a-i
2;0.26	4/5	7/7	-	-
2;2.6	-	1/1	3/3	-
2;3.10	1/1	4/4	2/2	-
2;4.10	3/3	-	1/1	-
2;5.8	3/3	1/1	1/1	-
2;6.6	11/11	9/9	-	-
2;7.10	4/4	10/10	3/3	-
2;8.0	6/6	8/8	4/4	-
2;9.19	15/15	10/10	2/2	-
2;10.15	4/4	5/5	-	-
2;11.14	4/4	5/5	8/8	-
3;0.18	1/1	7/7	2/2	-
Total I/OC	56/57	67/67	26/26	-

With respect to the *-a* → *-e* group, the *-e* ending is used from the beginning of the sampling period. It appears with 27 noun types and occurs in 56 out of 57 obligatory contexts. There is one agreement error, where Ava uses the singular instead of the plural, and occurs in the first session. Ava and her mother are reading a story of *Pimpa*. Ava identifies some of the items depicted in the storybook and says *mela* (*apple*) instead of *mele* (*apples*).

(2;0.26)

- | | | | |
|------|-------|--------------------------|-------------------------|
| 6.42 | *MOT: | e qua cosa c'è? | and here what is there? |
| | *CHI: | questa è l'uva. | this is the grape. |
| | *MOT: | l'uva sì. | grape yes. |
| | *CHI: | queste so [: sono] mela. | these are apple |
| | *MOT: | sì, quelle sono mele. | yes, those are apples. |

In the same session, Ava uses the same marker in the remaining four obligatory contexts

and with three different noun types. After the first session, the *-e* marker appears in all the contexts in which it is required. As for the *-o* ➔ *-i* group, the *-i* marker equally appears from the start of the longitudinal study. It is used with 42 noun types and in all the 67 obligatory contexts. Plural nouns belonging to the *-e* ➔ *-i* group appear in Ava's spontaneous speech samples from the second play session. The *-i* plural marker appears with 15 noun types and is used in all the 26 obligatory contexts. Plural nouns belonging to the *-a* ➔ *-i* group never appear in her speech samples.

TABLE 6.16 Appearance of plural noun inflections with different noun types

Age	a-e	o-i	e-i	a-i
2;0.26	3	6	-	-
2;2.6	-	-	2	-
2;3.10	-	2	-	-
2;4.10	3	-	1	-
2;5.8	2	1	1	-
2;6.6	5	6	-	-
2;7.10	1	6	2	-
2;8.0	5	5	2	-
2;9.19	4	6	2	-
2;10.15	2	2	-	-
2;11.14	2	5	4	-
3;0.18	-	3	1	-
Total	27	42	15	-

Bold indicates the appearance of new plural markers

The data show that the three plural markers that appear in Ava's Italian samples are acquired by the age of 2;3.10; as for the *-o* ➔ *-i* and the *-e* ➔ *-i* groups, point of acquisition coincides with first appearance of the morphemes in the samples. The error rate associated with each marker ranges between 0% and 2%, thus showing that each individual ending is provided with a very high degree of reliability. Not only are plural suffixes used in virtually all the obligatory contexts, but they also appear with a large number of different noun types, which suggests that they are used in a productive fashion.

6.5 The elicitation task

The elicitation task was administered in the course of the seventh play session, when Ava was 2;7.10. Both the Italian and the English tasks were administered when the two children

were at different ages. Amy was 2;11.15 when the Italian task was administered and 3;0.14 when she performed the English task. Ava was 2;9.19 when the English task. This circumstance was determined by the fact that the two children entered the study at different ages. In the original source study, the youngest sample group was aged between 2;5 and 3;1. Amy entered the study when she was 2;10.18 and the task could be administered right away, or at least after the first session, so that familiarisation with the investigator had been reinforced. The English task was administered the following session. Ava was only 2;0.26 when she entered the study, thus it seemed appropriate to wait until she reached the age of the youngest children in the original source study. In sessions five and six, the task could not be administered because of time constraints and it was administered in session seven. For the same reason the English task was administered in session nine instead of session eight. Furthermore, the aim of the present study was not to compare the linguistic development of the two children but rather compare and describe patterns of acquisition of Inflection across their two languages.

The results for the elicitation task are summarised in Table 6.17, which also presents the occurrences of the same morphemes in the spontaneous speech data collected from session one to session seven. There is a marked contrast between Ava's use of the target inflectional items in the spontaneous speech samples and in the elicitation task. For example, out of four probes she provided the third person singular copula form only twice, but in her spontaneous speech samples omissions with third person singular copula forms are very rare and end in session six. Through the whole of the sampling period, the verb form in question never appears in fewer than 92% of obligatory contexts and overall occurs in 98% of obligatory contexts. With respect to the third person plural copula form, she never produced the target answer, but in spontaneous interaction, errors with this verb form end in session three, i.e., four months before the elicitation task was administered. Throughout the study, the third person plural copula form occurs in 93% of obligatory contexts. It is worth recalling that there is only one omission error, which occurs in the first session, and that the remaining two errors are number deviations occurring in contexts where the plural verb form is required by two singular subjects and not by a plural noun. The comparison with spontaneous performance suggests that the poor score obtained may

be accounted for by the fact that the task was not fully understood. Indeed, six times out of eight Ava did not use the copula in her answer.

Ava's performance did not improve with the plural noun probes. In seven instances, she misidentified the items depicted in the pictures, three times she did not answer at all, in one case her answer was unclear and in one case she used a masculine marker for a feminine noun. As anticipated in section 6.4.3, the latter instance is of interest because it may be regarded as an example of intra-linguistic borrowing.

6.43 Probe	Target answer	Child's answer
qui ci sono i fiori, qui cosa vedi?	le carote	i caroti
here there are flowers, what do you see here?	carrots	carrots

The noun *carota* (*carrot*) is feminine in Italian and belongs to the *-a* → *-e* group. Ava appears to be treating it as a masculine noun, because she uses the masculine plural marker *-i* and the masculine plural definite article *i*. This form cannot be disregarded as a gender deviation owing to the use of the agreeing form of the definite article. Quite to the contrary, it suggests that the marker *-i* is being added on the basis of a productive rule to express the semantic property of plurality.

TABLE 6.17 Responses for the elicitation task in Italian

Grammatical morpheme	Score	S 1	S 2	S 3	S 4	S 5	S 6	S 7
3ps copula	2/4	29/31	8/8	31/31	11/12	10/10	24/26	14/14
3pp copula	0/4	4/6	1/1	2/3	1/1	2/2	3/3	5/5
<i>a-e</i> group	0/4	4/5	-	1/1	3/3	3/3	11/11	4/4
<i>o-i</i> group	1/4	7/7	1/1	4/4	-	1/1	9/9	10/10
<i>e-i</i> group	1/4	-	3/3	2/2	1/1	1/1	-	3/3
3ps <i>are</i> group	0/3	5/5	1/1	6/6	6/6	4/4	16/16	0/2
3pp <i>are</i> group	0/3	4/5	-	-	-	-	-	-
3ps <i>ere</i> group	2/3	2/3	2/2	-	5/5	-	1/1	1/1
3pp <i>ere</i> group	0/3	1/1	-	-	-	-	-	1/1
3ps <i>ire</i> group	1/3	-	1/1	3/3	-	-	3/3	-
3pp <i>ire</i> group	0/3	-	-	-	-	-	-	-

As for the items that were misidentified, only in two cases, the plural nouns she produced happened to bear the same endings as the ones requested by the target answers

and, therefore, they could be included in the count of the correct answers as shown in the examples below.

6.44 Probe	Target answer	Child's answer
qui ci sono i serpenti, qui cosa vedi?	i topolini	i coniglietti
here there are snakes, what do you see here?	little mice	bunnies
6.45		
qui ci sono i gatti, qui cosa vedi?	gli elefanti	i leoni
here there are cats, what do you see here?	elephants	lions

In the remaining five probes, the answers Ava provided did not bear the target morpheme. For example, one of the probes for the $-a \rightarrow -e$ group showed hens but Ava thought they were kittens. The Italian word for *hens* is *galline* and belongs to the $-a \rightarrow -e$ group, but the word for *kittens* is *gattini* and belongs to the $-o \rightarrow -i$ group. Hence, her response could not be included in the count of the correct answers. However, if one wants to take into account all the plural noun forms she actually supplied, even if they did not match the morpheme requested by the target answer, then the picture changes slightly. She produced two plural nouns belonging to the $-a \rightarrow -e$ group (*mucche*, *cows*, and *farfalle*, *butterflies*), four plural nouns belonging to the $-o \rightarrow -i$ group (*pomodori*, *tomatoes*, *gattini* and *coniglietti*) and one plural noun belonging to the $-e \rightarrow -i$ group (*leoni*). Even with this adjustment her performance does not come close to what was observed in her spontaneous data, where there are simply no errors with the plural marker $-i$ in both noun groups and the feminine plural marker $-e$ reaches point of acquisition by age 2;3.10 and is since always used in a target-like fashion.

With respect to present tense third person endings, out of 18 probes Ava only provided three target answers. However, none of the non-target responses was constituted by ungrammatical forms or agreement errors. In four cases, she did not provide any answer; on one occasion, she used the imperfect *piangevano* (*they were crying*) instead of the present tense *piangono* (*they cry*). In the remaining ten probes, she used the present continuous instead of the simple present. As mentioned in relation to Amy's similar responses, the use of the present continuous is contextually plausible, but present continuous forms could not be included in the count of the correct answers. All the answers with a verb form matched the target in person and number.

6.6 The English spontaneous data

6.6.1 Present indicative person-number combinations

The results for the present indicative person-number combinations are summarized in Tables 6.18-6.20. Only two person-number combinations, the first person singular and the first person plural, appear from the first play session, where they are used with two and one verb types respectively (Table 6.18).

TABLE 6.18 Appearance of person-number combinations with different verb types

MLU	Age	1ps	2ps	3ps	1pp	2pp	3pp
1.9	2;0.26	2			1		
1.8	2;2.6	1	1		1		1
2.0	2;3.10	2					
1.9	2;4.10	7					
3.0	2;5.8	3	1	3	1		
3.0	2;6.6	5	1	2	1		1
2.7	2;7.10	2	1	1			
2.8	2;8.0	6	4	1	1		
2.8	2;9.19	6	1	2			
2.8	2;10.15	6	3	3			2
2.3	2;11.14	5					
2.7	3;0.18	5					

Blue font highlights the appearance of new person-number combinations

The first person singular is used in 205 out of 207 obligatory contexts (Table 6.20). It is the only person-number combination that is used in each session and appears with 16 verb types throughout the sampling period (*open, want, make, like, do, need, know, think, can, put, go, use, see, play, say, paint*). In two instances, the first person singular personal pronoun is omitted. The first instance occurs in the third play session when Ava is 2;3.10. We are sitting at the dinner table. There is a large window on the ceiling and Ava is looking at the images reflected on the glass. Her father is asking about the story she read earlier with her mother and suddenly Ava says she cannot see something, without specifying what she is referring to (*can't see it*, 2;3.10). The omission of the first person singular subject pronoun is repeated again in the fifth play session. Ava is reading a story of *Pimpa* with her father and she is probably referring to some object mentioned in the story, but even her father does not seem to understand what she means. This time she corrects herself in the next utterance.

(2;5.8)

6.46 *CHI: can't see it.

*FAT: can't see it?

*CHI: I can't see it.

*FAT: you can't see what?

TABLE 6.19 Proportion of inflected and bare forms in third person singular contexts

Age	Inflected forms	Bare forms	Proportion in obligatory contexts
2;0.26	-	-	-
2;2.6	-	-	-
2;3.10	-	-	-
2;4.10	-	-	-
2;5.8	12	-	12/12
2;6.6	2	-	2/2
2;7.10	1	1	1/2
2;8.0	3	-	3/3
2;9.19	5	-	5/5
2;10.15	4	1	4/5
2;11.14	-	1	0/1
3;0.18	-	-	-

The first person plural appears in all the six obligatory contexts that present themselves throughout the sampling period and is used with four verb types (*do, fix, need, can*). The second person singular and the third person plural appear for the first time in the samples in the second session. The former appears in all the 21 obligatory contexts that arise in the course of the longitudinal study. It is used with nine different verb stems (*like, think, jump, can, need, go, play, want, know*). The latter is used in eight out of eight obligatory contexts and appears with two different verb stems through the whole of the longitudinal study (*go* and *watch*).

TABLE 6.20 Proportion of person-number combinations in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	2/2	-	-	1/1	-	-
2;2.6	1/1	2/2	-	1/1	-	3/3
2;3.10	4/5	-	-	-	-	-
2;4.10	8/8	-	-	-	-	-
2;5.8	9/10	1/1	12/12	1/1	-	-
2;6.6	10/10	1/1	2/2	1/1	-	1/1
2;7.10	30/30	1/1	1/2	-	-	-
2;8.0	20/20	10/10	3/3	2/2	-	-
2;9.19	39/39	1/1	5/5	-	-	-
2;10.15	41/41	5/5	4/5	-	-	4/4
2;11.14	17/17		0/1	-	-	-
3;0.18	24/24	-	-	-	-	-
Total	205/207	21/21	27/30	6/6	-	8/8
%	99%	100%	90%	100%	-	100%

The third person singular is used for the first time in the fifth play session. Throughout the longitudinal study, the third person singular marker is provided in 27 out of 30 obligatory contexts and is used with eight verb types (*need, want, use, get, go, do, live, pass*). In three instances, bare forms are used in a context where the third person singular marker is required (Table 6.19). The first instance occurs in the seventh play session. Ava is reading a story with her father.

(2;7.10)

6.47 *FAT: what happens next?

*CHI: he open the door.

*FAT: who opens the door?

*CHI: Alfie.

The second instance occurs in the tenth play session. Ava is reading a story of *Masha and the Bear* with her father.

(2;10.15)

6.48 *FAT: where does the panda live?

*CHI: the panda live with his daddy.

*FAT: the panda lives with the daddy and the mummy.

However, the third person is correctly inflected just a few utterances earlier with the very same verb type.

(2;10.15)

6.49 *FAT: and where does the panda live?

*CHI: I don't know.

*FAT: in the zoo maybe?

*CHI: no.

*FAT: no?

*FAT: in China?

*CHI: no.

*CHI: she lives with her mummy.

The last instance occurs in the eleventh play session. Ava is colouring and complains about her sister Amy who has the habit of taking all her felted pens out of her pen bag.

(2;11.14)

6.50 *FAT: are they your colours?

*CHI: Amy take all my colours out.

The data presented here show that the use of present tense person-number combinations is accurate, because there are no agreement errors and the target personal pronouns appear in all the obligatory contexts that arise throughout the longitudinal study. Only the first person singular pronoun is omitted twice but, throughout the study, it is provided in 99% of obligatory contexts and only in session three it occurs in fewer than 90% of obligatory contexts. The first person plural and the third person plural do not reach point of acquisition, even though they appear in 100% of the contexts in which they are required. Conversely, the third person singular marker does not reach point of acquisition despite being used over six consecutive sessions. Indeed, even if the marker in question overall appears in 90% of obligatory contexts, in three sessions, it is provided in fewer than 90% of obligatory contexts. More precisely it appears in 50% of obligatory contexts in session seven, in 80% of obligatory contexts in session ten and it is not provided in the only context that arises in session eleven.

6.6.2 Simple past

The results for regular, irregular, negative and target deviant past tense forms are summarised in Table 6.21. There are 13 verbs used in the simple past, three of which are regular (*play, close, dress*) and ten of which are irregular (*do, cut, go, hurt, tell, break, make, forget, fall, buy*). The irregular verb *cut* only occurs in a negative sentence, which brings the count of irregular verbs to nine. With respect to the three regular verbs and to five of the irregular ones (*hurt, tell, break, do, forget*), Ava exclusively provides the correct past forms. The picture is more complex for the remaining four irregular verbs (*fall, make, buy, go*). The verb *to fall* is only used in the non-target form *fallen down*. The overgeneralisation occurs right at the beginning of the sampling period. Ava and her father are reading *Frozen*.

(2;0.26)

6.51 *FAT: what's that?

*CHI: it's Max.

*FAT: what's Max doing?

*CHI: he falled down.

*FAT: he fell down?

*CHI: yeah.

TABLE 6.21 Appearance of past tense forms

Age	ed	negatives	interrogatives	overgeneralisations	borrowings	irregulars
2;0.26				1		3
2;2.6						
2;3.10				2		2
2;4.10	1			2		
2;5.8						
2;6.6		6		2		4
2;7.10	1					
2;8.0	1	2	4	1	5	2
2;9.19						
2;10.15						
2;11.14					1	3
3;0.18	1	1				1

The verb *to make* occurs in the non-target form of *maked* in the third, fourth and sixth sessions, but it seems to have been replaced by the target past form by the eighth session. In the third session, we are all sitting at the dinner table and her father asks what she is eating.

(2;3.10)

6.52 *FAT: what is it?

*CHI: mummy maked it.

*FAT: did mummy make it?

*CHI: yeah.

*CHI: I maked this.

*FAT: did you make this?

*CHI: yeah.

In the very next session, this same overgeneralisation error occurs again. Ava's father asks her about the previous night's dinner.

(2;4.10)

6.53 *FAT: are you sure mummy didn't make potatoes?

*CHI: no.

*FAT: and did you have dessert last night?

*CHI: yeah.

*FAT: and what did you have for dessert?

*CHI: mummy maked it.

*FAT: mummy made dessert?

*CHI: yeah.

*FAT: what was dessert?

*CHI: daddy maked it.

*FAT: daddy made it?

*FAT: what did daddy make for dessert?

The father provides the target past form but Ava does not repeat it. Two months later, Ava is still making the same overgeneralisation error with the same verb. Ava is sitting on the windowsill and is looking on to the front garden. She remembers that her Italian granddad had cut the grass in the garden.

(2;6.6)

- 6.54 *CHI: ho tagliata l'erba I have cut the grass.
*INV: hai tagliato l'erba tu? was it you who cut the grass?
*CHI: il nonno. granddad.
*INV: ah, il nonno! ah, granddad!
*FAT: did daddy cut the grass?
*CHI: no, you didn't.
*FAT: no?
*FAT: did I not cut the grass last week?
*CHI: no!
*FAT: no?
*CHI: you didn't do last week.
*FAT: did I not?
*CHI: no.
*FAT: okay.
*CHI: granddad did last week.
*CHI: he maked the +...
*CHI: he maked the erba.
*FAT: he made the grass?
*CHI: yeah.

As in all the previous instances, the father presents the target past form *made* in his next utterance and once again Ava does not repeat it. Two sessions later, in session eight, the target verb form *made* appears in her speech samples. We are at the beginning of the English part of the play session. Ava has been playing with *Lego* with her mother and has

(2;8.0)

- 6.55 *FAT: Ava, what did you make?
*CHI: look what I made.
*FAT: very nice, Ava.
*FAT: is that your car?

However, the same type of overgeneralisation error with past verb forms occurs in that same session with the verb *to buy*.

(2;8.0)

6.56 *FAT: next time we do the puzzle of the beach?

*CHI: yeah.

*CHI: we did buy in France the puzzle of the beach.

*FAT: what did we do in France?

*CHI: we buyed the puzzle of Dora.

*FAT: we bought the puzzle of Dora?

Once again the father provides the target past form.

In this stretch of conversation, *buy* is used in the non-target forms of *did buy* and *buyed*. The former represents an instance of intra-linguistic borrowing. It is precisely from this play session (2;8.0) that this type of intra-linguistic borrowing for simple past verb forms appears in Ava's speech samples. Indeed, within the same session four other instances take place with the verb *to go*: *she did go out*; *she did go*; *mummy did go out*; *she did go in the car*. Four months later, the same verb is used in both a target and a non-target fashion within the same stretch of conversation.

(2;11.14)

6.57 *FAT: and did you go anywhere with mummy yesterday?

*FAT: before the treat or tricking?

*FAT: did you stay at home?

*FAT: or did you go with mummy somewhere?

*CHI: I did go with the car.

*FAT: you went with the car.

*FAT: where did you go with the car?

*CHI: I went for walk.

*CHI: I went for walk at the house.

It could be objected that here Ava is primed by the verb forms that her father uses, but the above examples from previous sessions seem to suggest that this might not be the case. In sessions one, four, six and eight the father equally provides the target verb forms when Ava produces overgeneralisation errors, but she does not repeat any of them. In sessions three, four, six and eight the father similarly uses *did* in interrogative structures, but that does not trigger the use of *did* as a tense marker in Ava's replies.

The data presented here show that, although the first target form with a regular verb appears in the fourth session, the first overgeneralisation error occurs in session one. This circumstance is noteworthy because it suggests that the morpheme *-ed* has been isolated and is being used as a tense marker from the beginning of the longitudinal study. Furthermore, the past tense inflection is correctly provided in all the obligatory contexts that arise throughout the sampling period. The analysis also clearly shows that target and non-target forms coexist in Ava's speech. Indeed, the first target irregular form appears in session one as does the first overgeneralised verb form. Intra-linguistic borrowings occur in the eighth and in the eleventh sessions and they exclusively concern irregular verbs. While overgeneralisation errors with a specific verb form appear to cease when the target lexical form has been learnt, the use of *did* as a tense marker and the use of the relative target form seem to coexist.

6.6.3 Tenses moods and verb stems

Ava uses 43 verb types of which 23 are used in the present indicative. With respect to the present simple, eight verb types are used with the third person singular, eight with at least two different person-number combinations and four with at least three person-number combinations. The relatively low number of verbs used in the present indicative can be accounted for by the fact that, unlike in Italian, in English Ava often uses the present progressive. Thirteen verbs are used in the present progressive and of those only three are also used in the present indicative. If one also includes the verbs used with the *-ed* marker the total of verbs used in non-compound tenses rises to 27. The analysis of the use and the emergence of tenses and moods (Table 6.22) shows that a range of tenses is represented in Ava's English data. The simple present, the present continuous and the simple past are already present in her speech samples from the beginning of the longitudinal study. New tenses continue to emerge as the data collection goes along: the past continuous appears in session five, the future continuous in the sixth session, the simple future and the present perfect in session ten.

TABLE 6.22 Emergence of tenses and moods in English

Age	Tense	Mood
2;0.26	Pres/PresCont/SimPast	Ind/Imp
2;2.6	Pres	Ind
2;3.10	Pres/PresCont /SimPast	Ind
2;4.10	Pres/SimPast	Ind
2;5.8	Pres/PresCont/ PastCont	Ind
2;6.6	Pres/PresCont/ FutCont /PastCon/SimPast	Ind
2;7.10	Pres/PresCont/FutCont/SimPast	Ind/Imp
2;8.0	Pres/PresCont/PastCont/SimPast	Ind/Imp/ ImpNeg
2;9.19	Pres/PresCont/PastCont	Ind/Imp
2;10.15	Pres/PresCont/ PresPerf/Fut	Ind/Imp
2;11.14	Pres/PresCont/FutCont/SimPast/PastCont	Ind
3;0.18	Pres/PresCont/SimPast	Ind

The emergence of new tenses and moods is highlighted in bold

6.6.4 Copula forms

The results for the analysis of present tense copula forms are summarised in Table 6.23. Copula forms appear in the third person singular and, more marginally, the third person plural and the first person singular. As mentioned in the analysis of the Italian copula forms, the absence of tokens of other person-number combinations can be accounted for by the absence of obligatory contexts for their use. The third person singular appears from the first session and occurs in 97% of obligatory contexts. The four errors with third person singular forms are omissions and they all occur in the first play session (*this another house*, *this Ava house*, *this daddy house*, *this mummy's hand* 2;0.26). Nevertheless, in the first session, the copula is provided in 90% of obligatory contexts, as it appears in the remaining 38 obligatory contexts. In addition, third person singular copula forms occur in a great variety of structures, such as deictic pronoun + copula + common noun (e.g., *that's the horsie* 2;0.26; *that's my spoon* 2;3.10; *this is a butterfly* 2;4.10; *this is a game for boys* 2;10.15), deictic pronoun + copula + adjective (e.g., *that's too heavy* 2;2.6; *that's a bit dangerous in bed* 2;5.8; *that's the same* 2;9.19), deictic pronoun + copula + adjective + common noun (e.g., *that's another house* 2;0.26; *that's another blanket* 2;5.8), expletive

pronoun + copula + common noun (e.g., *it's not fruit*; *it's a motorbike*, 2;0.26; *it's a dolly* 2;5.8; *it's the puzzle* 2;8.0; *it's Amy's butterfly* 3;0.18), expletive pronoun + copula + proper noun (e.g., *it's Max* and *it's not Max*, 2;0.26), expletive pronoun + copula + adjective (e.g., *it's stuck* 2;0.26; *because he is not able to open the door and he is too big* 2;7.10; *it's all dirty* and *it's cold* 2;8.0; *she is scared of snails* 2;10.15), expletive pronoun + copula + adjective and noun (e.g., *it's a bigger garden* 2;8.0), common noun + copula + adjective (e.g., *that colour is too big* 2;4.10; *the camera is broken* 2;8.0), common noun + copula + common noun (*mum is a mum* 2;9.19), proper noun + copula + common noun (*Amy is my friend* 2;9.19). The third person singular copula also occurs in interrogative structures, where the subject is represented by a deictic pronoun (*is that pineapple?* 2;3.10; *is that Malahide castle?* 3;0.18) or by an interrogative pronoun (*what is this?* *what is that?* and *who is this?* 2;0.26; *what is this noise?* 2;10.15; *what is it?* 3;0.18). In one case, the predicate is constituted by a full sentence: *that's how I make grass* (2;11.14).

The third person plural form is used for the first time in the third session. There are only seven tokens of the third person plural copula. Again, this is likely due to the lack of obligatory contexts as suggested by the absence of missed opportunities. In other words, Ava never fails to provide the third person plural form each time a context for its use presents itself. As for third person contexts, the data provide some evidence of contrastive use of singular and plural forms from the third session (e.g., *these are pineapples* and *this is the pineapple*, 2;3.10; *they are ducks* and *it's not chocolate sweet*, 2;4.10; *they are wheels* and *it's a dolly* 2;9.19; *these are my colours* and *this is Frozen colour*, 2;11.14). The first person singular appears for the first time in the eighth session. There are only ten tokens of this form. Despite the few occurrences and the fact that this person-number combination does not allow for much variation with regard to the subject position, structures are quite varied. Indeed, predicates are realised as DP containing adjectives (*I am too big* 2;8.0; *now I'm bigger/I'm bigger enough/I'm bigger of Amy/no because I am not smaller than Amy* 2;9.19; *I'm too busy* 2;10.15), a numeral (*I'm two* 2;9.19), a proper noun (*I'm not Amy* 2;9.10), and a common noun (*I'm not a boy* 2;10.15). On one occasion, the copula is used in a short answer to an affirmative sentence:

(2;10.15)

6.58 *FAT: you are a boy.

*CHI: no, I am not.

TABLE 6.23 Proportion of present tense copula *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	38/42	-	-	-
2;2.6	-	-	2/2	-	-	-
2;3.10	-	-	9/9	-	-	1/1
2;4.10	-	-	12/12	-	-	1/1
2;5.8	-	-	11/11	-	-	-
2;6.6	-	-	9/9	-	-	-
2;7.10	-	-	7/7	-	-	-
2;8.0	1/1	-	10/10	-	-	-
2;9.19	6/6	-	11/11	-	-	1/1
2;10.15	3/3	-	16/16	-	-	-
2;11.14	-	-	2/2	-	-	4/4
3;0.18	-	-	4/4	-	-	-
Total C/OC	10/10	-	131/135	-	-	7/7
%	100%	-	97%	-	-	100%

Some of these structures are very similar to the Italian first person singular copular constructions: *I am too big* (2;8.0) and *now I'm bigger* (2;9.19) closely mirror *io sono grande adesso* (2;8.0) and *perché sono più grande a sedere lì* (2;8.0).

The use of imperfect tense copula forms is limited to the third person singular and the third person plural. In total, there are five tokens: four third person singular forms and one third person plural form (Table 6.24). The third person singular form occurs for the first time in the ninth session. Ava and her father are reading *Wheels on the bus* and the father is asking her to identify the animal characters.

(2;9.19)

6.59 *FAT: it's an alligator.

*CHI: nope!

*FAT: what's nope?

*CHI: a crocodile.

*CHI: I think it was a crocodile.

The remaining four tokens appear in the eleventh session, where the third person plural form is also used: *they were not boys* (2;11.14).

TABLE 6.24 Proportion of imperfect tense copula *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	-	-	-	-
2;2.6	-	-	-	-	-	-
2;3.10	-	-	-	-	-	-
2;4.10	-	-	-	-	-	-
2;5.8	-	-	-	-	-	-
2;6.6	-	-	-	-	-	-
2;7.10	-	-	-	-	-	-
2;8.0	-	-	-	-	-	-
2;9.19	-	-	1/1	-	-	-
2;10.15	-	-	-	-	-	-
2;11.14	-	-	3/3	-	-	1/1
3;0.18	-	-	-	-	-	-
Total C/OC	-	-	4/4	-	-	1/1

The data analysis shows that, with respect to the present tense, Ava can use third person forms contrastively from session three. While for the third person singular point of acquisition coincides with first appearance in the samples, the third person plural does not reach a threshold of acquisition. Once again, this appears to be imputable to the absence of obligatory contexts as there are no errors of omission or agreement with the third person plural copula form. In addition, just as in Italian, the structures that appear in the data include a multiplicity of subjects and predicates. Subjects are realised as DPs containing not just deictic pronouns but also expletive pronouns, common nouns, proper nouns and interrogative pronouns. Predicates are realised as DPs containing common nouns, adjectives, adjectives and common nouns and proper nouns. Such a range of structures suggests that in English too Ava's knowledge of the copula is not limited to a lexically specific construction.

6.6.5 Other uses of *to be*

The results for the use of the present tense of *to be* as an auxiliary and a verbal predicate are summarised in Table 6.25. In relation to the other uses of *to be* also, the picture that emerges from the English data is quite similar to what was observed for Italian. The main

difference concerns the use of the existential construction, which is more marginal in English. In the English data too, the third person singular is the most prevalent form and it is used in a variety of constructions. As an auxiliary it appears in 23 out of 23 obligatory contexts. However, while the auxiliary *è* exclusively appears in present perfect periphrases, the auxiliary *is* mostly occurs in present progressive periphrases. In the present continuous, it appears with 11 verb types (*cry, work, hide, sit down, stand, go, push, put, climb, walk, come*). Only on one occasion, it is used in a present perfect periphrastic structure: *where is Amy gone?* (2;10.15). As a verbal predicate, it appears with the meaning of *to be in a place* in 33 out of 35 obligatory contexts, *to belong to* in eight out of eight obligatory contexts, *to be for* in eight out of eight obligatory contexts and in the existential construction in eight out of eight obligatory contexts. There are only two errors and they both are omissions. The first instance occurs in the first play session. Ava and her father are playing with *Happy Family*.

(2;0.26)

6.60 *FAT: where is granddad's house?

*CHI: there granddad's house.

The other omission takes place in session five. Ava believes that her sister Amy is hiding in her bedroom and the father asks whether she is in the tent they built there.

(2;5.8)

6.61 *CHI: no, she not!

The first person singular occurs for the first time in the third play session and is used predominantly as an auxiliary. Out of 17 occurrences it is used as auxiliary 16 times. It mostly occurs in present continuous periphrases, but it is also used in future continuous periphrastic structures (e.g., *I'm gonna make beans* 2;6.6; *I'm going to make a turtle and I'm going to do like this* 2;7.10; *I'm going to be +...* 2;7.10; *I'm going to colour Amy* 2;11.14) and in one case in a present perfect periphrasis (*I'm not finished* 2;10.15). In the present continuous, it appears with eight verb types (*clean, play, eat, break, go, put, cut, pump*). As a verbal predicate it only appears once in the seventh play session: *am I just behind Amy?* (2;7.10). The first person plural only appears once and is used as an auxiliary: *because we are (going to grannie)!* (2;8.0). The third person plural emerges in the data in the ninth play session and appears in seven out of eight obligatory contexts through the

whole of the study. It is used three times in a present continuous periphrasis with two verb types (*sit* and *go*). As a verbal predicate, it appears in four out of five obligatory contexts with the meaning of *to be for* and *to belong to*.

TABLE 6.25 Proportion of present tense auxiliary *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	2/3	-	-	-
2;2.6	-	-	-	-	-	-
2;3.10	1/1	-	2/2	-	-	-
2;4.10	-	-	3/3	-	-	-
2;5.8	-	-	31/32	-	-	0/1
2;6.6	1/1	-	2/2	-	-	-
2;7.10	5/5	-	17/17	-	-	-
2;8.0	1/1	-	11/11	1/1	-	-
2;9.19	3/3	-	1/1	-	-	4/4
2;10.15	2/2	-	9/9	-	-	1/1
2;11.14	2/2	-	1/1	-	-	-
3;0.18	2/2	-	1/1	-	-	2/2
Total A/OC	17/17	-	80/82	1/1	-	7/8
%	100%	-	97.5%	100%	-	87.5%

The error with the third person plural occurs in the existential construction, which in the samples, is exclusively used in the singular. Ava and her father are playing with *Happy Family*.

(2;5.8)

6.62 *FAT: what do you play with when you are in the bath?

*CHI: with dolly.

*FAT: you play with dolly in the bath?

*CHI: yes.

*FAT: what about the fishes?

*CHI: there is no fishes in the bath.

*FAT: no fishes?

The same use of the singular form of the existential construction with a plural subject is also attested in Amy's English speech samples. As it was observed then, such use can hardly be regarded as an agreement deviation in the speech of very young children, because it is common in the speech of adult native speakers too. In the singular, there are

no errors with this construction, but it is only used eight times throughout the sampling period. It occurs for the first time in the fourth play session. In one case, it is used in an interrogative structure: *what is there, daddy?* (2;8.0).

Some evidence of contrastive use of singular and plural forms can be found in auxiliary and verbal predicate contexts from the age of 2;9.19. With respect to auxiliary forms, the following examples can be considered: *he is sitting on the chair* (2;7.10) and *they are not sitting* (2;9.19); *she is going on the bicycle* (2;7.10) and *because these are going home* (2;9.19). As to verbal predicate forms, examples include: *it's mine* (3;0.18) and *these are all mine/these are all yours* (3;0.18); *that is for daddy and mummy's cushion* (2;5.8) and *this is for girls* (2;10.15); *what is this for?* (2;10.15) and *these are for girls* (2;9.19)/*these are for this* (2;10.15). There are 13 obligatory contexts for the imperfect tense and the required form is provided in all contexts (Table 6.26). The imperfect forms are distributed as follows: ten auxiliary forms, three predicate forms with the locative meaning. The first and the third person singular only appear in past continuous periphrastic structures. The second person singular occurs as a verbal predicate with the locative meaning.

The data presented here show that, with respect to the present tense, Ava is able to use the verb *to be* with a considerable degree of accuracy. As far as the auxiliary function is concerned, there are no target deviations. The errors that occur in verbal predicate structures are very few. The number deviation that takes place in an existential construction can be discarded, because the use of *there is* with a plural subject is pragmatically acceptable in spoken English. The remaining deviations are constituted by two omissions that take place in sessions one and five in third person singular locative structures. In the first session, no other contexts arise for the use of the predicate *be*. In session five, the predicate is used in the remaining 20 locative contexts. Furthermore, the analysis indicates that Ava can use third person singular and plural forms contrastively from session nine. This is likely to be a conservative measure, because contrastive use of the homophonous singular and plural copula forms emerges from the age of 2;3.10. In relation to the third person plural copula form, it was observed that point of acquisition is never reached, despite the 100% accuracy rate. However, if the occurrences of the third person plural form of *to be* are combined, the morpheme in question attains criterion by the age of 2;9.19.

Moreover, predicative structures are used to convey a variety of meanings, i.e., the locative, the possessive and the *to be for* meaning. Such variety echoes what was observed in Amy's data and suggests that, with respect to the use of *to be* as a verbal predicate, Ava's knowledge too is not based on a lexically specific construction but on a more abstract representation.

TABLE 6.26 Proportion of imperfect tense auxiliary *be* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	-	-	-	-
2;2.6	-	-	-	-	-	-
2;3.10	-	-	-	-	-	-
2;4.10	-	-	-	-	-	-
2;5.8	-	-	1/1	-	-	-
2;6.6	1/1	-	-	-	-	-
2;7.10	-	-	-	-	-	-
2;8.0	1/1	-	-	-	-	-
2;9.19	3/3	-	3/3	-	-	-
2;10.15	-	-	-	-	-	-
2;11.14	1/1	3/3	-	-	-	-
3;0.18	-	-	-	-	-	-
Total A/OC	6/6	3/3	4/4	-	-	-

6.6.6 Auxiliary and verbal predicate *to have*

The results for the present tense of *to have* are summarised in Table 6.27. Unlike *avere* in Italian, in English *to have* is exclusively used as a verbal predicate. There are no omission or commission errors with the present tense of *to have*. As a verbal predicate, *to have* occurs with the meaning of *to possess*. Only two forms of the present tense paradigm are represented, the first person singular and the first plural, which appear in the samples in sessions five and eight respectively. The imperfect of *to have* never appears through the whole of the longitudinal study.

TABLE 6.27 Proportion of present tense auxiliary *have* in obligatory contexts

Age	1ps	2ps	3ps	1pp	2pp	3pp
2;0.26	-	-	-	-	-	-
2;2.6	-	-	-	-	-	-
2;3.10	-	-	-	-	-	-
2;4.10	-	-	-	-	-	-
2;5.8	2/2	-	-	-	-	-
2;6.6	-	-	-	-	-	-
2;7.10	-	-	-	-	-	-
2;8.0	1/1	-	-	1/1	-	-
2;9.19	-	-	-	5/5	-	-
2;10.15	-	-	-	-	-	-
2;11.14	1/1	-	-	-	-	-
3;0.18	-	-	-	-	-	-
Total A/OC	4/4	-	-	6/6	-	-

6.6.7 Noun morphology

The analysis of nominal morphology focused on the use of the plural suffix *-(e)s*. As to the plural marker, the analysis of productivity was implemented with a search for noun types.

TABLE 6.28 Proportion of plural noun inflections in obligatory contexts

Age	-s	-es
2;0.26	-	-
2;2.6	2/2	-
2;3.10	-	-
2;4.10	3/3	-
2;5.8	2/2	1/1
2;6.6	5/5	-
2;7.10	6/6	-
2;8.0	4/4	-
2;9.19	11/11	-
2;10.15	11/11	3/3
2;11.14	7/7	-
3;0.18	3/3	1/1
Total I/OC	54/54	5/5

In addition, Ava's speech samples were also searched for potential instances of target deviant forms showing productive use of noun inflections, i.e., cross-linguistics borrowings and overgeneralisations at the level of inflectional morphology. The results are summarised in Tables 6.28 and 6.29. No instances of cross-linguistic morphological borrowing occur,

and there are no morphological overgeneralisations (Table 6.29). The plural suffix *-s* occurs in all the 54 obligatory contexts (Table 6.28) and is used with 31 noun types (Table 6.29). The allomorph *-es* appears in five out of five obligatory contexts and is used with three different noun types.

TABLE 6.29 Contrastive use of noun types and overgeneralisations

Age	-s	-es	Overgeneralisations
2;0.26	-	-	-
2;2.6	1	-	-
2;3.10	-	-	-
2;4.10	3	-	-
2;5.8	1	1	-
2;6.6	4	-	-
2;7.10	5	-	-
2;8.0	3	-	-
2;9.19	5	-	-
2;10.15	4	2	-
2;11.14	2	-	-
3;0.18	3	-	-
Total	31	3	-

6.7 The elicitation task

The elicitation task was administered at the end of the ninth play session, when Ava was 2;9.19. The results for the elicitation task are summarised in Table 6.30. The table also presents the occurrences of the same morphemes in the spontaneous speech data collected from session one to session nine. As noted previously in relation to Italian, there is a stark contrast between Ava's use of the target inflections in spontaneous speech and in the elicited data. With regard to the present tense copula probes, Ava never supplied the third person singular form and provided the third person plural in one out of four probes. In her spontaneous speech samples, copula forms are used with accuracy and in a variety of constructions. More precisely, the third person singular copula reaches point of acquisition

from the first session and from the second session to the end of the study has an accuracy rate of 100%. The third person plural copula is marginally represented in Ava's speech samples but its accuracy rate is 100%.

TABLE 6.30 Responses for the elicitation task in English

Grammatical Morpheme	Score	S1	S2	S3	S4	S5	S6	S7	S8	S9
3ps copula	0/4	38/42	2/2	9/9	12/12	11/11	9/9	7/7	10/10	11/11
3pp copula	1/4	-	-	1/1	1/1	-	.	-	-	1/1
-s	2/4	-	2/2	-	3/3	2/2	5/5	6/6	4/4	11/11
-es	0/4	-	-	-	-	1/1	-	-	-	-
3ps	0/6	-	-	-	-	12/12	2/2	1/2	3/3	5/5
3pp	0/6		3/3	-	-	-	1/1	-	-	-

One possible explanation of her poor performance is that the preparatory probes failed to convey the expectation that in her answer she needed to complete the sentence started by the adult speaker and that such sentence needed to be modelled on the one used to describe the image in the preparatory probe.

6.63 Probe Target answer Child's answer

These strawberries are red but this... *is* blue a blue strawbie

As mentioned above, Ava provided the required copula form only once.

6.64 Probe Target answer Child's answer

This rabbit is gray but these... *are* brown *are* rabbits

Her performance did not improve much with the plural marker probes. One of the difficulties she had in the Italian task was the identification of the items depicted on the slides. In the English version of the task, each pair of slides showed the same item: the first slide depicted a single item, the second two or more of the same item. Nevertheless, Ava only provided the target answer in two out of eight probes. In five cases, she simply repeated the singular noun form mentioned in the prompt and in one case she did not answer at all. In the spontaneous data, the plural marker is supplied in all the obligatory contexts that arise in the course of the longitudinal study. As for the present tense third person endings, Ava never provided the target form. In nine cases she did not answer, in

two cases she only produced a subjectless and uninflected verb form.

6.65 Probe	Target answer	Child's answer
what does George do?	he brushes his teeth	brush

6.66

what do Peppa and George do?	they brush their teeth	brush
------------------------------	------------------------	-------

In one case, she answered without using any verbal form:

6.67 Probe	Target answer	Child's Answer
what does George do?	cycles	George on the bike

In her spontaneous speech samples, the third person singular marker appears in 90% of obligatory contexts and third person pronouns are never omitted.

6.8 The comparative analyses

6.8.1 The present indicative paradigm

Ava displays a comparable level of accuracy in both Italian and English (Table 6.31). Indeed, throughout the study, inflections are provided in at least 90% of obligatory contexts in both languages. In Italian, six out of seven inflections reach point of acquisition by the age of 2;10.15. In English, only the first and the second person singular attain criterion by the end of the study. However, in both languages, the failure to reach a threshold of acquisition can likely be accounted for by the absence of obligatory contexts for the use of the morphemes in question, as indicated by the fact that they all have a 100% accuracy rate. The only exception is represented by the English third person singular marker. The morpheme in question appears in the data in the fifth session, when Ava is 2;5.8. This of course does not implicate that the marker was not already present in her repertoire before then, especially because there are no missed opportunities in the previous four sessions. What is different about the use of this inflection is that, although it occurs in 90% of the overall obligatory contexts, there are points in time when it is supplied in fewer than 90% of obligatory contexts. It appears in 50% of obligatory contexts in the seventh session, in 80% of obligatory contexts in the tenth session and it is omitted in the only context that arises in the second last session, which is also the last context to arise in the study. As it was already observed in relation to Amy's data, present tense inflections behave quite

differently in each session. They are often used with at least two verb types per session, sometimes more than two, but this is not always the case. There appears to be a certain degree of variability not just among inflections but also with respect to each individual inflection across sessions (see Tables 6.3 and 6.18).

TABLE 6.31 Accuracy and productivity of present tense forms in Italian and English

Italian				
	First Appearance	Point of Acquisition	Accuracy	Productivity
1ps	2;0.26	2;4.10	98%	28%
2ps	2;6.6	2;10.15	100%	16%
3ps <i>-a</i>	2;0.26	2;0.26	98%	41%
3ps <i>-e</i>	2;0.26	2;2.6	95%	28%
1pp	2;6.6	2;10.15	97%	9%
3pp <i>-ano</i>	2;0.26	2;8.0	93%	14%
3pp <i>-ono</i>	2;0.26	-	100%	17%
English				
1ps	2;0.26	2;4.10	99%	69%
2ps	2;2.6	2;5.8	100%	39%
3ps	2;5.8	-	90%	35%
1pp	2;0.26	-	100%	17%
3pp	2;2.6	-	100%	9%

6.8.2 Morphological mixing

Overgeneralisations, intra- and cross-linguistic borrowings are of great interest, because they indicate that separation of inflections from stems has taken place. Instances of morphological mixing were also found in Amy's speech samples, but it is even more interesting that this same phenomenon occurs in Ava's samples, because she is at an earlier stage of linguistic development. An overview of this type of target deviations in the two languages is provided in Table 6.32. The cross-linguistic comparison shows that, in Italian, they are more varied, since they relate to verb inflections as well as noun inflections; in English, they exclusively concern the verbal domain. In both languages,

overgeneralisations exclusively occur in the verbal domain and show that inflected verb forms are not imitated from the input, but produced on the basis of a morphological operation where the inflectional ending is added to the verb stem. In Italian, Ava says *leggio* (*I read*) when she is 2;5.8 and is barely approaching the two-word stage (her MLU values are 2.0). In the English samples, overgeneralisations concern the use of the *-ed* marker. The first overgeneralisation takes place in the first session and the last in session eight, between age 2;0.26 and 2;8.0, when her MLU values range between 1.9 and 3.0.

As for nominal morphology, in Italian, there are instances of intra-linguistic borrowing that equally suggest that inflected noun forms are generated by virtue of a morphological operation of the type noun stem + inflection. For example, Ava produces the forms *apa* (*bee*) (age 2;3.10 MLU 2.2) instead of *ape* and *dento* (*tooth*) instead of *dente* (2;9.19 MLU 3.2). Both nouns belong to the *-e* → *-i* group, but the former is feminine and the latter is masculine. The markers *-a* and *-o* are the most frequent endings for feminine singular and masculine singular nouns respectively. Therefore, in each instance, Ava appears to borrow a more common ending vowel from a different noun group to express the grammatical meaning that is needed. On one occasion, she even creates a new word, *varicelli*, with the meaning of *foruncoli* (*spots*) *della varicella* (*chicken pox*). Intra-linguistic borrowings also concern the verbal domain. Ava borrows present tense (*piangia* 2;10.15 MLU 2.9) and infinitive (*prendare*) endings into the conjugation of verbs belonging to a different verb class. She blends the imperfect tense ending *-evamo* and the present tense ending *-iamo* and creates the verb form *correviamo* (2;11.14 MLU 2.8). She blends the preposition *verso* (*towards*) and the verb *volare* (*to fly*) and creates the verb form *versano* with the meaning of *volare verso* (*to fly towards*) (2;9.19 MLU 3.2).

In English, the first intra-linguistic borrowing with *did* takes place in session eight and the last in session eleven. Like in Amy's case, this use of *did* as a tense marker exclusively occurs with irregular verbs and it coexists with the use of the relative target forms, sometimes even within the same session or stretch of conversation. The only instance of cross-linguistic borrowing revolves around the use of Italian inflectional morphology and occurs within an Italian utterance (*Spid- + -o* 2;11.14 MLU 2.8).

TABLE 6.32 Morphological mixing in Italian and English

Italian				
Age	MLU	Overgeneralisations	Intra-linguistic Borrowings	Cross-linguistic Borrowings
2;3.10	2.2		l'apa Maia	
2;4.10	1.2	io mi stanno cadendi i fusilli		
2;5.8	2.0	leggio quella io qua		
2;7.10	2.4		i miei varicelli sono andati via/i caroti	
2;9.19	3.2		questo è un dento/gli uccellini <i>versano</i> le case	
2;10.15	2.9		chi è quello che piangia	
2;11.14	2.8	si hanno bagnato	correviamo/ vuole prendere il bimbo	questo è Spido/voglio vedere Spido
3;0.18	3.2		è un nuvolo	
English				
2;0.26	1.9	he falled down		
2;3.10	2.0	mummy maked it/I maked this		
2;4.10	1.9	mummy maked it/ daddy maked it		
2;6.6	3.0	he maked the +.../he maked the erba		
2;8.0	2.8	we buyed the puzzle of Dora	we did buy in France the puzzle of the beach/she did go out/she did go/mummy did go out/she did go in the car	
2;11.14	2.3		I did go with the car	

The fact that this type of error forms has a more varied character in Italian can be accounted for by the fact that, in Italian, there are more inflectional items to borrow. It is noteworthy that despite the paucity of inflectional morphemes in English, instances of intra-linguistic borrowing do take place and that overgeneralisations appear in the data almost three months earlier in English than in Italian. In both languages' data set, the earliest instances of this type of target deviation occur at a very early stage of linguistic development, when Ava is two years old and her MLU values have just started to approach the two-word stage.

6.8.3 Agreement and omission errors

Like in Amy's case, agreement errors on lexical verbs only occur in Italian where they exhibit all the characteristics highlighted with respect to Amy's data: they are systematic in nature, because they are unidirectional and only concern either person or number. Person deviations exclusively relate to singular forms and consist of the borrowing of the second person marker into a first or a third person obligatory context. They all occur in session seven, which immediately follows the session in which the second person singular marker appears for the first time in the samples. There is one exception to this second person to third/first person direction, and it consists of the borrowing of a third person singular form into a first person singular context, which occurs in session six. As noted by Guasti (1994), this type of non-target use of the third person singular can be accounted for by the fact that young children often refer to themselves by using the third person singular. Throughout the sampling period, Ava uses both the first and the third person with auto-referential meaning. What makes the utterance in question ungrammatical is that she also uses the first person singular pronoun *io* within the same utterance. A similar deviation takes place in session five with the auxiliary *essere* and is discussed later in this section. Person deviations cease rather early: the last person deviation occurs in the seventh session when Ava is 2;7.10. With respect to number, there is only one error, which occurs in the first session and consists of the use of the third person singular marker *-a* in a context for the third person plural morpheme *-ano*. However, in the same session, there is evidence of Ava's ability to use the suffix *-ano*, which appears in four out of five obligatory contexts and with two verb types.

Agreement errors with function words are very few. In both languages, there are virtually no deviations of person agreement. The only exception concerns the case of the borrowing of a third person singular form into a first person singular context with the auxiliary *essere*. This deviation has been discussed in detail in section 6.4.5. Here it is worth highlighting that it occurs at a time when, in the samples, Ava has never used the first person singular form of *essere* to refer to herself. The utterance in question is different, because she also uses the personal pronoun *io*, which creates the obligatory context for the use of the first person singular form of the verb. Number deviations display the same unidirectional character as number deviations on Italian lexical verbs, i.e., they exclusively

concern the borrowing of a third person singular form into a third person plural context. In Italian, deviations of number agreement revolve around use of the copula and verbal predicate *essere*, while in English the only instance relates to the existential construction. In Italian and in English, there is evidence of contrastive use of singular and plural forms. Such evidence emerges from the beginning of the sampling period in Italian. In English, it emerges a little later, precisely from session three, possibly because no contexts for the use of plural forms occur in the data before then.

Omissions are equally very rare. In English, there are six omission errors, they are limited to the present tense third person singular form of *to be*: four of them concern the copula and are limited to the first session; two omissions occur in verbal predicate contexts, the latest takes place in session five. In Italian, omissions mostly take place in third person singular copula contexts but are not limited to it. More precisely, out of nine omissions five concern the third person singular copula, two the third person singular auxiliary *essere*, one the third person plural copula and one the second person singular copula. However, in both languages, at no point the third person singular copula or verbal predicate form occurs in fewer than 90% of obligatory contexts. As for the third person plural form, it is never omitted in English, but it is used for the first time in the samples in the third session; in Italian, the only omission takes place in the first session. Hence, the data suggest that Ava has knowledge of the obligatory nature of the copula and verbal predicate *essere/be* from the early stages of the longitudinal study. This evidence emerges from the age of 2;0.26 with regard to the third person singular form. As for the third person plural form it emerges from the age of 2;2.6 in Italian and 2;3.10 in English.

6.8.4 Finiteness errors

Like in Amy's data, in Ava's samples, there are two types of finiteness errors. One type consists of root infinitives (Rizzi, 1994) and the other one consists of non-finite forms occurring in compound tense contexts. Again, like in Amy's case, the first type occurs in both languages, while the second type is only attested in Italian. In Italian, there are five instances of root infinitives and they occur in first person singular, third person singular and first person plural contexts: *leggere questa* (2;0.26); *Ava vedere* (2;0.26); *io mangiare questo* (2;3.10); *io fare a pezzi* (2;3.10); *andare a ballet* (2;6.6). They have been analysed

in detail in section 6.4.1 and, as in Amy's case, they all occur in utterances containing eventive verbs and appear to have a modal interpretation. Root infinitives are limited to the early stages of the longitudinal study, the latest instance occurs in session six.

In English, there are only three bare forms in third person singular contexts, but they span throughout the longitudinal study. Ten verb types appear in third person singular contexts. Ava always provides the correct inflected form for seven of them (*to do*, *to get*, *to go*, *to need*, *to pass*, *to use* and *to want*). The verb *to live* is provided in both the inflected and the bare form within the same stretch of conversation. Two verbs, *to open* and *to take*, are exclusively provided in the bare form and only occur once. They have been analysed in section 6.6.1. Again as in Amy's case, they do not lend themselves to a modal interpretation nor appear to originate from the omission of the periphrastic *do*, because they all occur in non-emphatic utterances with a factual reading (*the panda live with his daddy*, 2;10.15), in which Ava is talking about events that are taking place at the moment of speaking (*he open the door* 2;7.10) or habitually take place (*Amy take all my colour out* 2;11.14).

Table 6.33 summarises the occurrences in Ava's input corpus of all verbs that appear in third person singular contexts in her English output corpus, bare and inflected forms alike. With respect to the Italian input corpus, only verbs that she uses in root contexts are considered. Occurrences have been divided into modal compound finites, non-modal compound finites and inflected forms. In English, non-modal compound finites include structures where finiteness is marked on the dummy *do*. In Italian, they include infinitives depending on a governing verb or preposition. With respect to English, red font highlights the verb types that appear in the bare form in Ava's output corpus. Overall, the table shows that, in English, all verbs predominantly appear in compound finites in Ava's input corpus, not just the ones that she uses in the bare form. Particularly noteworthy is the case of *to want* of which she exclusively provides the correctly inflected form and which appears 102 times in compound finites and only nine times in the inflected form. It is also worth pointing out that the only verb that, in the input corpus, appears in the tensed form as many times as it appears in compound finites is *to open*, which Ava only uses in the bare form. In Italian, all verbs that she uses in root infinitive contexts predominantly appear in

the tensed form¹⁹ in the input corpus. Furthermore, even when in the input they are used in the infinitival form, they are mostly used in non-modal structures.

TABLE 6.33 Appearance in the input of verb types used in root contexts in the output

Italian	CF Modal	CF non modal	Inflected
andare	50	14	82
fare	75	79	478
leggere	20	6	41
mangiare	11	39	65
vedere	7	68	92
English			
do	-	72	47
get	-	17	1
go	-	61	4
live	-	16	4
need	-	10	3
open	-	2	2
pass	-	-	-
take	-	9	0
use	-	13	3
want	-	102	9

Finiteness errors in compound tense contexts equally end in session six. Ava produces 12 finiteness errors in this type of contexts. Root participles have been discussed in sections 6.4.5 and 6.4.6. Here two more finiteness deviations are presented, which occur in present continuous contexts. The non-finite forms that Ava produces do not match the ones that would be expected in the periphrastic structure in question.

(2;4.10)

- 6.68 *MOT: i bimbi cosa stanno facendo? what are the children doing?
 *CHI: fare un castello di sabbia. to make a sand castle.

¹⁹ The verbs *andare* and *fare* are irregular in the present tense. Consequently, the forms they assume are not easily relatable to the infinitival form. This is always the case with respect to *fare*, because for none of the forms the link with the infinitive is straightforward from a morphological point of view. As to the present tense of *andare*, only the first person plural and the second person plural have the same stem as the infinitive; hence, only these person-number combinations were considered in the count of the occurrences of the tensed form in the input corpus.

(2;5.8)

- 6.69 *MOT: cosa stanno facendo il nonno e Amy? what are granddad and Amy doing?
*CHI: entrati in casa. entered the house.

Another non-matching form occurs in a present perfect context (see section 6.4.6, passage 6.38).

6.8.5 Tenses moods and verb stems

Ava shows a similar level of contrastive use of verb types in Italian and in English (Table 6.34). Similar to what was observed in relation to Amy's data, the only discrepancy between the two data sets concerns the higher number of verb types that occur in the present indicative in Italian, which appears to be imputable to the fact that, in English, Ava makes a greater use of the present continuous. Ava uses 13 verbs in the present progressive and of those only three also appear in the present indicative.

TABLE 6.34 Proportion of verb types used contrastively in Italian and English

Italian	
Present Tense	Non-Compound Tenses
21/64	28/68
33%	41%
English	
Present Tense	Non-Compound Tenses
8/23	8/27
35%	28%

As for the acquisition of tenses, in Italian, three tenses are already represented in Ava's speech in the first session, i.e., the present indicative, the present perfect and the present continuous. The only new tense that appears in the data is the imperfect, which is used for the first time in the speech samples in session five. In English, three tenses are already represented in Ava's speech samples in the first session, namely, the simple present, the present continuous and the simple past. In the course of the sampling period, four new tenses appear, the past continuous in session five, the future continuous in session six, the simple future and the present perfect in session ten.

As in Amy's case, the use of tenses is language specific. The present continuous is

used in all but the second and the fourth sessions in English, while, in Italian, it is used in session one, six, seven, eight, ten, eleven and twelve. While in English no errors occur in the use of the tense in question, in Italian there are target deviations that relate to present continuous periphrases. Ava systematically replaces *stare* with the auxiliary *essere* in present continuous first person periphrastic structures. Moreover, two finiteness errors take place in sessions four and five in a context where the use of the present progressive is prompted by her mother's question (see section 6.8.4, passages 6.68-6.69). The present perfect appears in each session with the exception of the fourth in the Italian data; in English, it is only used in session ten. The past continuous appears in session five in the English data and is then used in session six, eight and eleven, but is never used in the Italian data.

6.8.6 Copula and auxiliaries

Ava displays a comparable level of accuracy in the use of *essere/to be* and *avere/to have* (Table 6.35). The analysis of copula forms in Italian and English provides evidence of contrastive use of number in third person contexts. This evidence emerges from the age of 2;0.26 in Italian and from the age of 2;3.10 in English, where, however, there are no missed opportunities to suggest that Ava could not use third person forms contrastively even before then. Furthermore, in the two languages, all the utterances containing the copula are language specific and the use of varied constructions suggests that her knowledge of the copula is not based on a lexically specific schema. As for *avere/to have*, the only noticeable difference concerns the more limited use of *to have* in comparison with the Italian counterpart *avere*. In Italian, all the person-number combinations of the present tense paradigm are represented in the speech samples with the exception of the second person plural. Only two forms of the paradigm do not reach a threshold of acquisition, but, with no omission or agreement errors, it is likely that this happens due to the absence of obligatory contexts over consecutive speech samples. Conversely, in English, only the first person singular and the first person plural appear through the whole of the study. While the latter person-number combination emerges in the Italian and the English samples around the same time, the former emerges in Italian five months earlier than in English. As already noted in relation to Amy's data, this discrepancy can be accounted for by the broader use

that Italian makes of *avere* as an auxiliary. Indeed, while, in Italian, out of 74 occurrences *avere* is used as an auxiliary 57 times, in English *to have* is never used as an auxiliary.

TABLE 6.35 Accuracy and point of acquisition for function words

Italian			
	First Appearance	Point of Acquisition	Accuracy
1ps <i>essere</i>	2;5.8	-	91%
2ps <i>essere</i>	2;6.6	-	66%
3ps <i>essere</i>	2;0.26	2;0.26	98%
1pp <i>essere</i>	2;7.10	-	100%
3pp <i>essere</i>	2;0.26	2;4.10	89%
1ps <i>avere</i>	2;0.26	2;8.0	95%
2ps <i>avere</i>	2;5.8	-	100%
3ps <i>avere</i>	2;2.6	2;8.0	90%
1pp <i>avere</i>	2;9.19	2;9.19	100%
3pp <i>avere</i>	2;9.19	-	100%
English			
1ps <i>be</i>	2;3.10	2;6.6	100%
3ps <i>be</i>	2;0.26	2;0.26	97%
1pp <i>be</i>	2;8.0	.	100%
3pp <i>be</i>	2;3.10	2;9.19	93%
1ps <i>have</i>	2;5.8	-	100%
1pp <i>have</i>	2;8.0	-	100%

Like copula forms, the verbal predicates *essere/to be* appear in varied constructions in both languages. The main difference between the two languages concerns the use of the existential construction *c'è/there is* and *ci sono/there are*. In Italian, there is evidence of contrastive use of present tense singular and plural forms from the third session. In addition, this construction is also used in the imperfect: the plural form *c'erano* appears once in session seven and once in session nine, the singular form *c'era* appears once in the ninth session. In English, the existential construction is only used in the present tense and

never in the plural. In one instance, Ava uses the singular form *there is* with a plural subject (*there is no fishes in the bath* 2;5.8). However, as mentioned in section 6.6.5, the utterance in question is pragmatically acceptable, i.e., an adult native speaker could equally make use of a singular verb form in that same context.

6.9 Chapter summary

From the analyses of Ava's Italian and English spontaneous speech samples, it is clear that the morphological patterns she displays bear a marked resemblance to the ones identified in her sister Amy's data. As for the paradigm of the present tense, point of acquisition is not reached only for the *-ere* and *-ire* third person plural marker and the English third person singular suffix. With respect to the former inflection, this likely happens because obligatory contexts for its use do not arise over at least three consecutive sessions. Indeed, the morpheme in question appears in 100% of obligatory contexts. Slightly different is the case of the latter inflection, because for it point of acquisition is not reached despite the occurrence of obligatory contexts over three consecutive sessions. With regard to English subject pronouns, there are only two target deviations, which occur in sessions three and five, when Ava is respectively 2;3.10 and 2;5.8. In both instances, the first person singular pronominal slot is left empty.

The analyses also suggest that the development of each given paradigm takes place on an item-by-item basis. Therefore, it is gradual and protracted over an extended period of time. With specific reference to the present indicative paradigm of lexical verbs, for instance, some endings and person-number combinations are used from the beginning of the recording period, in virtually all the obligatory contexts and often with multiple verb types. Others are only used from a given point in the sampling period, while second person plural markers never appear in the speech samples. However, as far as individual inflectional items are concerned, acquisition seems to take place less gradually. For example, the Italian second person singular and first person plural markers appear for the first time in the speech data in the sixth play session. On that occasion, they are used in three out of three and three out of four obligatory contexts and with two and three verb types respectively. The developmental trajectory of the Italian first person singular form of the present tense of *essere* (*to be*) appears to be similar. Up until the fourth session, Ava

always uses the third person singular form of *essere* to refer to herself, in copular, auxiliary and predicative constructions. In session five, however, she refers to herself by using the first person singular of the present tense of *essere* for the first time: *sono io* (2;5.8). In the same session, in a predicative construction, she also produces a sort of hybrid utterance, where she refers to herself by using the first person singular personal pronoun *io* and the third person singular verb form *è* (*is*): *io dov'è?* (*where is I?*). In session six, contexts for the use of the first person singular form of *essere* do not arise. In session seven, i.e., two months after its first appearance in the samples, the first person singular *sono* appears in precisely the same expression in which it had been omitted in session five: *io dove sono?* (*where am I?*). In the eighth session, the first person singular *sono* is used five times as an auxiliary and twice in a copular construction. Although it does not reach point of acquisition, from this point onwards, the morpheme in question is always supplied in all obligatory contexts.

The analysis of agreement deviations with verb morphology shows that in English they are virtually non-existent; in Italian, they are rare and, more importantly, never random in nature. For example, agreement errors are very few and limited to one semantic property. Person deviations consist, in all cases but one, of the provision of the second person singular marker in contexts for the first person singular or the third person singular. Number deviations on lexical verbs are almost unattested in her speech samples. There is only one of them, it occurs in the very first session, when Ava is 2;0.26, and consists of the provision of a third person singular form in a context where the third person plural form is required. As for the copula, the auxiliaries and the verbal predicates, number deviations are confined to utterances in which the plural status of the subject is opaque.

Finiteness errors occur in both Italian and English. In Italian, they take place in present tense and compound tense contexts. In present tense contexts, they consist of infinitives and have a modal meaning. Compound tense contexts are limited in Ava's Italian data to present perfect or present continuous contexts. Finiteness errors in this type of contexts consist of root participles, root gerunds as well as 'non-matching' non-finite forms. In English, non-finite forms are exclusively produced in third person singular present tense contexts. In both languages, morphological overgeneralisations, intra- and cross- linguistic borrowings of inflectional items occur throughout the sampling period and

suggest that inflections are used to convey grammatical meanings.

In the next chapter, I answer the research questions addressed in this study and discuss the implications of the morphological patterns that emerge from Amy and Ava's speech data with respect to pre-existing knowledge in the field of bilingual first language acquisition and theories of language development.

CHAPTER 7

Discussion

7.1 Introduction

In this chapter, I discuss the implications of the findings presented in the previous two chapters. I also evaluate the contribution to existing knowledge and theory and the limitations of the study. Finally, I identify areas that need to be further researched.

7.2 Overview of the research questions

This study investigated morphological productivity in the early stages of combinatorial speech in the BFLA setting. A year-long longitudinal study was conducted to explore the use that two young Italian-English BFLA children make of inflectional morphology in their two languages. Spontaneously produced speech samples were collected at monthly intervals. In addition, the two children performed an elicitation task in both languages. The BFLA setting was specifically chosen to address the issue of early morphological productivity, on the basis of the assumption that the linguistic experience that BFLA children gather in each of their languages is reduced in comparison with their monolingual peers. Three research questions were formulated. The first research question asked:

(i) Are BFLA children productive with inflectional morphology in the early stages of combinatorial speech? If so, do they arrive at productive command of inflectional morphology earlier in richly inflected languages than in languages with sparse morphology?

This question was driven by a twofold hypothesis. Early morphological productivity is congruent with generativist-nativist accounts of language acquisition (e.g., Wexler, 1998; Hoekstra and Hyams, 1998; Yang, 2002; Legate & Yang, 2007). In contrast, the idea of morphological productivity in the early stages of acquisition is strongly criticised in studies adhering to constructivist accounts of language development (e.g., Pizzuto & Caselli, 1992; Rubino & Pine, 1998; Serratrice, 2001; Gathercole, Sebastián & Soto, 2002; Gathercole, 2007). Moreover, the hallmark constructivist assumption that language acquisition takes place on a word-by-word basis also implicates that cross-linguistic differences in the

acquisition of inflections are implausible (Serratrice, 2001). This conclusion is a refutation of findings from cross-linguistic research (e.g., Slobin, 1985-1992; Bates & Devescovi, 1989; Caselli, Casadio & Bates, 1999) and studies of BFLA children (e.g., Gawlitzek-Maiwald & Tracy, 1996; Paradis & Genesee, 1996, 1997; Sinka & Schelletter, 1998), which suggest that inflectional forms are acquired earlier in richly inflected languages than in languages with scant morphology. Although English and Italian are both classified as fusional languages, they vary considerably in relation to the extent to which they make use of Inflection and the distinctions encoded by it. They can in fact more accurately be described as lying near the opposite ends of the synthetic portion of the typological continuum that has the analytic pole at one end and the polysynthetic pole at the other end. Because of such typological variance, they are ideal languages in which to test the finding that the acquisition of inflectional morphology is more precocious in morphologically rich languages than in languages with sparse morphology. In addition, BFLA children have been identified as ideal testers in cross-linguistic research, owing to the common anchoring of the two languages within the same mind (e.g., De Houwer 1995; Meisel, 1990; Sinka & Schelletter, 1998).

The inherent limitations of investigating productivity on the basis of spontaneously produced speech data and the constructivist assumption that language acquisition is lexically driven and context-based led to the second research question investigated in this study.

(ii) Do morphological overgeneralisations, intra- and cross-linguistic morphological borrowings occur in the early stages of combinatorial speech in the BFLA setting?

Morphological overgeneralisations, intra- and cross-linguistic morphological borrowings are forms that cannot have been heard in the input. For this reason, they appear to be incongruent with the claim that children are conservative and imitate the input. Under constructivist accounts, morphological overgeneralisations can be accounted for by the fact that, at a certain stage in development, children start to draw analogies across lexically specific slot-and-frame patterns. However, children need to store a sufficient number of semi-productive schemas before becoming able to draw analogies across such stored constructions. As a result, generalisations take time and overgeneralisations take even longer, for they can only be made after generalisations have taken place.

Overgeneralisations are even less likely to occur early in development in the BFLA setting, where the contexts from which children can collect lexically specific schemas are fewer for each language that they are acquiring. Lexically driven and context-based acquisition are equally incongruent with intra- and cross-linguistic morphological borrowings. The former are implausible on the basis of the non-occurrence in the linguistic context of inflected forms in which a deviant allomorph is used in place of the target one. The latter are improbable because the code-mixing to which BFLA children may be exposed cannot contain instances of mixing at the morphological level, where, for example, bound morphemes from one language are added to stems from the other language. Conversely, early morphological overgeneralisations, intra- and cross-linguistic morphological borrowings are congruent with generativist-nativist accounts. In this view, right from the start, children operate on the basis of a generative rule of the type stem + inflection. In addition, because Inflection is an innate functional category, amount of exposure should not be as crucial; consequently, early instances of morphological mixing may also be observed in the 2L1 acquisition setting.

However, overgeneralisations, intra- and cross-linguistic borrowings are not the only target deviations that can potentially occur in the speech of young children. They also make errors of omission, finiteness and agreement. Therefore, because of the same rationale behind the second research question, the third question focused on this type of errors.

(iii) What is the nature of omission, finiteness and agreement errors in the early stages of combinatorial speech in the BFLA setting?

Under constructivist accounts, this type of deviations shows that children acquire language by learning strings directly from the input. As a result, omissions and errors of agreement or finiteness are not principled. On the contrary, they display a marked lexical effect, in the sense that they are driven by lexically specific features of the input. In contrast, on generativist-nativist accounts, omissions and agreement errors should be limited to the phonological shapes that have not been learned yet. Finiteness errors are regarded as properties of the early grammar, because they occur in the speech of children acquiring different languages. Moreover, this type of deviations is principled, because inflection-bearing morphemes are rule governed. Constructivist and generativist accounts make competing predictions with respect to (i) morphological productivity in the early stages of

combinatorial speech in the BFLA setting. They also make opposite claims in relation to (ii) the precocity of morphological overgeneralisations and the likelihood of intra- and cross-linguistic borrowings in the 2L1 setting. Finally, they differ in (iii) the interpretation they give of the nature of omission, agreement and finiteness errors. In this chapter, I try to contribute to the on-going debate about these rival accounts by answering the research questions that I have addressed and pointing to the theoretical models that appear to offer a more comfortable home to the morphological patterns that I have identified.

7.3 Methodological choices

Before discussing the implications of the research findings, I briefly turn to the method of data collection and try to evaluate the methodological choices that I made with the benefit of hindsight. In this section, I focus on the following aspects of my method: the number of participants, audio recording versus video recording and longitudinal versus cross-sectional and experimental studies. I chose to investigate early productivity of inflections by following the morphological development of two Italian-English BFLA children in the early stages of combinatorial speech, over an extended period of time and within their real-life context. In doing case study research, I followed a well-established tradition of studies in the first language acquisition field. In-depth exploration of the emergence of features of grammatical morphology has often focused on a small number of children in studies of both monolingual development (e.g., three children Guasti, 1994; one child Rubino & Pine, 1998; three children Gathercole, Sebastián & Soto, 2002) and BFL acquisition (three children Paradis & Genesee, 1996; two children Paradis & Genesee, 1997; two children Gawlitzek-Maiwald & Tracy, 1996; one child Sinka & Schelletter, 1998; one child Serratrice, 2001). This approach implicates both advantages and disadvantages. On the one hand, case studies offer the opportunity of dealing with homogeneous samples, thus eliminating variables that are difficult to control for with a large sample size. On the other, with a small sample size, caution must be applied, as the findings might not be transferable to a larger group of individuals.

With regard to the data collection procedure, a preliminary step was to decide between audio recording and video recording of the play sessions. The most obvious advantage of video recording was that it would have allowed me to have more information

about the extra-linguistic context, when transcribing the spontaneous speech data. However, it would have been more intrusive, because a video camera and a tripod are difficult to hide and discreetly move around as children run from one place to another. Consequently, much of the hoped-for spontaneity of the data could have been compromised. It would have probably also been less comfortable for the parents, who generously allowed my presence into their family life for two hours, every month, over a period of two years. I tried to overcome the limitations of audio recording through intense note-taking after each session and by making sure that transcriptions always took place right after each session had been recorded, so that the extra-linguistic context was still vivid in my mind.

Before deciding to undertake a longitudinal study, I also considered the possibility of conducting a cross-sectional or an experimental study. Although a cross-sectional study would have allowed me to include a larger number of children, it seemed less compatible with the purpose of looking at the emergence of inflections and, especially, at the development of patterns, for two reasons. First, it would have been difficult to select samples of Italian-English BFLA children, who were at a seemingly comparable level of linguistic development across their two languages. It is well known that the stage of syntactic development at which same age children are can vary considerably (De Villiers, 1992). In the BFLA setting, this non-homogeneity is complicated by the fact that children are acquiring two languages and, as it has often been observed, balanced bilingual development is a rarity (e.g., Meisel, 2007). As explained in the methodology chapter, in this study, a balanced bilingual state was pivotal in the cross-linguistic comparison of early productivity. The second reason for opting for a longitudinal study was that I would not have had the chance to familiarise myself over a short period of time with multiple children. Hence, my presence in the course of the play sessions could have been disruptive of natural and spontaneous interaction.

Eliciting grammatical morphemes from a larger number of children would also have been another way of collecting data from a large sample size. Although an experimental study would have presented the same difficulties I mentioned in relation to a cross-sectional study, this was an option I considered carefully. I knew that one of the most obvious limitations of collecting data in a naturalistic setting had to do with the possible lack of

opportunities for speakers to show how productive they are. In the naturalistic setting, there is no guarantee that contexts for the use of a given morpheme will actually arise. For example, it has been shown that even adult speakers use not more than two verb types with each inflection on average and, most of the time, verb types only appear with one inflection in their speech samples (e.g., Aguado-Orea, 2004). Therefore, although I resolved to go for case study research, I still designed an elicitation task, with the aim of supplementing the spontaneous data by providing the two children with contexts for the use of the morphemes targeted in the analysis of the spontaneous speech samples. The elicitation task was modelled on a task that had been employed with a larger number of Italian-acquiring children to explore the use of noun and verb morphology, during the pre-school years (Leonard *et al.*, 2002). Sixty children took part in that study, distributed across four age groups. Some of them were older than my participants, but 24 children were aged between 2;0 and 4;0. Therefore, the task had already been piloted with very young children. Furthermore, it had been explicitly designed to test morphological features of Italian. The task I employed was only inspired by the one used in that previous study. I designed the probes from scratch, did not include probes for the elicitation of definite articles and also created an English adaptation. Despite being based on a validated format for the grammar forms and the age range on which the present study focused, the task turned out to be completely unsuccessful, with both children and in both their languages. The children displayed almost no productivity with inflectional items that, in their spontaneous speech samples, they reliably provided and that were used in a variety of structures and with multiple stems. The task results strongly suggest that the demands that elicitation tasks pose on very young children are not only of linguistic nature and that, therefore, they may be misleading, when gauging their linguistic abilities. Indeed it could be argued that the main merit of the elicitation task in this study was to confirm that the decision to rely primarily on spontaneously produced speech samples from a small number of children, instead of elicited data from a larger number of participants, yielded insights that might not have been available from even copious amounts of experimental data.

At the same time, it must be acknowledged that there are considerable limitations that case study research has with respect, for example, to generalizability of the findings. Although this research strategy allows for rich and deep analyses of the developmental

patterns of linguistic features, the results it provides need to be confirmed by employing larger amounts of data. However, as pointed out by Elizabeth Lanza (1997, pp. 81-82), case studies are cumulative, because the results from several case studies offer an important indication of general trends.

7.4 Implications of findings for question 1

The first research question asked whether BFLA children exhibit productive command of inflectional morphology in the early stages of combinatorial speech. It also investigated whether morphological productivity is more precocious in richly inflected languages than in languages with sparse morphology. In this study, the use of inflections was investigated in terms of accuracy and productivity. Accuracy was evaluated on the basis of provision of the target morpheme or inflectional item in an obligatory context (Cadzen, 1968; Brown, 1973). Productivity was evaluated on the basis of the use of bound morphemes with different stems (Pizzuto & Caselli, 1992) and function words in a variety of structures (Serratrice, 2001). The morphological analyses show that the two BFLA children participating in the present study display a **comparable level of accuracy and productivity across their two languages with respect to verb inflections, copula forms, verbal predicates, auxiliaries and plural noun inflections.**

7.4.1 Verb inflections

In both children's speech samples, **Italian present indicative inflections and the English third person singular marker are provided in 90% and above of the obligatory contexts. The criterion of point of acquisition does not always permit drawing conclusion about the productive status of a given morpheme.** For example, in this study, when point of acquisition is not achieved for a given morpheme, this virtually always happens because there are not three consecutive speech samples, where obligatory contexts arise for that morpheme, and not because the morpheme is not provided in 90% of obligatory contexts over three consecutive sessions. For example, it is noteworthy that, in Ava's samples, the third person plural marker *-ono* never reaches point of acquisition, despite occurring in 100% of obligatory contexts. I have argued that English personal pronouns can be regarded as inflection equivalent features, because they give finiteness to a

verb form that otherwise would not be finite and also function as agreement markers for verb forms that otherwise would be indistinguishable from each other. In line with what was observed in previous studies (Harris & Wexler, 1996; Hoekstra & Hyams, 1998), **target deviations with personal pronouns in English are virtually non-existent (1%)** in both children's files (see sections 5.6.1 and 6.6.1).

With respect to the use of Italian present tense inflections with multiple verb types, there appears to be a certain degree of variations among different inflections and within each individual inflection across time. For example, the first person singular marker *-o* is used in all sessions in Ava's samples and in all sessions but one in Amy's samples. In Amy's data, it appears with thirteen verb types in session eight and only two verb types in sessions seven and ten. Similarly, in Ava's samples, it is used with seven verb types in sessions six and nine, but only two different verb stems in sessions two, three and eleven. For this reason, it appears that it is not always possible to establish whether or not a given morpheme is used in an adult-like fashion on the basis of Pizzuto and Caselli's (1992) productivity principle. There are real challenges in identifying operational definitions that are appropriate for naturalistic speech sampling, where the appearance of each given inflectional item does not only depend on the speaker's ability to use it, but also on the occurrence of contexts in which it is required. I will go back to this inherent difficulty in the following section, to explain how it was dealt with in this study. What is worth highlighting here is that, on the one hand, in each session, inflections are mostly used with more than one verb type (see Tables 5.3 and 6.3), on the other, **error rate** is not only very **low** but also **evenly distributed** across the seven person-number combinations that appear in the speech data, spanning from 0% to 5% for the singular markers and 0% to 7% for the plural markers (see Tables 5.2, 5.32 and 6.2, 6.31). The low and homogeneous character of the error rate shows that each individual inflection is provided with a very similar degree of reliability. This circumstance suggests **across-the-board acquisition** of such inflections (Pizzuto & Caselli, 1992; Rubino & Pine, 1998; Gathercole *et al.*, 2002). It is especially interesting that this is the case even in Ava's samples, because she is **in the early stages of combinatorial speech**.

7.4.2 Contrastive use of verb types

The use of each given verb type with multiple inflections is also a sign of morphological productivity. Italian is an ideal language in which to conduct this type of analysis. The reason for this is that, in Italian, there are eight finite, non-compound tenses and each person-number combination is marked with a different tense/agreement suffix in each of such tenses. Moreover, as mentioned in the methodology chapter, the distribution of Italian verbs across three conjugations also contributes to this great variety of verbal endings. As a result, in theory, there should be 144 different verb endings but, because of a certain degree of syncretism, the inflectional bound morphemes are 96 for finite non-compound tenses alone (which is in stark contrast to the two overt morphemes of which the English language makes use in finite non-compound tenses). The very large number of different inflectional suffixes makes it highly unlikely that Italian-acquiring children may have rote-learned all the different forms that a given verb type may take (Ambridge & Lieven, 2011). Amy and Ava use 67 and 64 verb types in the present tense respectively and in both data sets 33% of these verb types are used with at least two different inflections. When all the non-compound tenses that appear in their speech samples are considered, the number of verb types rises to 77 and 68 for Amy and Ava respectively. Amy uses 36% of such verb types with at least two different inflections and Ava 41%. While, on the one hand, these figures imply that some of these verb types are used with more than two endings (17% and 12% in Amy's and Ava's files respectively) on the other, they also mean that 60% of verb types only appear with one ending on average. However, as previously noted, there is an inherent difficulty in determining productivity on the basis of naturalistic speech samples. Like the use of a given inflection with multiple verb types and in consecutive samples, the appearance of a given verb type with multiple inflections is left to chance in a regime of spontaneous data collection. As mentioned in section 7.3, even adults have been shown to not use more than two inflections with each verb type on average in naturalistic corpus data, which equally implies that several verb types are used with only one inflection (Aguado-Orea, 2004). This inherent limitation has been addressed in two ways in this study: the administration of an elicitation task in each language that provided contexts for the production of verb types with multiple inflections and the investigation of converging error data, i.e., error forms that specifically target the issue of morphological productivity.

The outcome of the elicitation task was discussed in section 7.3. Error forms supposedly showing productive and non-productive use of inflections are the focus of the second and the third research question respectively.

7.4.3 Cross-linguistic emergence of tenses

Contrary to what has been argued in previous studies of BFLA children acquiring language pairs characterised by a different level of inflectional richness (e.g., Paradis & Genesee, 1996, 1997; Gawlitzek-Maiwald & Tracy, 1996; Sinka & Schelletter, 1998), the two BFLA children in this study display no differences in the emergence of inflectional morphology between a morphologically rich language, Italian, and a language with impoverished morphology, English, at least in the data collected for this study. In this respect, the only evident effects of the morpho-syntactic structure of the input language are limited to the emergence of specific tenses. Tenses that are more frequent in the target language appear earlier in the relative language's speech samples. It is this circumstance that, in turn, affects the earlier appearance of a given auxiliary across the Italian and the English speech samples (see section 7.4.4). For example, the present perfect is used much more frequently in Italian than in English. Ava and Amy's speech samples reflect this difference. They use the present perfect in each session in Italian but very rarely in English. Conversely, the simple past is very frequently used in English but it is seldom used in Italian. As a result, it never appears in the Italian data but, in Amy's English samples, it is used in all sessions except the last and, in Ava's English data, it is used from the beginning of the longitudinal study and in most sessions. Similarly, the present continuous and the past continuous, which are more frequently used in English than in Italian, are widely represented in the children's English speech samples, but not in the Italian ones. In Italian, the past continuous never appears in Ava's speech samples and it is used only once and in the very last session in Amy's data. Conversely, in English, it appears from session two (2;11.15) in Amy's data and it is then used in sessions four, seven, eight and twelve; in Ava's samples, it appears from session five (2;5.8) and it is used in sessions six, eight, nine and eleven.

The present continuous is always used in a target-like fashion in English, while in Italian this is not always the case. In addition to examples of finiteness deviations that occur in present continuous contexts in both children's Italian data sets (see section

7.6.2.3), there are also non-target uses of the auxiliary *essere* in Ava's samples that look like a direct translation from English. Limited to the first person singular, she always employs the auxiliary *essere* instead of the target verb *stare* in present continuous periphrastic structures. As highlighted by Gawlitzek-Maiwald and Tracy (1996), one of the constant issues faced by child language researchers is establishing whether target-deviant utterances are imputable to the child's interim grammar or to performance factors. This problem becomes even more complex in BFLA acquisition, where investigators have also to decide whether or not target deviations are due to the potential interaction of the two syntactic systems that children are acquiring. What makes the decision so difficult is that it has been shown in the literature that monolingual children produce forms that could pass for translation from other languages. For example, monolingual acquirers of English have been shown to fail to use the periphrastic *do* in questions or negative sentences, which make their utterances sound like translations from languages like Dutch or German (Gawlitzek-Maiwald & Tracy, 1996; De Houwer, 2009). Monolingual acquirers of German fail to place the finite verb in second position or the participle in utterance final position, thus producing utterances that sound like translation from English (Gawlitzek-Maiwald & Tracy, 1996). In the case of Ava's non-target use of *essere* in present continuous periphrases, one possible explanation is that the tense in question is modelled on the English structure, because this tense is acquired earlier in English than in Italian. Unfortunately, previous longitudinal studies of monolingual acquirers of Italian (e.g., Pizzuto & Caselli, 1992) give no information about the patterns of appearance of the present continuous and the target deviant forms associated with it. Indeed, although in Ava's Italian samples the present continuous is used once in the first play session (*stanno andando a letto, they are going to bed* 2;0.26), it does not appear again until the sixth session. Furthermore, before its 're-appearance', Ava produces infinitival forms in contexts in which the present continuous is required on two occasions, at the age of 2;4.10 and 2;5.8. Conversely, in the English samples, the present continuous is consistently used in a target-like fashion from the first session and throughout the sampling period and it appears in each play session, except session two. Indeed, the claim has been made in the literature that certain features of a BFLA child's ambient languages may be subject to transfer when they are normally acquired at different stages of grammatical development. Yip and Matthews

(2000) found that Chinese-English BFLA children produced relative clauses in English structured on the Chinese model and concluded that the transfer was due to the fact that relative clauses are acquired earlier in Chinese than in English.

One other possible explanation of the use of *essere* instead of *stare* relates to bilingual processing mechanisms. It has been claimed that the inhibition of a bilingual's other language is never complete (e.g., Grosjean, 1999; Hulk, 2000) and that, sometimes, bilinguals may engage in a sort of "covert code-switching" (Meisel, 2007, p. 506), where the syntactic structures of one language are activated but no lexical items from that same language are used. However, it is worth noticing that the same phenomenon is absent from Amy's speech samples. In Amy's data too, there is a discrepancy in the use of the present continuous between the two languages. In the Italian speech samples, it only appears in four sessions and, in session eight, an infinitival form is used in a context where the present continuous is required. In English, the present continuous is always used correctly and appears in all sessions where English samples were collected, with the exception of the first session. The absence of this phenomenon from Amy's samples suggests that if a transfer from English into Italian may take place with respect to the tense in question, it is short-lived, i.e., it ends as soon as the tense becomes better established in the BFLA child's Italian grammar.

7.4.4 Function words

The analyses of function words, i.e., copula, auxiliary and verbal predicate forms, show a comparable level of accuracy and productivity across the two languages in both data sets. With reference to the copula, from the beginning of the longitudinal study, both children appear to have knowledge of its **obligatory nature** in both of their languages. The data also provide evidence of **contrastive use of person and number**. In the two languages varied constructions appear, which suggests that **knowledge of the copula is based on the abstract construction DP + copula + DP**. Moreover, **all the copular constructions are language specific**: in Italian, subject pronouns are phonetically realised only if they serve an emphatic purpose and instances of VS structures occur, while in English expletive subjects are never omitted. This finding adds to a growing body of literature on the monolingual-like fashion in which 2L1 acquisition takes place (e.g., Paradis & Genesee,

1996, 1997; Sinka & Schelletter, 1998; Paradis, Nicoladis & Genesee, 2000; Paradis, Crago, Genesee & Rice, 2003; Patterson & Pearson, 2004; Bonnesen, 2009 among others).

As to the verbal predicates *essere* and *to be*, both children make use of structures that cover a variety of meanings and incorporate members of different lexical categories. Such variety suggests that their knowledge of the verbal predicates is not item-based or construction specific. Quite to the contrary, predicative structures appear to be built on the basis of a more general construction of the type DP + VP + PP. The only noticeable difference between the two languages concerns the use of the existential construction *c'è/there is* and *ci sono/there are*. In Italian, there is evidence of contrastive use of singular and plural forms in the present indicative and the imperfect. In English, the construction in question is exclusively used in the singular and it is only in the samples of the eldest child that tokens of the imperfect appear. In addition, both children produce singular forms with plural subjects (see sections 5.6.5 and 5.8.6 for Amy and 6.6.5 and 6.8.6 for Ava). However, this use of the singular form of the existential construction with a plural subject is quite common in the speech of adult native speakers of English and, therefore, it cannot be regarded as evidence of non-contrastive use of singular and plural forms in the speech of young children.

With respect to the auxiliaries *avere* and *to have*, the main difference concerns the more limited use and the later emergence of *to have* in English, in comparison with the Italian counterpart *avere*. In Ava's Italian samples, tokens of the first person singular emerge from the beginning of the study (2;0.26) and by the age of 2;6.6, the three singular forms of the paradigm are represented in her data. By age 2;9.9, the full paradigm (with the exception of the second person plural) is not only represented in her Italian speech samples but also almost completely established. In English, only tokens of the first person singular and the first person plural appear. Tokens of the first person singular emerge when she is 2;5.8, that is to say five months later than in Italian. This discrepancy seems imputable to the wider use that the Italian language makes of *avere* as an auxiliary in comparison with the use that English makes of *to have*, rather than to a cross-linguistic asymmetry in the emergence and subsequent acquisition of the two auxiliaries. Indeed, *avere* is used as an auxiliary in 77% of contexts in Ava's samples and in 62% of contexts in Amy's samples, whilst *to have* is never used as an auxiliary in both children's English data sets. Gawlitzek-

Maiwald and Tracy (1996) similarly found the auxiliary *haben* appeared earlier than the auxiliary *have* in the speech of Hannah, the English-German child they studied for a period of two years and two months. They noted that, for a period of five months, from when she was 2;4 to when she was 2;9, Hannah repeatedly engaged in a form of code-mixing where *haben* was systematically borrowed into English utterances. They observed that Hannah omitted *to have* even when asked to rephrase in English a German utterance, in which the auxiliary had just been supplied.

(2;4.8)

3.5 *HAN: Ich hab geclimbed up

*MOT: what?

*HAN: I climbed up

This observation, together with the fact that Hannah also borrowed inflectional suffixes, modals and *wh* elements from German into English, led them to conclude that functional items are acquired earlier in German than in English and that BFLA children may bridge structural gaps in one language by borrowing what they need from their other language. I argue that this type of cross-linguistic asynchrony should not be interpreted as proof of the fact that the acquisition of inflectional items is a function of the richness of the inflectional system of the language being acquired. It can be due to the broader use that a given language makes of a given functional item. Indeed, with respect to (3;4), Hannah's reply is perfectly acceptable in English, where the simple past is used in contexts where the present perfect is required in German. The same is true for Italian. As mentioned earlier, in the Italian data, *avere* is predominantly used as an auxiliary, while, in the English data, it is never used with an auxiliary function. This circumstance can be accounted for by the fact that, in Italian, *avere* is used as an auxiliary in present perfect periphrases with all transitive verbs and some intransitive verbs as well; in English, *to have* is equally used as an auxiliary in present perfect periphrases. However, in Italian, the present perfect is much more frequently used than in English, where the simple past is required in most of the contexts in which, in Italian, the present perfect would be used. Indeed, even in Amy's samples, where the full paradigm of the auxiliary in question is established in Italian and all the person-number combinations are represented in English, the use of *avere* is more conspicuous in Italian than in English, where even at this later stage of linguistic development, it is still

never used in present perfect periphrases. Indeed, the use of *essere/be* as an auxiliary is more precocious and more prevalent in English than in Italian, despite English being morphologically poorer than Italian. This cross-linguistic discrepancy can be accounted for by the fact that, in English, the present continuous and the future continuous are often used in contexts where, in Italian, the present indicative is used.

Hence, cross-linguistic discrepancies in the emergence of inflectional items do not seem to be due to a general trend, in which the acquisition of inflectional morphology is a function of the richness of Inflection (e.g., Paradis & Genesee, 1996, 1997; Gawlitzek-Maiwald & Tracy, 1996; Sinka & Schelletter, 1998; Caselli, Casadio & Bates, 1999). One should not take differences such as the earlier appearance or more prevalent use of a given auxiliary in one language than in the other or contrastive use of the existential construction in Italian than in English as proof of the fact that morphological contrasts emerge earlier in a more richly inflected language than in a language with scant morphology. It has already been argued in the literature that no differences can be found in the pace of acquisition of grammatical morphology in Italian-English BFLA children (Serratrice, 2001). This conclusion is based on the broader assumption that children acquiring different language types rely on the same item-based acquisition strategy; thus, in the early stages of combinatorial speech, they do not have productive command of inflections in any language. The data presented here equally suggest that asymmetries in the emergence of inflections across Italian and English are only apparent, because they are imputable to structural features of the languages in question. At the same time, the children in this study display productive use of inflectional morphology in both language types, thus suggesting that, in the early stages of acquisition, inflections are used in an adult-like fashion, regardless of the intuitive complexity of the inflectional system of the language being acquired.

7.5 Implications of findings for question 2

The appearance of each given inflectional item does not only depend on the speaker's ability to use it but also on the occurrence of contexts in which it is required. Therefore, occurrences of inflections with multiple stems (Pizzuto & Caselli, 1992) and in 90% of obligatory contexts (Brown, 1973) over consecutive speech samples (Cadzen, 1968) may not be sufficient criteria to establish productivity in a regime of spontaneous language

sampling, where it is not possible to control for the appearance of obligatory contexts. For example, Pizzuto and Caselli (1992) note how some of the morphemes they investigated failed to reach a threshold of acquisition due to an insufficient number of contexts (1992, p. 530). This issue has been addressed in this study in the second research question, which focuses on overgeneralisations, intra- and cross-linguistic borrowings in the morphological domain. Indeed, overgeneralised forms, intra- and cross-linguistic morphological borrowings cannot have been heard in the input and, therefore, show that inflections have been detached from stems and are used productively. Overgeneralisations, intra- and cross-linguistic borrowings occur in both children's data sets from the earliest stages of the longitudinal language sampling period and in both languages. The cross-linguistic comparison shows that, in Ava's samples, they exhibit a more varied character in Italian than in English, where they are limited to the verbal domain, whereas in Amy's samples, they relate to the verbal and the nominal domain in both languages.

This type of target deviations is not congruent with the constructivist assumption that children stick to what they hear in the input (e.g., Pizzuto & Caselli, 1992; Serratrice, 2001; Gathercole, 2007). Moreover, it is of great interest in relation to the question of whether children are productive with inflectional morphology in the early stages of combinatorial speech. Instances of morphological mixing open a window on the actual underlying morphological process as opposed to just strictly relating to one single inflectional item as point of acquisition and the productivity criterion do. What this means is that, as mentioned above, the occurrence of a given inflection with multiple stems and in at least 90% of obligatory contexts over consecutive sessions is left to chance in a naturalistic speech sampling setting. Even when these consecutive occurrences do take place, the conclusions that can be drawn apply to the individual inflections in question. Conversely, instances of overgeneralisation, intra- and cross-linguistic borrowing do not only speak for the individual inflections with which they occur, but for the underlying process that makes the phenomenon possible. In the rules versus analogy generativist-constructivist dichotomy, early overgeneralisations support rules, because analogies take time, especially in the BFLA setting, where contexts of language exposure are necessarily fewer because distributed between two languages (Gathercole, 2007). Intra- and cross-linguistic borrowings are equally incongruent with the constructivist claim that acquisition

is context-based and lexically driven, because the linguistic context from which children collect strings of language can only be monolingual at the level of the internal structure of words (Gathercole, 2007) and cannot contain forms inflected with a target deviant allomorph.

The occurrence of instances of morphological mixing in the speech of BFLA children from the outset of combinatorial speech suggests that, from a very early stage of language acquisition, children have awareness of the discreet and combinatorial nature of language. In other words, they appear to know that words can be decomposed into minimal morphological units which carry their own meanings and can be reassembled into new linguistic items to create new meanings, that are predictable from the sum of the individual meanings carried by the smaller parts involved in the ‘amalgamation’. The early occurrence of instances of overgeneralisations, intra- and cross-linguistic borrowings at the level of inflectional morphology more specifically also suggests that young children are aware that such component units may carry grammatical meanings and consequently that they have knowledge of the purpose that Inflection serves within language. This early knowledge, particularly in children who are acquiring two native languages and for whom the relative amount of exposure to each language is therefore likely to be reduced, is congruent with the nativist assumption that some important aspects of children’s linguistic knowledge are part of their genetic make up. In particular, early knowledge of inflectional operations appears to align well with the ‘three factors’ account (Chomsky, 2005). This account represents a fairly recent development within generativist-nativist theories, which departs from previous nativist theorisations in that it assumes that the linguistic knowledge genetically endowed to humans is possibly limited to “the core semantics of minimal meaning-bearing elements”, and “the principles that allow infinite combinations of symbols” (Chomsky, 2005, p. 4). As mentioned in Chapter 1 (see section 1.3.3), in this view, what allows the language faculty to be “a system of discreet infinity” (Chomsky, 2005, p. 11) is the fact that it incorporates a simple function, labelled as *Merge*, that amalgamates individual linguistic items into a new item, which, in the simplest case, is constituted by the set of these individual items. Thus, this basic operation accounts for the unique property of languages of being “an unbounded system of hierarchically structured expressions” (Chomsky, 2005, p. 11). It is worth pointing out that combinatoriality and discreteness are also two of the

properties of language identified by Susan Goldin-Meadow (2003) as resilient, because they appear to emerge even in the presence of very little linguistic input. Goldin-Meadow (2003) studied profoundly deaf children whose language development took place in the absence of language input, but in an emotionally and materially normal environment. These children were born to hearing parents, who did not expose them to a sign language, because they wanted them to acquire their verbal language and to be part of their cultural world. Nevertheless, all ten children succeeded in creating a gestural system of their own, which was structured in language-like ways. The gestures they invented were made of a limited set of hand-shapes and motions, each one consistently representing an independent and meaningful 'morpheme'. These morphemes combined with other morphemes in the system to create longer units, the meaning of which was predictable from the meaning of their component parts. These 'signed words' were not used in isolation but combined into longer sequences. The children created systems that shared some of the features, such as discreteness, combinatoriality and recursion, that characterise all natural languages. They used some of the devices, such as word order and inflections, that human languages use. They made use of the syntactic categories of noun, verb and adjective. Not only were their gestures morphologically and syntactically structured, but also the children used them to cover far more than just the basics of communication. They used them narratively, to refer to things or events displaced in time and space, meta-linguistically, to refer to others' gestures, and even to 'talk' to themselves. However, the systems these children created did not reach the level of complexity that characterises all natural languages. For instance, they lacked tense marking. The argument put forward by Goldin-Meadow (2003) is that only some parts of the linguistic structure are 'resilient', in the sense that they emerge even in the presence of very little language input, because they are induced by innate syntactic knowledge. Indeed, Goldin-Meadow points out how some of the process of language creation she observed may have been triggered by some sort of input, as each developmental step was driven by data from previous steps, data which the children themselves generated. However, more particular environmental circumstances, such as external input or, at least, the presence of a group of willing conversational partners, is indispensable for the 'fragile' properties of language to develop and, consequently, for the creation of a full-blown linguistic system.

7.6 Implications of findings for question 3

The inherent difficulty of determining productivity in the analysis of spontaneous speech samples has also been addressed through the careful analysis of omission, agreement and finiteness deviations. These target deviant forms are normally considered a manifestation of non-productive use of inflections. For example, an agreement deviation where a third person singular form is produced in a third person plural context may suggest lack of productivity with the third person plural. These analyses were performed with the aim of establishing whether this type of errors appears to be random in nature or alternatively have a rather systematic character.

7.6.1 Agreement deviations with present indicative endings

Agreement deviations with present indicative endings exclusively occur in Italian. The analysis shows that they are not random, because any given agreement error only affects one semantic property, i.e., either person or number. All but one of the person deviations consist of the provision of the second person singular ending in a context where a first person singular or a third person singular marker is required. It is interesting to notice that, at the same time, the second person singular morpheme is the only present indicative ending that appears in 100% of obligatory contexts, throughout the children's Italian corpus data. In fact, the non-target use of the second person singular marker affects the accuracy rate of the morphemes that are not supplied in their obligatory contexts. This circumstance highlights the limits of Brown's (1973) concept that mastery of a grammatical morpheme is achieved when the morpheme in question is provided in at least 90% of obligatory contexts, because the appearance of a given morpheme in even all obligatory contexts does not say anything about its appearance in non-target contexts. It is only a detailed analysis of error data that can be disambiguating and show which morpheme exhibits the non-target behaviour. Brown's criterion works best in an English-type language, where agreement errors as such do not occur (Harris & Wexler, 1996) and where the majority of verb and noun forms are not morphologically marked.

In Amy's samples, all person deviations are also unidirectional, because they revolve around the non-target use of the second person singular marker in a first person

singular context²⁰. In Ava's data, there are four person deviations and they all consist of the use of a second person singular marker in a first or third person singular obligatory context. Here the argument can be made that at the time when they take place, the second person singular morpheme is new in her repertoire. Indeed, the ending in question appears for the first time in her speech samples in the sixth session and the above-mentioned deviations all take place in the seventh session. In other words, their appearance over a limited period of time suggests that a developmental step is taking place. It is also worth pointing out that in both children's samples person deviations occur with irregular verbs, i.e., verbs that follow a less transparent morphological pattern²¹.

Number deviations are even fewer than person deviations and in all cases the plural status of the subject is rather opaque. In Amy's samples, three number deviations occur. In session three and ten, the singular marker *-e* is borrowed into an obligatory context for the plural marker *-ono*, while in session four the reverse pattern is attested. However, as mentioned in section 5.4.1 and 5.8.3, in all cases, the singular or plural status of the subject is not transparent. Furthermore, there is no evidence of lexical effect (Aguado-Orea, 2004), because both morphemes are correctly used with the same verb types that occur in the non-target utterances in sessions seven and nine. In Ava's samples, there is only one number deviation and it occurs in the very first session. It consists of the use of the third person singular ending *-a* in a context where the third person plural morpheme *-ano* is required.

In sum, the data show that both children's use of present tense endings is close to perfect and that the rare agreement errors that they produce display a highly systematic character. The virtually errorless use of present indicative endings is consistent with previous findings concerning monolingual acquirers of Italian. For example, Guasti (1994) found that three young monolingual acquirers of Italian produced the target verbal endings in more than 95% of obligatory contexts. The systematic character of target deviations mirrors findings from the experimental study on which the elicitation task used in study has been modelled and which focused on the acquisition of verbal and nominal morphology in

²⁰ In one case only, the second person singular morpheme is provided in a third person singular context but, as pointed out in section 5.4.1, this target deviation is only apparent, because it likely results from the omission of the syntactic structure needed to report direct speech.

²¹ In Amy's samples, five out of six person deviations occur with the irregular verbs *volere* and *sapere*. In Ava's data, the four person deviations revolve around the use of three verb types and two of them are the irregular verbs *volere* and *fare*.

Italian (Leonard *et al.*, 2002). It was found that agreement errors with verb morphology are never random in nature, because they only deviate from the target by one semantic property. Singular forms are more likely to replace plural forms and third person inflections are more likely to substitute for first person inflections than the reverse. The present analysis confirms that agreement errors only deviate from the target by one grammatical feature and that number deviations tend to be unidirectional, because they mostly occur from singular into plural and not vice-versa. However, it also suggests that agreement deviations are even more principled than how the results from the above-mentioned experimental study indicate. Person deviations only occur in the singular and concern the borrowing of a second person singular marker into a first or a third person singular context. Number deviations not only virtually always occur from singular into plural, but they are also limited to third person contexts. The absence of random errors and the use of the same verb types in target and non-target utterances suggest that children operate on the basis of a productive rule. If errorless speech production reflected rote learning, agreement errors should not be principled, but they should display a random character. They should also display a marked lexical effect, with little or no overlap in children's use of the same verb type with target morphemes (Pizzuto & Caselli, 1992; Gathercole, Sebastián & Soto, 1999).

As mentioned above, there are no agreement errors with lexical verbs in English, because uninflected verb forms occurring in root contexts are categorised as finiteness deviations and personal pronouns are consistently used in a target-like fashion. For instance, the third person singular marker never appears with a first or a second person singular pronoun; the second person singular pronoun is never used in first person singular contexts. This finding is in agreement with what has been reported in previous studies (e.g., Harris & Wexler, 1996; Hoekstra & Hyams, 1998). Harris and Wexler (1996) argued that native acquirers of English do not make agreement errors. The researchers found that of 1352 utterances containing the first person singular pronoun *I* from corpora of young native English-speaking children, only 0.02% occurred with a verb bearing the third person singular marker *-s* (e.g., *I plays*).

7.6.2 Finiteness deviations

In the data, finiteness deviations occur in both present indicative contexts and compound

tense contexts. Root infinitives (Rizzi, 1994) occur in Italian and English. Non-finite forms in a context where a compound tense is required exclusively occur in the Italian files. In Amy's Italian samples, there is only one instance of root infinitive, it takes place in the fourth session (3;2.2) and it is used in a context for the first person plural. In her English samples, there are two instances of bare forms in a present indicative context and they take place in the second session (2;11.15) and in the sixth session (3;3.10). In Ava's Italian samples, there are five root infinitives. The first four of them occur in session one (2;0.26) and in session three (2;3.10). Three root infinitives occur in a context where a first person singular is required. In one case, in the first session, the root infinitive occurs in a third person singular context. This circumstance is due to the fact that, as young children often do (Guasti, 1994), Ava also uses the third person singular to refer to herself. The last deviation takes place in the sixth session (2;6.6) and consists of the use of an infinitive in an obligatory context for the first person plural. In the English samples, on three occasions, uninflected forms are used in a third person singular context, namely in sessions seven (2;7.10), ten (2;10.15) and eleven (2;11.14). In both children's files, Italian and English root infinitives display different interpretative properties (Hoekstra & Hyams, 1998) and the only common element is the fact that they occur in a context for a tensed verb form.

7.6.2.1 Italian root infinitives

The Italian root infinitives all appear to have a modal meaning. Indeed, if one looks at the linguistic and extra-linguistic context in which the infinitival forms in question occur, the modal interpretation becomes a very plausible explanation. With respect to the linguistic context, all the root infinitives occur in utterances containing eventive verbs. Cross-linguistic research has provided strong evidence that the modal interpretation is restricted to verbs denoting events (e.g., Meisel, 1990 for French; Platzack, 1990 for Swedish; Ingram & Thompson, 1996 for German; Wijnen, 1998 for Dutch; Freudenthal *et al.*, 2009 for Dutch and German). As for the extra-linguistic context, it is clear that, in the utterances in question, the infinitives convey modal messages, i.e., they refer to events that Amy and Ava want to take place. The modal reference effect and the eventivity constraint are supported by both constructivist (Freudenthal *et al.*, 2009) and generativist-nativist (Hoekstra & Hyams, 1998) accounts, except that they base their interpretations on very

different theoretical assumptions.

Hoekstra and Hyams (1998) point out that there is a fundamental difference between ‘true’ infinitives occurring in root contexts and English bare forms. True infinitives are morphologically marked, whereas English bare forms lack an infinitival ending. The researchers argue that the modal meaning of root infinitives is attached to the infinitival bound morpheme. In this view, root infinitives, occurring in languages where infinitives are characterised by the presence of an actual infinitive marker, may be accounted for by the fact that children are much less restricted than adults in the use that they make of such morphology. This explanation is congruent with the fact that also in adult Italian the infinitive may have a deontic or counterfactual reading. With regard to the deontic reading, for example, in Italian the infinitival morphology is used to realise the negative imperative (e.g., *non usare il coltello*, *do not use the knife*). An example of counterfactual reading occurs in Amy’s input corpus, when her mother reacts to Amy’s statement that she and her grandfather wanted to buy a public fountain (*come comprare la fontana?* *to buy the fountain?*). However, the modal reference and the eventivity restriction can also be accommodated under constructivist accounts. In this view (Freudenthal *et al.*, 2009), the modal reference effect can be observed in the speech of young children when, in the input, infinitives mostly occur in utterances containing modals. The eventivity restriction stems from the circumstance that stative verbs do not normally combine with modals. This explanation is not supported by the data presented in this study because the verb types that in both children’s output corpora occur in root infinitives contexts are not predominantly used in modal compound finites, in their respective input corpora. Indeed, in Ava’s input corpus, they predominantly appear in the tensed form (see Table 6.33). In both children’s input, when infinitival forms occur, they are more frequently used in non-modal contexts, i.e., after a governing preposition or a verb selecting the infinitive, than in modal compound finites (see Tables 5.34 and 6.33). Moreover, in Ava’s input corpus, inflected forms remain predominant even when infinitival forms occurring in modal and non-modal contexts are combined.

7.6.2.2 English bare forms

Generativist-nativist and constructivist accounts share the claim that the modal reference

effect and the eventivity constraint do not operate in English (Hoekstra & Hyams, 1998; Freudenthal *et al.*, 2009). Indeed, unlike the Italian infinitives, the English bare forms do not seem to convey modal messages, but rather to refer to events that are taking place at the moment of speaking or that habitually take place (see sections 5.6.1 and 6.6.1 for a contextual analysis of the utterances in question). In addition, one of such bare forms occurs in an utterance containing a stative (*want*), and, as mentioned above, there is wide spread evidence that the modal interpretation does not apply to verbs describing a static state.

Under constructivist accounts (Freudenthal *et al.*, 2009), English bare forms are learned from compound finites in the input containing the dummy *do*. This explanation is not supported by the data presented in this study. The omission of the periphrastic *do* could only be plausible if Ava and Amy's root infinitive utterances were questions or emphatic. But the contextual analysis and intonation show that they are neither. There is also little relationship between bare forms in the output and compound finites in the input. In both children's English data sets, not just the verbs that they produce in the bare form but also the ones that they always correctly inflect predominantly appear in compound finites in the respective input corpora (see Tables 5.34 and 6.33). In Ava's input corpus, the only verb type that does not overwhelmingly appear in compound finites is one of the three verb types that she only uses in the bare form. This is the verb *to open*, which appears twice in compound finites and twice in the tensed form. Conversely, the verb *to want* appears 102 times in compound finites and only nine times in the inflected form in the input corpus and of this verb she exclusively provides the correctly inflected form. In Amy's English data, the only verbs that do not overwhelmingly appear in compound finites in the input corpus are *to do* and *to live*. It is noteworthy that, however, in both children's input corpora, the inflected form of *do* (*does*) predominantly appears in questions, i.e., in utterance initial position (e.g., *where does the fish live? And does anyone else live in the house, Ava? What does the driver of the wheels on the bus say? Does she prefer this kind of pasta?*). This is always the case in Ava's input corpus, while in Amy's input corpus *does* occurs in utterance initial position 42 out of 45 times. Another problem with the constructivist account is that the same verb types should display the same rates of root infinitive errors. Again this conclusion is not supported by the data presented in this study. For example,

Ava correctly inflects the third person singular with the verb *to live* (*she lives with her mummy*) just a few utterances before using the very same verb in its bare form (*the panda live with his daddy*) (see sections 6.6.1 and 6.8.4). Particularly incongruent with the hypothesis that root infinitives stem from compound finites in the input is Amy's first root infinitive utterance (*because **she don't** want to go and change her nappy* 2;11.15, see also sections 5.6.1 and 5.8.4). Clearly, in this utterance, the lack of finite morphology cannot be accounted for by the omission of the dummy *do*. Indeed, this is the exact type of utterance that should never occur if English bare forms stemmed from the omission of inflection-bearing material in compound finites, because it contains a perfect example of a compound but yet non-finite verb form.

In sum, the analysis of the two children's root infinitives across their two languages suggests little relationship between the rate at which individual verbs occur in compound finites in the input and root-infinitive errors in the output. In Italian, root infinitives occur more frequently in the tensed form in the input and, even when they occur in the infinitival form, they more frequently appear in non-modal contexts than in modal compound finites. In English, not just root infinitives but all verb types that occur in third person contexts in the children's output corpora appear much more often in compound finites than in the tensed form in their input corpora, including the verbs that they always inflect. Furthermore, the occurrence of the same verb type in both the inflected and the uninflected form within the same stretch of conversation is not congruent with the claim that the same verb types should display the same rate of root-infinitive errors (Freudenthal, Pine, Aguado-Orea & Gobet, 2010).

7.6.2.3 Italian non-finite forms in compound tense contexts

If finiteness deviations were due to failure in storing words from the beginning of an input utterance, the non-finite forms produced should exclusively consist of the same non-finite form in which the lexical verb appears in the particular compound tense periphrasis, in the input utterance. For example, a finite deviation produced in a present continuous or past continuous context should always consist of a gerund and a finite deviation produced in a present perfect context should always consist of a past participle.

7.1 Input Utterance

Child's utterance

(che cosa stai) facendo? (what are you doing?)	→	*facendo questo (doing this)
(che cosa stavi) facendo? (what were you doing?)	→	*facendo questo (doing this)
(che cosa hai) fatto? (what have you done?)	→	*fatto così (done this)

The non-finite forms produced by Amy and Ava in compound tense contexts do not always follow this pattern. In Amy's speech samples, there are nine such finiteness deviations and four of them consist of infinitival, i.e., non-matching, forms (see section 5.8.4). On one occasion, in a context for the present perfect, she produces the reflexive pronoun and the past participle, thus only omitting the intermediate, agreement-bearing component of the target verb form. Ava makes twelve finiteness errors in compound tense contexts and of those three consist of non-finite forms that do not match the ones that would appear at the end of an input utterance. (see section 6.8.4). Therefore, the analyses of Italian root infinitives, English bare forms and Italian non-finite forms in compound tense contexts are not congruent with the constructivist account of finiteness deviations with regard to the main claim that "OI errors are learned from compound finites in the input" (Freudenthal *et al.*, 2009, p. 9).

It is worth noting that, in Amy's case, six out of nine finiteness deviations occur in past continuous contexts and of those three are constituted by infinitival forms. They appear for the first time in the samples in the sixth session and continue until the very end of the study. On the other hand, the past continuous only appears in her speech data once in the last play session. In Ava's case, this type of finiteness errors occurs from session one to session eight and exclusively concerns present continuous and present perfect contexts. Although both tenses are present in her speech samples from the beginning of the longitudinal study, there is reason to believe that they are not well established in her grammar yet. This seems to be especially true for the present continuous. This tense only occurs once in the first session and, after that, it does not occur again until session six, which is to say for a period of six months. In sessions four and five, the three above mentioned non-matching forms are used in present continuous contexts. Thus, it is plausible that this tense is just starting to take form in her grammar. This hypothesis is accordance with what was observed in relation to Amy's behaviour in past continuous contexts. The present perfect seems better established because, although out of twelve

compound non-finites ten occur in present perfect contexts, it is more consistently used in her data. Indeed, it appears in all sessions with the exception of session four and it is mostly used in a target-like fashion. There is also an overgeneralisation error with this tense that suggests that it is used productively (see section 6.4.3). However, while the latest finiteness deviation in a present perfect context takes place in session eight (2;8.0), the overgeneralisation in question occurs three months later (2;11.14). After all, Ava is in the very early stages of multi-word combinations, her MLU values oscillate between 2.0 and 3.0 throughout the sampling period, and it is only natural that all compound tenses are of recent introduction in her speech production. Compound verb forms by definition can only begin to emerge when children's mean length of utterance reaches the two-word stage. Pizzuto and Caselli (1992) report that, across the three children they studied, compound tense forms appear later than simple tense forms. In the speech samples they examined, the earliest present perfect forms are attested between the age of 1;9 (first person singular, Claudia), 1;11 (third person singular, Francesco) and 2;0 (third person singular, Marco). One possible explanation of the Italian non-finite forms in compound tense contexts, then, is that when the children are unsure of which form to use, possibly because the compound tense in question is not well established in their grammars yet, they 'default' to the form that is the most available to them at any given time. The data seem to suggest that such form is an infinitive in the earliest stage of the acquisition of a given compound tense and a non-finite form that matches the form required in the compound tense in question in the subsequent stage.

7.7 Contribution to existing knowledge

This study presents four major findings, which can be summarised as follows:

- (i) In the early stages of combinatorial speech, the two Italian-English BFLA children in this study exhibit productive use of inflections as indicated by the following features of their spontaneous speech samples: low and evenly spread error rate among the known inflectional forms of the same paradigm; occurrence of function words in varied structures which suggests that they are operating on the basis of an abstract construction; occurrence of morphological overgeneralisations, intra- and cross-linguistic morphological borrowings,

which suggests that bound morphemes are being used on the basis of a general, adult-like procedure of the type stem + inflection.

- (ii) Although Italian is morphologically richer than English, in this study, the two Italian-English BFLA children display a comparable level of accuracy and productivity in their use of bound morphemes and function words across their two languages. Productive use of inflections in both languages suggests that the acquisition of inflectional forms is not a function of the richness of the inflectional system of the language being acquired. When cross-linguistic differences can be detected, these have to do with specific features of the target language, such as the more frequent use in the target language of a given tense which, in turn, requires a given *auxiliary*, rather than with a precocity in productivity that is relatable to the morphological complexity of the target language.
- (iii) In the data presented in this study, agreement errors with lexical verbs do not occur in English. In Italian, they oscillate between 0% and 7%, which shows that the different endings of the present indicative paradigm are provided with a similar degree of reliability. Moreover, they display a systematic character, which suggests principled use of inflectional suffixes. Number deviations are limited to third person contexts and unilaterally occur from singular to plural. Moreover, they tend to occur when the plural status of the subject is opaque (e.g., when the plural verb forms is required by the occurrence of two singular subjects or a plural translation equivalent). Person deviations only occur in the singular and revolve around the use of the second person singular marker in first or third person singular contexts. They also mostly concern irregular verbs.
- (iv) The analysis of finiteness errors shows that non-finite forms can be divided into three different types: Italian infinitives in present indicative contexts, English bare forms in third person singular present tense contexts, Italian non-finite forms in compound tense contexts. These appear to be separate phenomena that cannot be accommodated under the constructivist claim that finiteness deviations are learned from compound finites in the input for the following reasons. With respect to the Italian infinitives in present indicative contexts, the

verb types that occur in root contexts in the children's output corpora do not predominantly appear in modal compound finites in their input corpora. As to the English bare forms, all the verb types occurring in third person singular contexts across the children's output corpora predominantly occur in compound finites in their input corpora, including the verb types that they always use in a target-like fashion. This in turn suggests little relationship between root infinitives in the children's output and compound finites in the input. In addition, non-finite forms occur in compound structures, which make it unlikely that finiteness deviations stem from the omission of utterance initial, inflection-bearing material from a rote-learned compound finite. The same verb types also occur in both the inflected and the bare form, even within the same stretch of conversation, which again suggests lack of lexical effect. The Italian non-finite forms produced in a compound tense context often do not match the ones that would appear in the same periphrastic structure in an input utterance. The omission of intermediate components of compound finites is also inconsistent with a learning mechanism based on a recency effect (e.g., Freudenthal *et al.*, 2007). Possible interpretations of these three types of finiteness deviations are summarised as follows. Italian root infinitives all have a modal interpretation and are all limited to utterances containing verbs describing events. These circumstances can be accommodated under Hoekstra and Hyams's (1998) account of root infinitives according to which, in languages in which infinitives are morphologically marked, root infinitives originate from the aspectual meaning of the infinitival suffix, which also surfaces in adult speech, but of which children make a much less restricted use. English bare forms can be interpreted as overgeneralisation errors that originate from the fact that children often hear uninflected forms in the input. Italian non-finite forms in compound tense structures seem to occur because of lack of or imperfect knowledge of the compound tense in question.

A further contribution provided by this study lies in the method used to analyse productive use of inflectional bound morphemes in a regime of spontaneous speech sampling. Previous criteria include the appearance of a given grammatical affix in at least

90% of obligatory contexts over at least three consecutive speech samples and with at least two different stems. These criteria are insufficient because, in the naturalistic setting, it is not possible to control for the occurrence of obligatory contexts for the use of a given inflection with different stems or of a given stem with multiple inflections. In this regard, a good example is offered by the considerable degree of variation that can be observed in the appearance of the same present indicative inflections with multiple verb types across sessions. Another example is the fact that several morphemes with a 0% error rate fail to achieve a threshold of acquisition as a result of the absence of obligatory contexts over at least three consecutive samples. In addition, the appearance of a given inflection in even all obligatory contexts says nothing about whether or not it also exhibits non-target behaviour by appearing in non-obligatory contexts. A good example is represented by the non-target behaviour of the Italian second person singular marker *-i* which does not transpire from its accuracy rate. This is the only present tense suffix that is supplied in 100% of obligatory contexts throughout the children's data. At the same time, the analysis of agreement errors shows that all person deviations revolve around the use of the marker in question in a first or a third person singular context. Hence, in the naturalistic setting, a reliable method to analyse productivity of bound morphemes should not just focus on accuracy rate and appearance of bound morphemes with multiple stems but also on converging error data. The conclusions that can be drawn on the basis of target deviations such as morphological overgeneralisations, intra- and cross-linguistic morphological borrowings do not exclusively apply to individual inflections. These instances of morphological mixing speak for the underlying process by which inflection-bearing material is generated and are testimony to the sophisticated linguistic knowledge that goes into them. They suggest that, at a very early stage of language acquisition and arguably under reduced exposure, children are aware of the discreet and combinatorial nature of language and have knowledge of the purpose that Inflection serves within language. Early knowledge of inflectional operations finds a theoretical home in the 'three factors' account (Chomsky, 2005) which assumes that UG provides children with an innate, basic operation, whose function is to *merge* already constructed linguistic items into new items and which therefore accounts for the most unique property of language of being "an unbounded system of hierarchically structured expressions" (Chomsky, 2005, p. 11).

Further original contributions of this study are represented by the interpretation of cross-linguistic borrowings as a sign of morphological productivity in the speech of BFLA children and by the identification of a specific type of morphological mixing, namely intra-linguistic borrowings. They consist of the use of a non-target allomorph, i.e., a morpheme that shares the same semantic properties as the target, but deviates from it by virtue of a purely grammatical feature, i.e., membership in a different noun/verb class with specific reference to Italian, and being a free morpheme rather than a suffix with specific reference to English. To the best of this author's knowledge, the latter have never been described in previous studies of morphological acquisition. For this reason, their identification as well as the claim that they represent an expression of morphological productivity may be regarded as an original contribution of this thesis.

7.8 Limitations of this study and directions for future research

There are inherent limitations in exploring productivity on the basis of naturalistic corpus data. One limitation has already been mentioned and relates to the fact that it is not possible to control for the occurrence of obligatory contexts that allow speakers to show how productive they are in the use of inflections. The other issue concerns the fact that corpora of spontaneously produced speech are inherently selective. The forms produced by children in a monthly two-hour recording session cannot provide a complete or even comprehensive picture of their linguistic abilities. In other words, they show what they do but not necessarily what they can or cannot do. Consequently, naturalistic data may show a bias against generativist or constructivist accounts alike. It may be the case that, outside the recording times, the two children used several other verb/noun types or even other inflections. As it may be the case that, in the course of the recording, they only used those verb/noun types that were more common in the input and that, therefore, were likely to be used correctly and with at least two inflections. These issues were addressed in this study by looking at converging error data and by eliciting inflectional forms in two tasks. The elicitation tasks also showed limitations with the children failing to provide forms that were reliably provided in the spontaneous speech samples. This happened despite careful planning of the elicitation activities, which were based on a task that had been administered to a larger sample of same-aged monolingual acquirers of Italian and for which the authors

report that even the youngest children in the original source study showed a general understanding of the task. The probes relied on elicitation techniques that are commonly used in production tests. The child participants were familiar with the person who administered the task and with the task itself of commenting on images shown to them. The analysis of error forms provided interesting insights into their morphological knowledge and the underlying morphological processes that are in place from the earliest stages of combinatorial speech. Not surprisingly this happened in particular in the analyses of the Italian speech samples. What is surprising is the English-centred perspective that theoretical debates about children's acquisition of Inflection have had over the past thirty years, considering the extremely impoverished inflectional morphology that characterises English. For instance, research on root infinitives and the production of regular morphological forms has focused on English bare forms and English regular past forms respectively.

The questionnaire also seems to suggest that more studies are needed to show the extent to which children are capable of learning two native languages. The children in this study have received exposure to both languages from birth. They live in a family where the benefits of bilingualism are known. The mother is proud of her identity and has perfect command of Italian. She actively tries to create an environment where the children can use Italian. At the same time, when asked to rate the need the children have to learn Italian she argues that they do not really need it, because they live in Ireland and to be understood they only really need English. This answer is puzzling coming from a person who puts so much effort into making sure that her daughters have all the opportunities to learn Italian. This answer seems to hide the fear that her children may be perceived as different or may be challenged linguistically because of the burden of learning two languages. More studies are needed to make it more clear to society that children can learn two languages as well and with the very same ease as they learn one language.

More studies are needed to explore morphological overgeneralisations and intra-linguistic borrowings that take place in the speech of children who are acquiring languages with wide arrays of allomorphs. Future research should look at cross-linguistic borrowings that occur in the speech of young BFLA children who are acquiring morphologically complex language pairs. The harmonious acquisition of inflections across different

language types also requires further investigation. In particular, future cross-linguistic research should focus on language pairs that differ with respect to the degree of transparency of inflectional items. In this respect, it would be very interesting to compare the acquisition of inflectional morphology between agglutinative language types, where each morpheme only codes for a single property, and fusional languages where each morpheme codes for a number of properties.

When I started with the first child, the reduced exposure associated with the BFLA setting and the fact that she was in the early stages of combinatorial speech seemed to suggest that that was the right age range to be looking at for an exploration of the emergence of features of Inflection and to address the question of early morphological productivity. Amy proved to be quite advanced in her morphological productivity and I was glad for the very fortunate opportunity of collecting data for her younger sister, who was only two years old and barely approaching the two word stage. Ava has proved to be quite advanced too. Future studies of morphological productivity should look at even younger children. It is worth pointing out once more that, had I had only their elicited data, I would probably have come to the opposite conclusion of going for older children in the exploration of morphological productivity.

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Appendix A

Questionario di valutazione del contesto linguistico del bambino bilingue

Questionario di valutazione del contesto linguistico del bambino bilingue

Nome e cognome del bambino sesso
data di nascita data di compilazione

- 1) Quando è iniziata l'esposizione del bambino all'italiano e all'inglese?
- 2) Quante ore al giorno è esposto a ciascuna delle suddette lingue? (specificare il totale dell'esposizione alle due lingue nei giorni infrasettimanali e nel fine settimana)
- 3) Il bambino è esposto anche ad un'altra (o ad altre) lingua(e)? In caso, specificare il totale dell'esposizione nei giorni infrasettimanali e nel fine settimana.
- 4) Quante ore al giorno dorme il bambino? (ore diurne e notturne)
- 5) Chi sono gli interlocutori del bambino in ciascuna delle lingue a cui è esposto?
- 6) Questi si rivolgono al bambino usando sempre la rispettiva lingua madre?
- 7) Lei che lingua usa con suo marito/sua moglie?
- 8) Si definirebbe una persona che parla molto?
- 9) Qual è la sua attitudine verso le due lingue parlate in famiglia? È importante per lei che il bambino oltre all'inglese parli anche l'italiano?

10) Quando il bambino le si rivolge in inglese, lei:

finge di non capire e chiede di ripetere ☐

riformula la frase del bambino in italiano ☐

risponde in italiano ☐

passa anche lei all'inglese ☐

altro (specificare)
.....

11) Qual è la lingua che il bambino usa più frequentemente o in cui mostra maggior sicurezza?

12) Potrebbe fornire qualche esempio?

13) Questa asimmetria si può notare anche nella comprensione? Il bambino sembra capire una lingua meglio dell'altra?

14) Potrebbe fornire qualche esempio?

15) Il bambino ha mai attraversato fasi in cui ha parlato solo una delle due lingue?

16) In caso, quale crede ne sia stata la causa?

17) Ritene che anche la capacità di capire fosse interessata?

18) Qual è stata la lingua in cui il bambino ha detto le sue prime parole?

19) Ricorda quanti mesi aveva il bambino?

20) Che lingua (e) usa il bambino mentre gioca da solo o con i suoi giocattoli?

21) In una scala da 1 a 5, come quantificherebbe l'effettivo bisogno che il bambino ha di usare l'italiano?

22) Potrebbe motivare la sua valutazione?

23) In una scala da 1 a 5, come quantificherebbe l'effettivo bisogno che il bambino ha di usare l'inglese?

24) Potrebbe motivare la sua valutazione?

25) Il bambino è regolarmente impegnato in specifiche attività finalizzate a promuovere l'uso dell'italiano? Se sì, che tipo di attività?

26) Come definirebbe la sua famiglia culturalmente e linguisticamente?

Appendix B

Questionnaire on the linguistic environment of the bilingual child

Questionnaire on the linguistic environment of the bilingual child

Name and surname of the child	sex.....
date of birth..... date	

- 1) When did the child's exposure to Italian and English begin?
- 2) How many hours per day is s/he exposed to each of the above-mentioned languages?
(please specify amount of exposure on week days and weekends)
- 3) Is the child exposed to any other language(s) too? If so, please specify the amount of exposure on weekdays and weekends.
- 4) Is the child a good sleeper? How many hours does s/he sleep each day (daytime and nights)?
- 5) Who are the child's interlocutors in each of the input languages?
- 6) Do they always address the child using their native language?
- 7) Which language(s) do you speak with your wife/husband?
- 8) Would you consider yourself as a talkative person?
- 9) What is your attitude towards the languages spoken in the family? Does it matter to you that the child speaks Italian as well as English?

(Question for the Italian parent)

10) When the child addresses you in English, you:

- pretend not to understand and ask to repeat ☐
- reformulate the child's sentence in Italian ☐
- answer in Italian ☐
- switch too and answer in English ☐
- other (please specify)
-

11) Which is the language the child uses more frequently or in which shows better confidence?

12) Could you give some examples?

13) Is such asymmetry noticeable also in comprehension? Does the child seem to understand one language better than the other?

14) Could you give some examples?

15) Has the child ever gone through phases of speaking only one language?

16) If so, why do you think that happened?

17) Do you reckon that her/his capacity to comprehend the languages was also affected?

18) Which is the language the child uttered her/his first words?

19) Can you recall how old s/he was when that happened?

20) What language(s) does the child speak while playing by himself/herself or with his/her toys?

21) How would you rate, in a scale from 1 to 5, the actual need that the child has to use Italian?

22) Could you give reasons for your evaluation?

23) How would you rate, in a scale from 1 to 5, the actual need that the child has to use English?

24) Could you give reasons for your evaluation?

25) Is the child regularly engaged in specific activities aimed at promoting the use of Italian? If so, what type of activities?

26) How would you define your family culturally and linguistically?

Appendix C

Rational behind the questionnaire

The first eight questions of the questionnaire focus on extent of exposure to each language. Question 1 is aimed at establishing when exposure to each of the child's input languages began. Time of first dual language exposure is crucial to distinguish between simultaneous and sequential bilingualism (see 2.2 for a discussion on cut-off of exposure). Questions 2 and 3 investigate amount of daily exposure to each language and whether the child is exposed to any additional language(s). It is a common assumption that amount of exposure is reduced in each of a bilingual child's two languages, because it is distributed across more than one language (e.g., Hoff, Core, Place, Rumiche, Senor & Parra, 2012) and that exposure is almost never equal between the two languages (e.g., Genesee, Nicoladis & Paradis, 1995; Meisel, 2007). It has often been argued that the language for which amount of input is more reduced becomes the non-dominant language of the bilingual child (e.g., Paradis & Genesee, 1996, 1997; Bonnesen, 2009; Rothman, 2009; Blom, 2010). The fourth question focuses on the number of hours the child sleeps and, consequently, the amount of time s/he has left for linguistic interaction. In a study of ten monolingual Dutch-speaking four-year-olds, which only considered the school nights in a month, it was found that, on average, some of the children slept 164 hours while some others slept up to 200 hours (De Houwer, 2000). As the author points out, this is a difference of 36 hours in 20 days, which is the equivalent of three entire waking days. The fifth question is aimed at evaluating the pervasiveness of the input languages in the child's linguistic environment. A larger number of interlocutors in a given language implies a larger number of occasions to hear and use that language, which increases the likelihood of the child's engagement with that language. This is what Yamamoto's (2001) *principle of maximal engagement with the minority language* assumes. The researcher carried out a survey among Japanese-English families living in Japan and came to the conclusion that "the more engagement the child has with the minority language, the greater her or his likelihood of using it" (Yamamoto 2001, p. 128).

The sixth question is aimed at establishing discourse strategies within the child's linguistic environment (Lanza, 1997). Monolingual discourse strategies are presumed to play a very important role in fostering active bilingual ability, not because they minimise linguistic confusion, but because they emphasise parental expectations that an address in a given language must be followed by an answer in that same language. De Houwer (2001,

2007) conducted an intergenerational language transmission survey in Flanders with the aim of determining what makes children, raised in bilingual environments, more likely to actively use both their languages. Through the means of a questionnaire, data were collected for 4.500 children, between the ages of 6;0 and 9;0, across 1,899 bilingual families in which, besides Dutch, the majority language, one other language was spoken by at least one parent. It emerged that single parents using both languages had a four out of five chance of fostering active ability in the minority language, which was exactly the same chance as families with two parents speaking both languages, despite arguably offering less input in the minority language. De Houwer argues that, although this was a large-scale survey in which input was not actually measured, similarities in parental discourse strategies seem to account for this finding better than amount of exposure. Another interesting finding was that the one-parent-one-language principle (Ronjat, 1913) was not among the most successful use patterns. In 27% of the families who adopted this principle, the children did not speak the minority language. As pointed out by the author, one likely explanation is that the parents offering monolingual input in the minority language (too) often employed *bilingual discourse strategies* (Lanza 1997), accepting the use of the majority language from their children. In De Houwer words:

Although so far there have not been enough studies documenting these discourse strategies [monolingual and bilingual discourse strategies] and their possible effect on children's language use, it is very likely that if parents use mainly bilingual discourse strategies, and allow the child's use of "the other" language Alpha, children have no need for speaking language A, and will become part of that large group of children raised bilingually who understand two languages but speak only one.

(De Houwer, 2011, p. 228)

Question 7 is aimed at establishing how the input languages are distributed between parents and how strong the presence of the minority language is in the domestic environment. Findings from the above mentioned survey (De Houwer, 2001, 2007) indicates that the odds of fostering active bilingual ability increase when both parents speak the minority language at home. The eighth question refers to the finding, coming from monolingual research that parental speaking-rates may vary considerably across families

and, therefore, considerable differences may occur in the sheer number of words children hear (Hart & Risley, 1995).

Questions 9 and 10 explore parental attitudes towards each language and parental discourse strategies respectively. Ideologies attached to the ambient languages are presumed to influence young children's acquisition of these languages (e.g., Kulick, 1992; Ochs & Schieffelin, 1995; Allen, 2007; Meisel, 2007; Grosjean, 2010; De Houwer, 2011 among others). When the minority language is a highly valued linguistic code, it has a better chance to survive and to be passed on to the following generations. Ochs and Schieffelin (1995, p. 92) note that "language acquiring children acquire values associated with each code through participation in social activities involving code selection and this cultural knowledge impacts their acquisition of codes". Similarly, Grosjean (2010) points out how negative attitudes about a language, within the family or the outside community, can be transmitted to children and, consequently, interfere with children's acquisition of that language. An example is offered by Kulick's study of language socialisation practices among the Gapun community of Papua New Guinea (Kulick, 1992), where two languages are spoken, the lingua franca *Tok Pisin* (*Talk Pidgin*) and the local dialect *Taiap*. Adults affirm that they want their children to speak *Taiap* and attribute the failure of the acquisition of this language to the children's refusal to learn it. However, the reality that emerges from the study is different. Adults, perhaps subconsciously, attach negative values, such as paganism and old-fashioned ways of living, to *Taiap*, while they associate *Tok Pisin* with modernity and Christianity. They also very often switch to *Tok Pisin* when addressing young children. The consequence of this implicit devaluation of the local dialect is that most children between 5;0 and 10;0 have only developed a passive knowledge of *Taiap*.

The idea that the status of the minority language within the family and the extended community affects the development of grammatical competence emerges also in contexts where children's exposure to two languages does not start at birth. When an individual's first language is a prestigious one, it is in no danger of replacement when a second language is introduced. The second language is acquired in addition to the first one. On the contrary, when an individual's first language is a non-prestigious one and a more prestigious code is introduced, the new language often determines subtractive effects in the

first language proficiency, to the point that the native language is replaced by the new language. For instance, studies carried out by Allen (2007) among the Inuits of Canada document the diminished use and eventual loss of proficiency in Inuktitut among school children, instructed in a majority language with higher prestige, English or French. Within the first year of schooling in the majority language, Inuktitut proficiency declined significantly in comparison with children who were schooled in Inuktitut. Within two years, the gap widened even more. In contrast, Allen did not find loss of proficiency in the minority language when two high prestige languages were involved. For example, French-speaking children schooled in English did not lose their French. French immersion educational programmes have been in operation for decades in Canada, teaching English-speaking children French, without any detriment to their English (Swain & Lapkin, 1982). In the tenth question parental discourse strategies (Lanza, 1997) are more explicitly explored. The options outlined in this question are directly linked to Lanza's systematic categorization of parental discourse strategies along a continuum that goes from the most monolingual to the most bilingual discourse strategy: minimal grasp, expressed guess, repetition, move on and language switch.

Questions 11 to 20 focus on the child's linguistic behaviour. Questions 11 to 14 further explore language dominance. Subjective procedures, such as parental reports of daily exposure to each language and researchers' impressions of dominance during visits, have been utilised in previous studies (e.g., Paradis & Genesee, 1996, 1997) to assess language dominance in bilingual children. While questions 11 and 12 refer to production, questions 13 and 14 relate to comprehension and test the common finding that, in 2L1 acquisition, linguistic imbalance only affects production and not the child's receptive capabilities (e.g., Meisel, 2007; Bennesen, 2009). Questions 15 to 17 look into potential past episodes of dominance shift between the child's two languages and its possible causes. There is widespread agreement that dominance may shift several times over a bilingual's lifespan (e.g., Leopold, 1970; Grosjean, 1982; 2010; Lanza, 1992; Olsson & Sullivan, 2005) due to changes in the linguistic environment (e.g., Leopold, 1970; De Houwer, 2007). The eighteenth question aims at establishing whether there was a time lag between the child's first words in the two input languages. For reasons that are not fully understood yet, some BFLA children produce their first words in their two languages at around the

same time; for some children a short period of time elapses between their first words in their two languages; for some other children the time lag is much longer. It has been argued that these differences may be due to the lexical relation between the languages the children are acquiring, in the sense that if the languages have a lot of shared vocabulary, it will take longer for the children to start producing language-specific words. The available evidence suggests that it does not matter whether or not the languages are closely related (De Houwer, 2009). Question 19 is aimed at establishing when the first-word milestone was achieved by the child. CDI normative data reveal that there are monolingual children who produce their first words as young as 8 months (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick & Reilly, 1991 for English; Caselli, Pasqualetti & Stefanini, 2007 for Italian). However, there is a large consensus that monolingual children achieve the first word milestone in production by around age 1;0, range 0;9 to 1;3 (e.g., Clark, 2003; Caselli *et al.*, 2007). Bilingual children have also been shown to achieve this language milestone within the same time range (De Houwer, 1990; Leopold, 1970; Petitto & Kovelman, 2003). The twentieth question looks for another possible indication of language dominance as it is often presumed that bilingual children's preferred language is also their dominant language (Nicoladis & Genesee, 1998; Paradis, Crago, Genesee & Rice, 2003; Cantone, Kupisch, Müller & Schmitz, 2008).

Questions 21 and 23 look into the child's need to use the minority and the majority language respectively. Questions 22 and 24 investigate the parental reasons behind the rating of their children's need for the two input languages. As the rating obtained from parents is just a projection of how they perceive their children's need for Italian and English, it seemed fitting to investigate the reasons behind their evaluation. Needs and goals are presumed to affect language acquisition in a multilingual context (e.g., Pulvermüller & Schumann, 1994; Ochs & Schieffelin, 1995; Meisel, 2007; Grosjean, 2010). Findings from ethno-linguistic research (e.g., Ochs & Schieffelin, 1995) suggest that the socio-cultural realities in which children live play a role in the early emergence or non-emergence of particular grammatical constructions. Therefore, they influence the acquisition of grammatical competence. According to a language socialisation model of language acquisition (Ochs and Schieffelin, 1984), what determines the early use and understanding of a given grammatical form is not the frequency with which that form is

used in the child's environment, but the socio-cultural situation in which it is used and the cultural values associated with it. The underlying assumption is that feelings can be encoded in both meaning and forms of language and that affect-loaded forms can be employed to obtain favourable responses from others (Ochs, 1986). Ochs (1986; 1988) has shown that young Samoan children display sensitivity towards this cause-effect relationship from the outset of their verbal production. Affect-loaded grammatical constructions are acquired earlier than the equivalent neutral constructions. For instance, the affect loaded first person pronoun *poor me* is acquired before the corresponding neutral first person pronoun. The affective form is used by adults in complaints and to elicit sympathy or commiseration. Children use it to ask for some goods or service (Ochs, 1986). As early as the one-word stage, Samoan children are able to use several curses and vocative insults. Most of the grammatical constructions for expressing affect are acquired before age four. Samoan parents invariantly claim that their children's first word is *tae*, which is a curse and is used as a negation, to disagree, refuse, reject and to prevent or stop an action from being carried out. Most children use this form by 1;7, before the more neutral negative *leai* (*no*), which does not appear until 1;10 – 2;0 (Ochs and Schieffelin, 1995). According to Ochs, the early emergence of affect-loaded forms is determined by children's early awareness that they can buy something that the neutral forms cannot. On the basis of these findings, the researcher argues that "affect strategies and goals should be considered along with others that have been proposed as underlying children's emerging grammar" (Ochs, 1986, p. 269). She concludes that, in a multilingual context, needs and goals should be considered to explain the acquisition or the failure of acquisition of a given language.

The last two questions explore parental role perception, in that they explore how the use of the minority language is promoted within the family and how strongly the awareness of constituting a bilingual household is present to parents' minds. Question 25 focuses on the child's level of engagement with the minority language. Question 26 further investigates parental attitudes towards bilingualism (De Houwer, 1999).

Appendix D

Excerpts from play sessions

- *MOT: facciamo il collage.
- *CHI: il collage.
- *MOT: facciamo il collage, ok.
- *MOT: prima finiamo di fare il puzzle.
- *CHI: voglio il collage.
- *MOT: devi fare la pipì, Amy?
- *CHI: no.
- *MOT: cosa facciamo, Amy.
- *MOT: cosa vuoi fare?
- *CHI: voglio fare un bambino e una bambina.
- *MOT: un bambino e una bambina.
- *MOT: li mettiamo sullo stesso foglio o su due fogli diversi?
- *MOT: adesso vado a prendere tutto il materiale.
- *MOT: mi aspetti qua?
- *MOT: ok.
- *MOT: mettiamo fuori tutto.
- *MOT: poi decidiamo cosa fare.
- *MOT: quale carta vuoi usare come sfondo, Amy?
- *CHI: questa.
- *MOT: quello che colore è?
- *CHI: voglio il viola capelli della bambina.
- *MOT: ok i capelli viola, Amy.
- *MOT: un attimo.
- *MOT: la carta, di che colore la vuoi la carta?
- *CHI: questa.
- *MOT: questo che colore è?
- *CHI: rosa.
- *MOT: rosa.
- *CHI: voglio il rosa.
- *MOT: ok facciamo lo sfondo rosa.
- *MOT: facciamo i capelli di che colore allora?
- *CHI: viola.
- *MOT: ok.
- *MOT: prendiamo un pochino solo.
- *MOT: mettiamo dentro questo.
- *MOT: quelli li mettiamo via, ok?
- *MOT: prendiamo questi.
- *MOT: sono abbastanza?
- %com: child nods.
- *MOT: vuoi fare un bimbo o una bimba?
- *CHI: una bimba.
- *MOT: vuoi una bimba coi pantaloni o con la gonna?
- *CHI: con la gonna.
- *CHI: voglio una bambina verde.

*MOT: facciamo la gonna verde?
 *CHI: no voglio fare la maglietta verde.
 *MOT: devo andare a prendere le forbici.
 *MOT: la maglietta la facciamo verde e la gonna di che colore?
 *CHI: blu.
 *MOT: blu?
 *MOT: verde e blu?
 *MOT: sei sicura?
 *MOT: non vuoi giallo?
 *MOT: il giallo sta meglio col verde.
 *MOT: ok adesso vado a prendere la biro e le forbici.
 *MOT: allora facciamo la maglietta.
 *MOT: la maglietta la vuoi verde o gialla?
 *CHI: gialla.
 *CHI: e la gonna verde.
 *MOT: e le braccia di che colore le facciamo?
 *CHI: le voglio fare verde le braccia.
 *MOT: le braccia verdi come la gonna?
 *MOT: queste le uso io ok?
 *MOT: sono un po' pericolose.
 *CHI: perché?
 *MOT: perché sono affilate.
 *CHI: perché sono affilate?
 *MOT: perché servono per tagliare, Amy.
 *MOT: se non fossero affilate, non taglierebbero.
 *MOT: la incolli tu?
 *MOT: ce l'hai la colla?
 *CHI: no.
 *MOT: forse è rimasta nella borsa.
 *MOT: è qua.
 *MOT: la mettiamo in mezzo al foglio?
 *MOT: dove la vuoi mettere?
 *MOT: lo giriamo così il foglio?
 *MOT: in verticale?
 *MOT: aspetta.
 *MOT: aspetta.
 *MOT: no Amy, dobbiamo mettere la colla sulla maglietta non sul foglio.
 *MOT: aspetta!
 *CHI: perché?
 *MOT: perché è la maglietta che dobbiamo incollare al foglio.
 *CHI: no.
 *CHI: sulla maglietta non si cacca [: attacca] bene la colla.
 *MOT: proviamo.
 *MOT: l'attacciamo da tutte e due le parti.
 *MOT: sia qua.
 *MOT: guarda.

*FAT: Amy, shall we +...
*FAT: do you want to make a drawing like yesterday?
*CHI: no.
*FAT: do you wanna [: want to] do a jigsaw?
*CHI: yes.
*FAT: yes?
*FAT: which jigsaw do you wanna [: want to] do?
*CHI: I want the old one.
*FAT: the old one.
*CHI: I will show you.
*CHI: I will show you.
*CHI: this one.
*FAT: the fire brigade?
*CHI: the fire brigade.
*CHI: I wanna [: want to] do this.
*FAT: you wanna [: want to] do that.
*CHI: okay, let's get this.
*FAT: we have to talk, Amy.
*CHI: why?
*FAT: very good, Amy.
*FAT: who is this person, Amy?
*FAT: what's this?
*CHI: a camera.
*FAT: a camera?
*CHI: I don't know what this is called.
*FAT: you don't know what this is called?
*FAT: this is a tools box, Amy.
*CHI: the small one.
*FAT: the small one?
*CHI: I want the football team.
*FAT: you want the football team?
*CHI: I'll show you.
*FAT: you'll show me?
*FAT: what's this?
*CHI: I wanna do that one.
*FAT: you wanna [: want to] do that one?
*FAT: you wanna [: want to] do that one?
*CHI: let's turn on pieces.
*FAT: let's turn on the pieces, Amy.
*CHI: okay, let's do.
*CHI: let's do.
*FAT: Amy, which one is this?
*CHI: you put this away because it's difficult.
*FAT: it's not difficult, Amy.

*FAT: you did it before.
*FAT: didn't you do it before?
*FAT: Amy, I'll help you, okay?
*CHI: okay.
*FAT: okay.
*FAT: I will help you.
*FAT: now.
*FAT: Amy, we do the edge first.
*FAT: we do the sky, look.
*FAT: this is the sky.
*CHI: this difficult.
*FAT: difficult.
*FAT: yay!
*FAT: we do five more skies with daddy?
*FAT: which is the sky?
*FAT: which colour is the sky?
*CHI: I did it!
*FAT: yay!
*FAT: who is this guy, Amy?
*FAT: who is this guy?
*CHI: boy.
*FAT: a boy?
*FAT: what does the boy do?
*FAT: the boy talks.
*FAT: Amy, will we finish more guys?
*CHI: yeah.
*FAT: yeah.
*FAT: very good, Amy.
*FAT: what's this?
*CHI: no.
*FAT: no?
*FAT: Amy, look at Ava!
*FAT: Ava's standing, look!
*FAT: very good, Amy.
*FAT: is that right?
*CHI: no.
*FAT: is it not?
*FAT: do you wanna use a different piece?
*FAT: do you wanna use some more pieces, Amy?
*FAT: this, these go here, Amy, maybe.
*FAT: oh, look.
*FAT: who is this person, Amy?
*FAT: who is this person?
*CHI: I don't know.
*FAT: you don't know.
*FAT: does she have a name?

*MOT: che torta facciamo?
*CHI: Frozen.
*MOT: una torta di Frozen.
*MOT: la fai tu?
*MOT: chi la fa?
*CHI: mamma.
*MOT: mamma.
*MOT: non so se mamma è brava a fare la torta di Frozen sai?
*MOT: magari abbiamo bisogno di aiuto.
*MOT: cosa dici?
*MOT: no?
*MOT: faccio io?
*MOT: continuiamo?
*MOT: a te è venuto il verde?
*MOT: o devi girare?
*MOT: il verde.
*MOT: dov'è il tuo verde?
*MOT: vuoi andare qua?
*MOT: saltiamo?
*MOT: facciamo più veloce?
*MOT: però dopo saltiamo anche noi.
*MOT: adesso salta anche Anna.
*MOT: Anna salta il giro.
*MOT: salta del tutto.
*INV: questo gioco è molto ingiusto.
*MOT: in mezzo.
*MOT: devo rifare.
*MOT: Ava, cosa c'è?
*MOT: perché fai così oggi?
*MOT: Ava, cosa vuoi fare?
*MOT: andiamo a fare il letto di Amy che non l'abbiamo ancora rifatto?
*MOT: c'è la camera tutta disordinata.
*MOT: mi aiuti?
*MOT: mi aiuti a rifare il letto di Amy?
*MOT: no?
*MOT: come no?
*MOT: facciamo vedere a Anna i libri che abbiamo preso in biblioteca?
*MOT: viene anche Anna.
*MOT: ok?
*MOT: non fare la matta, Ava!
*MOT: dove sono i libri della biblioteca.
*MOT: c'è questo.
*MOT: Alfie.
*MOT: e dov'è quello del principe, Ava?

*MOT: dove l'hai messo?
 *CHI: non lo so.
 *MOT: l'hai nascosto?
 *MOT: qua non c'è.
 *MOT: è nella tua camera?
 *MOT: io l'ho visto.
 *MOT: è lassù?
 *CHI: l'ha messo papà.
 *MOT: ce l'ha messo papà sì.
 *MOT: e poi ce ne manca uno perché ne avevamo quattro.
 *MOT: qual era l'altro?
 *MOT: quello della scuola.
 *MOT: il primo giorno di scuola.
 *MOT: dov'è, Ava?
 *MOT: è qua.
 *MOT: lo mettiamo di là così non lo perdiamo.
 *MOT: stavano per farci la multa in biblioteca.
 *MOT: te li ha letti papà ieri sera prima di andare a letto?
 *MOT: quale ha letto?
 *MOT: ha letto questo?
 *MOT: ti è piaciuto?
 *MOT: di cosa parla?
 *CHI: non lo so.
 *MOT: come non lo sai?
 *CHI: leggi questo.
 *MOT: no, in inglese adesso non leggiamo.
 *MOT: te lo legge dopo papà questo ok?
 *CHI: no tu.
 *MOT: te ne posso leggere un altro.
 *MOT: però in italiano leggiamo.
 *MOT: andiamo a sceglierne uno in italiano.
 *MOT: ce ne sono anche qua.
 *MOT: guarda.
 *MOT: c'è Cane Blu.
 *MOT: Lupo e Lupetto.
 *CHI: sì!
 *MOT: Lupo e Lupetto?
 *MOT: ok.
 *CHI: io vojo [: voglio]+...
 *MOT: tu vuoi cosa?
 *CHI: vojo [: voglio] in brasso [: braccio].
 *MOT: come un baby.
 *MOT: sei un baby?
 *MOT: questo è Lupo e questo è Lupetto.
 *MOT: esatto?
 *MOT: chi è Lupetto.

*FAT: Ava, do you want daddy to do the pointer for you?
*CHI: no I want mamma!
*FAT: you want mummy?
*FAT: and who put you to bed last night?
*CHI: daddy.
*FAT: and did daddy read you a story?
*FAT: what story did daddy read you?
*CHI: I don't know.
*FAT: you don't know!
*FAT: did daddy read you Don't Wanna [: want to] Go?
*CHI: no.
*FAT: no?
*FAT: tell daddy the story of Don't Wanna [: want to] Go.
*FAT: Ava, stop pulling those out okay?
*FAT: do you wanna [: want to] do the jigsaw now?
*CHI: yes.
*FAT: yes?
*FAT: do you wanna [: want to] do it yourself?
*FAT: okay, do it yourself.
*FAT: Ava, are you crying?
*FAT: are you a crying baby?
*FAT: come on we go and do you puzzles, okay?
*FAT: you don't wanna [: want to] do your puzzles?
*CHI: no.
*FAT: come on, go and do your puzzles.
*FAT: tickle.
*FAT: tickle.
*FAT: do you like when I tickle you?
*FAT: tickle.
*FAT: Ava, don't open another one, okay?
*CHI: I want to close it.
*FAT: you want to close it?
*FAT: Ava, mummy is busy doing Amy's hair okay?
*FAT: Ava, did you do this?
*SIS: no that was me.
*FAT: do you wanna [: want to] do this Ava?
*FAT: do you wanna [: want to] me get you a pencil?
*CHI: I want Frozen pencils.
*FAT: Frozen pencils.
*FAT: I don't think it's here.
*FAT: look in this other box, Ava.
*FAT: what are you gonna [: going to] draw?
*CHI: a triangle.
*FAT: a triangle?

*SIS: that's not a triangle.
 *CHI: yes!
 *FAT: Amy, just leave her alone.
 *FAT: we'll do it on a different paper.
 *FAT: this is a circle.
 *FAT: what's this?
 *CHI: a triangle.
 *FAT: a circle.
 *FAT: this is the triangle.
 *FAT: yeah?
 *FAT: what's this?
 *CHI: a triangle.
 *FAT: what's this?
 *CHI: a circle.
 *FAT: very good.
 *FAT: what type of shape is there?
 *FAT: what type of shape?
 *CHI: quadrato.
 *FAT: it's a square.
 *MOT: she said quadrato.
 *FAT: that's okay.
 *SIS: that's just a circle.
 *FAT: do you wanna [: want to] finish it off?
 *FAT: we'll do it again?
 *FAT: that's a letter.
 *FAT: that's zed.
 *FAT: do you wanna [: want to] do zed?
 *SIS: ho coperto lo scoiattolo.
 *CHI: what is this?
 *FAT: that's a vi
 *FAT: vi for violin.
 *FAT: and who is this?
 *FAT: is this Masha?
 *CHI: no.
 *FAT: what?
 *CHI: Masha.
 *FAT: Masha.
 *FAT: what's this?
 *CHI: Orso.
 *FAT: what?
 *CHI: Orso.
 *FAT: Orsa?
 *CHI: Orso.
 *FAT: Orso.
 *SIS: can I have Masha?
 *FAT: where do you see Orso?

Appendix E

The Italian elicitation task

Text

Queste fragole sono rosse, ma questa fragola... (è blu)
These strawberries are red, but this strawberry... (is blue)
Questi fiori sono gialli, ma questo fiore... (è arancione)
These flowers are yellow, but this flower... (is orange)
Queste mele sono rosse, ma questa mela... (è verde)
These apples are red, but this apple... (is green)
Questi zaini sono blu, ma questo zaino... (è rosso)
These backpacks are blue, but this backpack... (is red)
Questo ciuccio è rosso, ma questi ciucci... (sono azzurri)
This dummy is red, but these dummies... (are blue)
Questo fiore è blu, ma questi fiori... (sono fucsia)
This flower is blue, but these flowers (are fuchsia)
Questo coniglietto è grigio, ma questi coniglietti... (sono marroni)
This bunny rabbit is grey, but these bunny rabbits... (are brown)
Questo pulcino è blu, ma questi pulcini... (sono gialli)
This chick is blue, but these chicks... (are yellow)
Qui ci sono i fiori, qui che cosa vedi? (le carote)
Here there are flowers. And here what do you see? (carrots)
Qui ci sono i mirtilli, qui che cosa vedi? (le arance)
Here there are blueberry. And here what do you see? (oranges)
Qui ci sono i pulcini, qui che cosa vedi? (le galline)
Here there are chicks. And here what do you see? (hens)
Qui ci sono i lupi, qui che cosa vedi? (le oche)
Here there are wolves. And here what do you see? (ducks)
Qui ci sono le giraffe, qui che cosa vedi? (gli orsi)
Here there are giraffes. And here what do you see? (bears)
Qui ci sono le uova, qui che cosa vedi? (i gelati)
Here there are eggs. And here what do you see? (ice creams)
Qui ci sono le rane, qui che cosa vedi? (gli ippopotami)

Here there are frogs. And here what do you see? (hippos)
 Qui ci sono i serpenti, qui che cosa vedi? (i topi)
 Here there are snakes. And here what do you see? (mice)
 Qui ci sono i canguri, qui che cosa vedi? (le api)
 Here there are kangaroos. And here what do you see? (bees)
 Qui ci sono i gatti, qui che cosa vedi? (gli elefanti)
 Here there are cats. And here what do you see? (elephants)
 Qui ci sono gli uccellini, qui che cosa vedi (i maiali)
 Here there are birdies. And here what do you see? (pigs)
 Qui ci sono le zebre, qui che cosa vedi? (le tigri)
 Here there are zebras. And here what do you see? (tigers)
 Ecco George! A George piace giocare a pallacanestro. Qui che cosa fa? (gioca)
 Look, George! George likes to play basketball. What does he do?
 Ecco Peppa e Suzy pecora! A Peppa e Suzy piace giocare a golf. Qui che cosa fanno?
 (giocano)
 Look, Peppa and Suzy Sheep. Peppa and Suzy Sheep like to play golf. What do they do?
 (they play)
 Ecco una bambina! A lei piace disegnare. Qui che cosa fa? (disegna)
 Look, a child! She likes to draw. What does she do? (she draws)
 Ecco Peppa e George! A Peppa e George piace disegnare. Qui che cosa fanno? (disegnano)
 Look, Peppa and George. Peppa and George like to draw. What do they do? (they draw)
 Ecco Peppa! A Peppa piace mangiare la pasta. Qui che cosa fa? (mangia)
 Look, Peppa! Peppa likes to eat pasta. What does she do? (She eats)
 Ecco Peppa e George! A Peppa e George piace mangiare il gelato. Qui che cosa fanno?
 (mangiano)
 Look, Peppa and George! Peppa and George like to eat ice cream. What do they do? (they eat)
 Ecco George! A lui piace piangere. Qui, che cosa fa? (piange)
 Look, George! He likes to cry. What does he do? (cries)
 Ecco dei bambini e George! Qui, che cosa fanno? (piangono)
 Look, some children and George! What do they do? (they cry)

Ecco un bimbo. A lui piace scrivere. Qui, che cosa fa? (scrive)

Look, a child! He likes to write. What does he do? (he writes)

Ecco dei bambini! A loro piace scrivere. Qui, che cosa fanno? (scrivono)

Look, some children! They like to write. What do they do? (**they** write)

Ecco Peppa? A Peppa piace leggere. Qui, che cosa fa? (legge)

Look, Peppa! Peppa likes to read. What does she do? (she reads)

Ecco Peppa e i suoi amici! A loro piace leggere. Qui, che cosa fanno? (leggono)

Look, Peppa and her friends! They like to read. What do they do? (**they** read)

Ecco Peppa! A Peppa piace dormire. Qui, che cosa fa? (dorme)

Look, Peppa! Peppa likes to sleep. What does she do? (she sleeps)

Ecco Peppa e George. A Peppa e George piace dormire. Qui, che cosa fanno? (dormono)

Look, Peppa and George. Peppa and George like to sleep. What do they do? (**they** sleep)

Ecco Papà Pig! A Papà Pig piace partire. Qui, che cosa fa? (parte)

Look, Daddy Pig! Daddy Pig likes to go on holiday. What does he do? (he goes on holiday)

Ecco Peppa! A Peppa piace pulire la macchina. Qui, che cosa fa? (pulisce)

Look, Peppa! Peppa likes to clean the car. What does she do? (she cleans)

Ecco Mamma Pig, Papà Pig, Peppa e George! A loro piace pulire la macchina. Qui che cosa fanno? (puliscono)

Look, Mummy Pig, Daddy Pig, Peppa and George! They like to clean the car. What do they do? (**they** clean)

FIGURE E.1

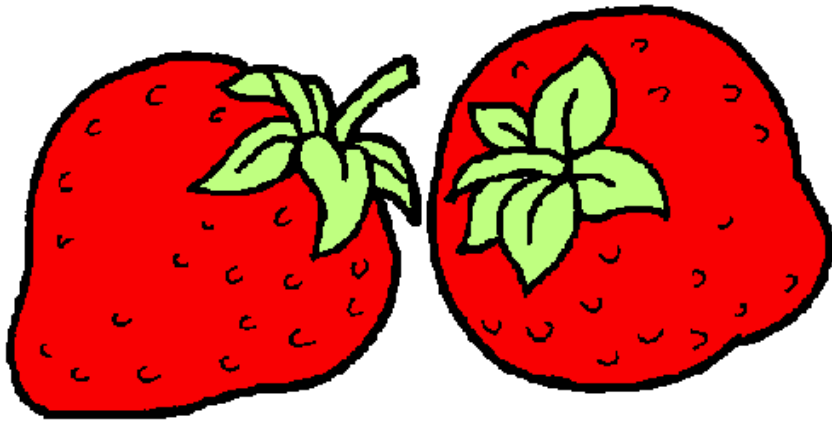


FIGURE E.2



FIGURE E.3

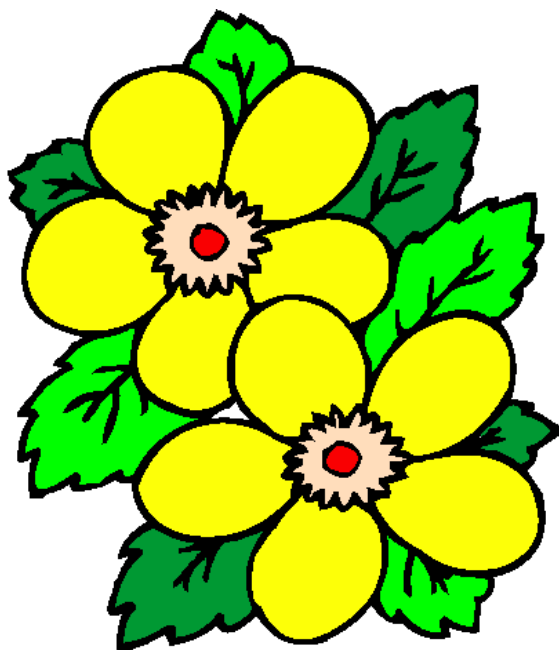


FIGURE E.4

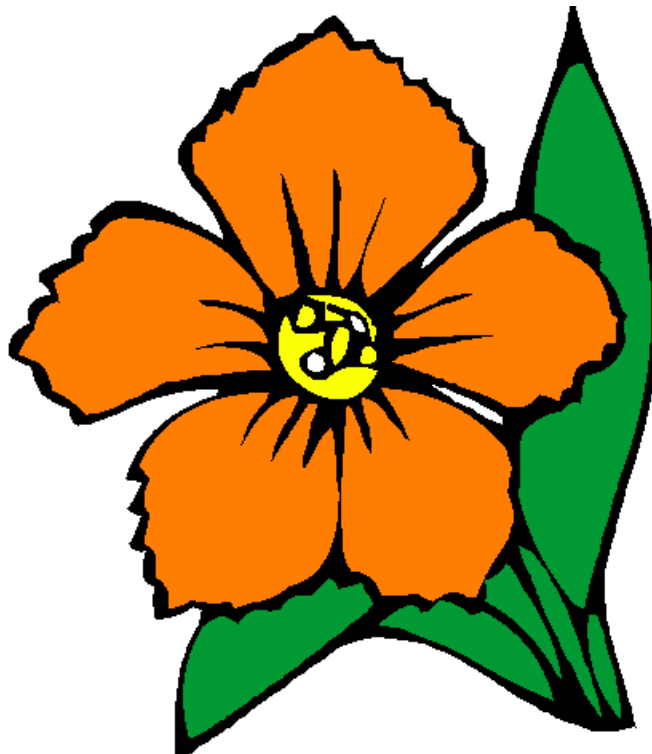


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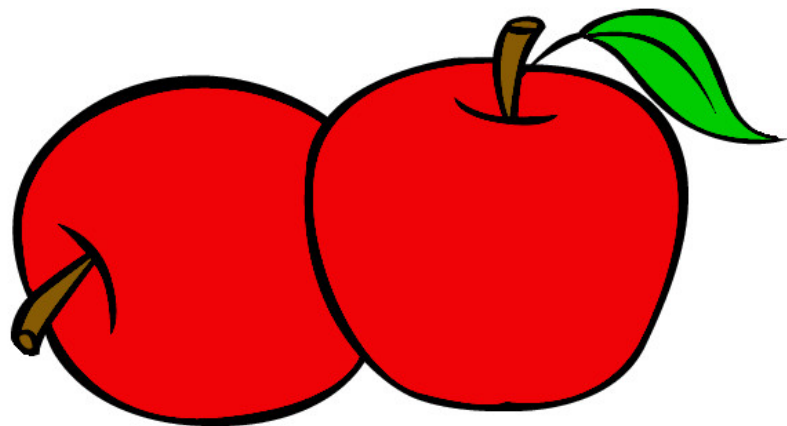


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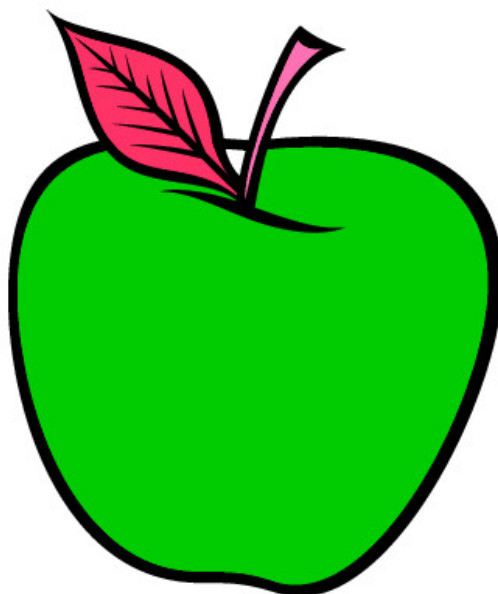


FIGURE E.7



FIGURE E.8

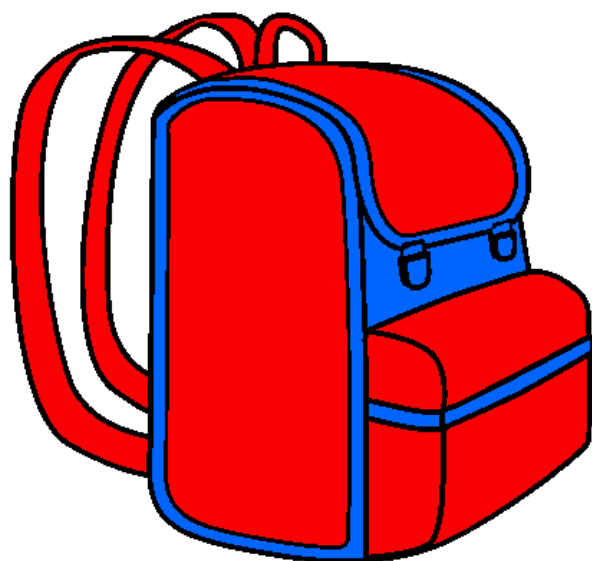


FIGURE E.9

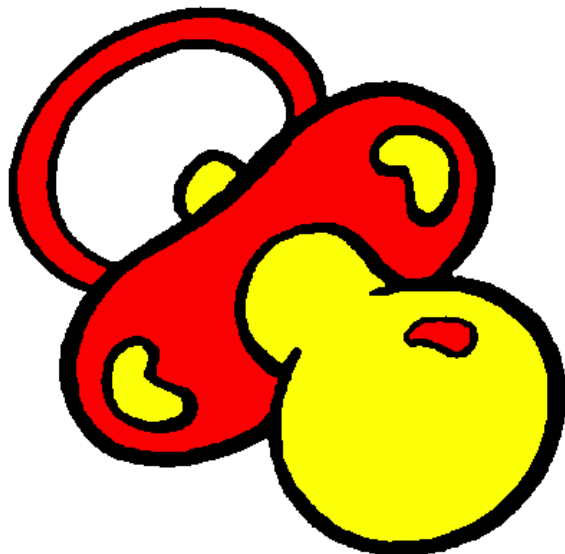


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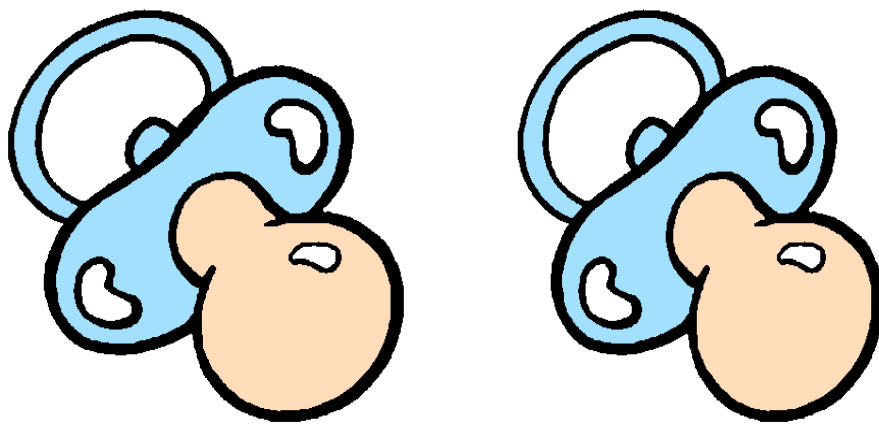


FIGURE E.11

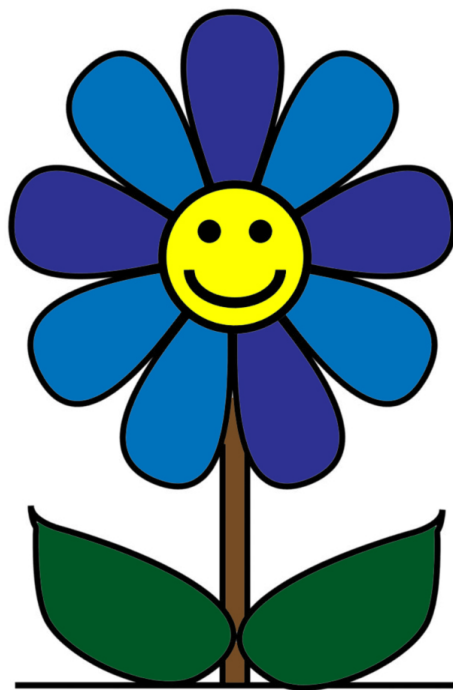


FIGURE E.12

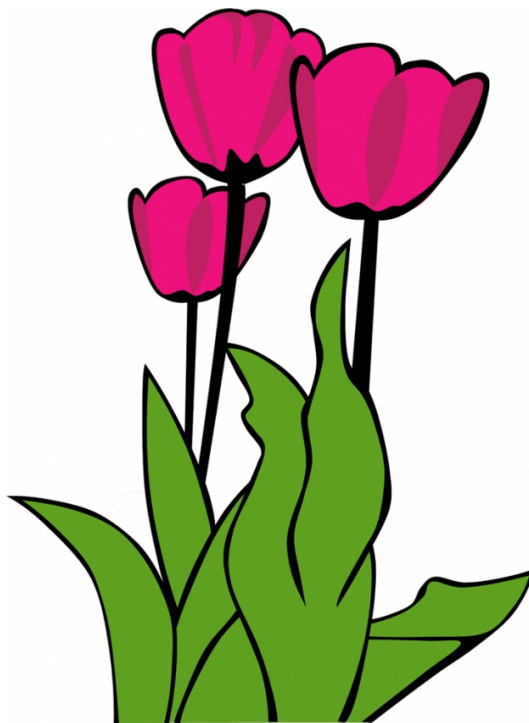


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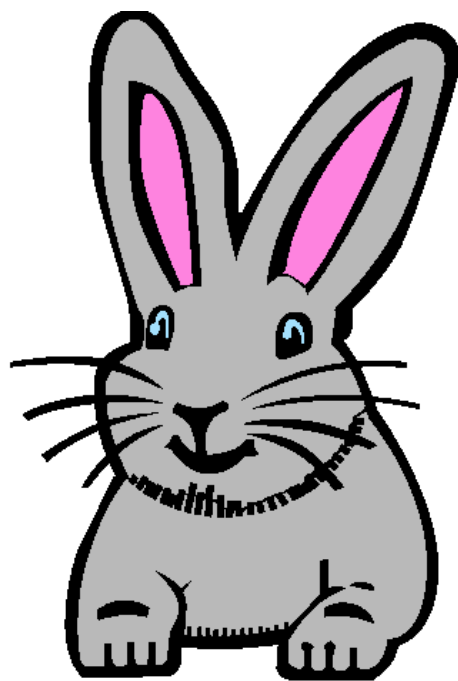


FIGURE E.14

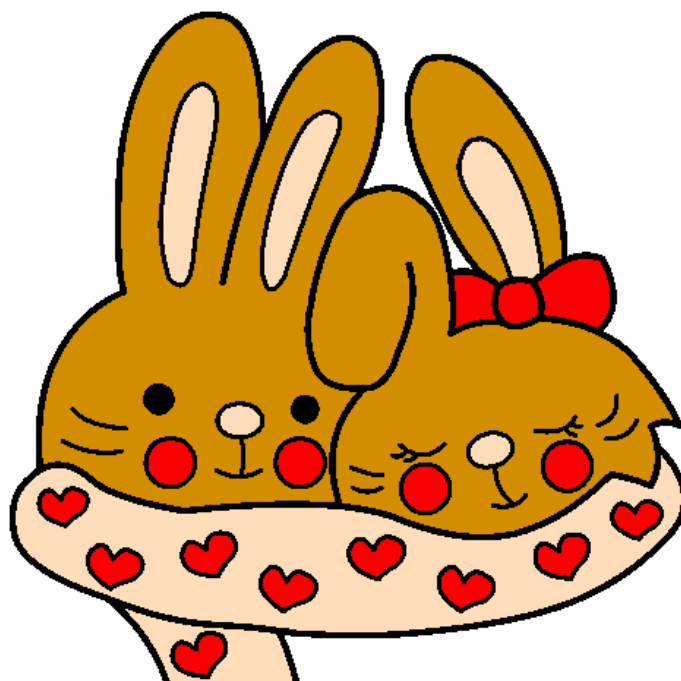


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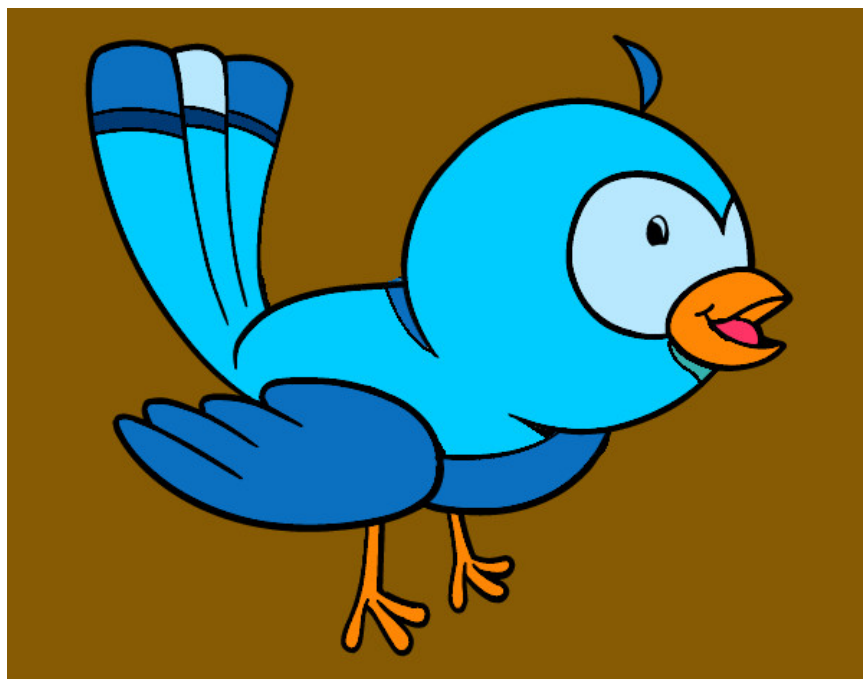


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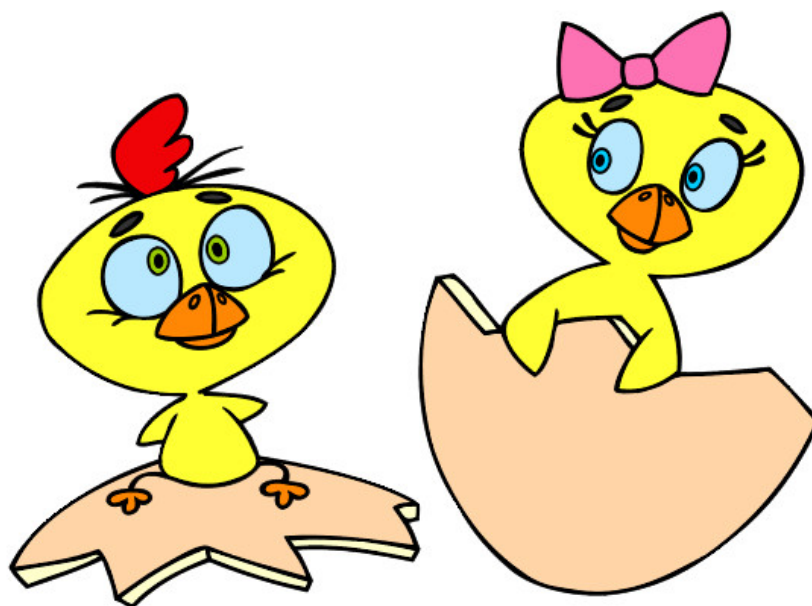


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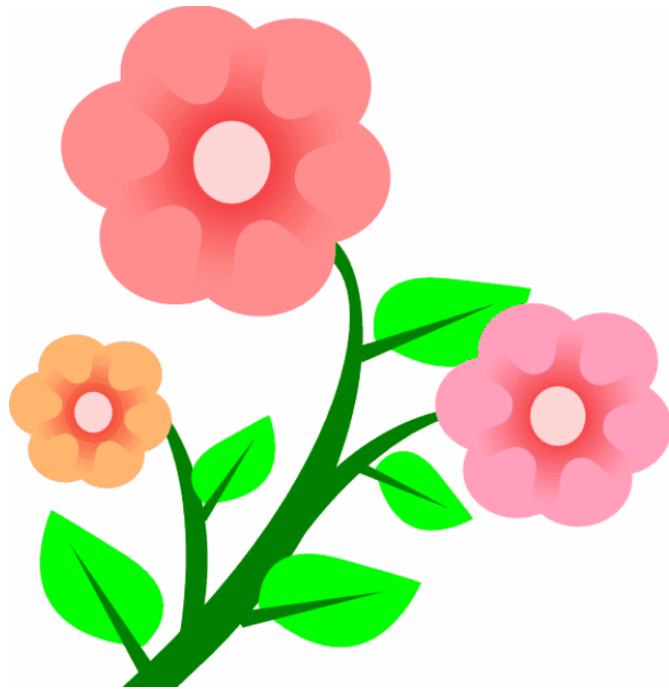


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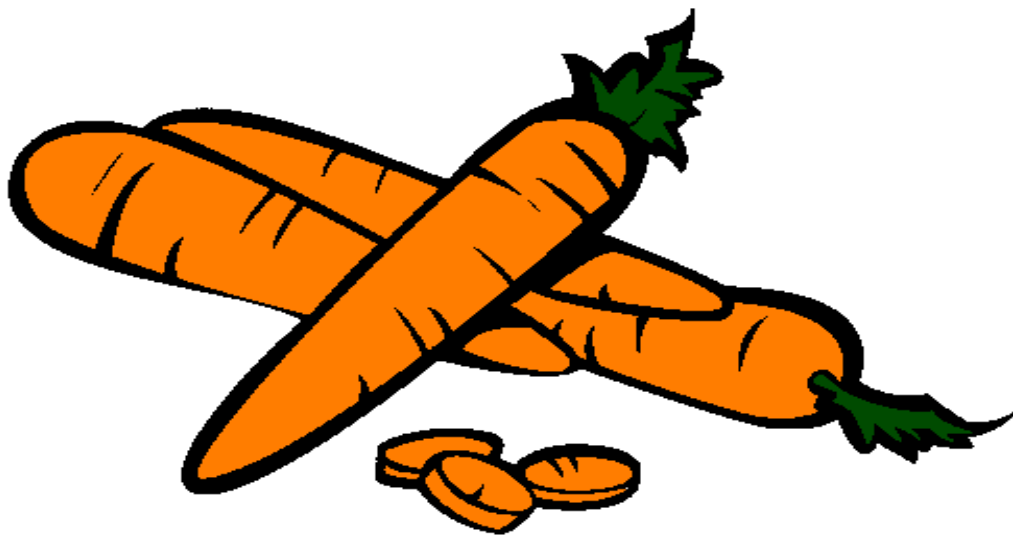


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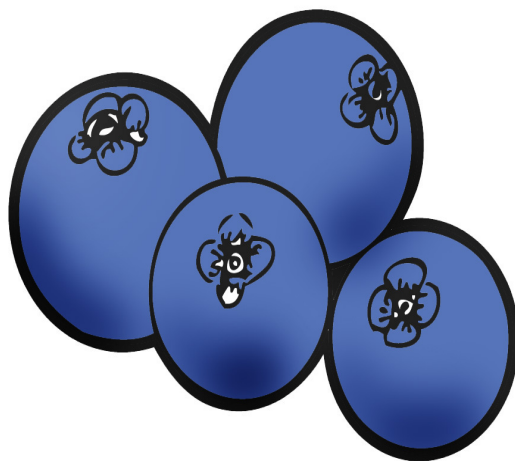


FIGURE E.20

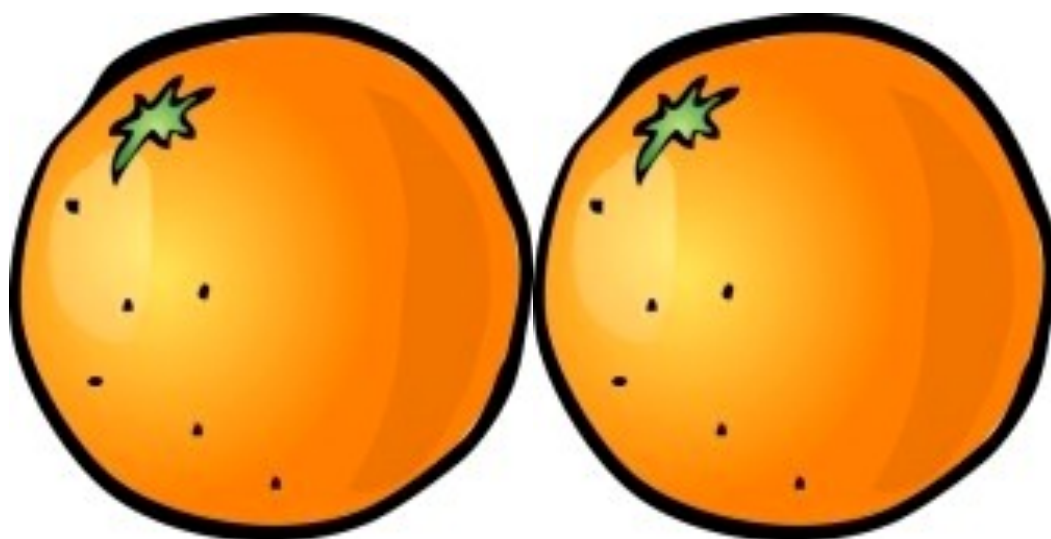


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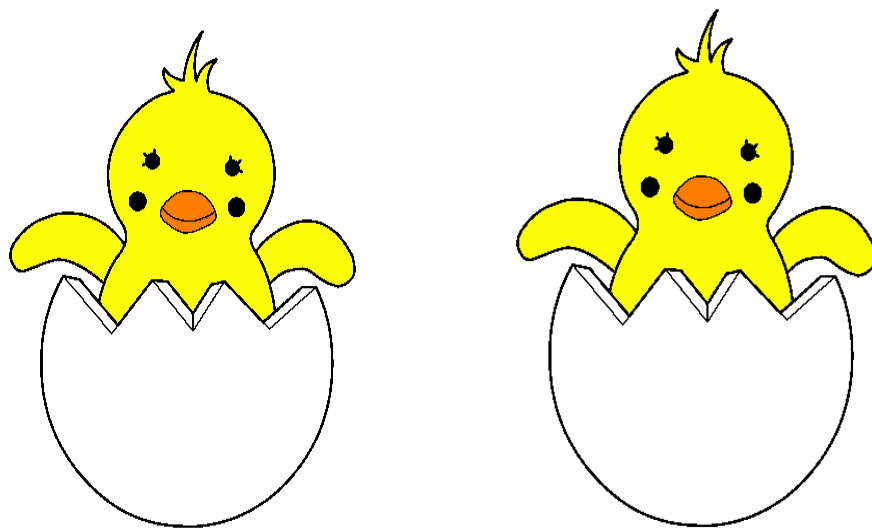


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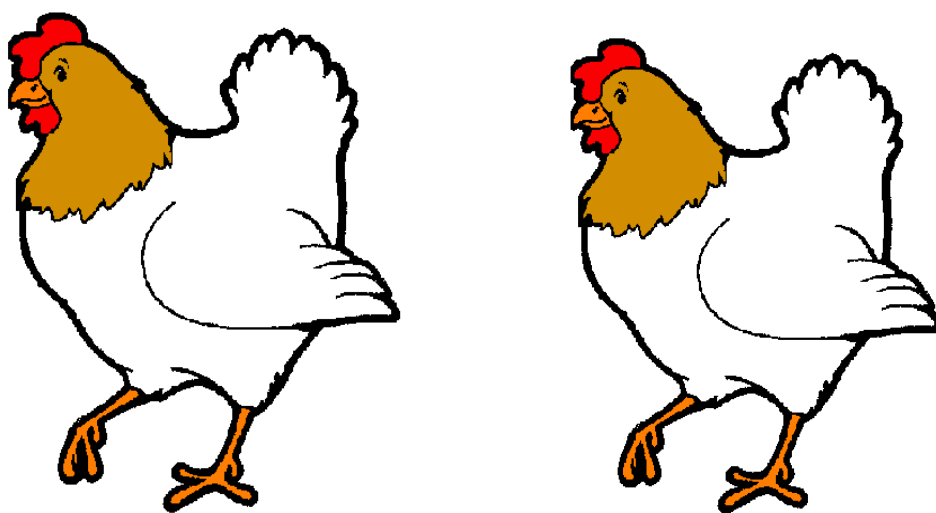


FIGURE E.23

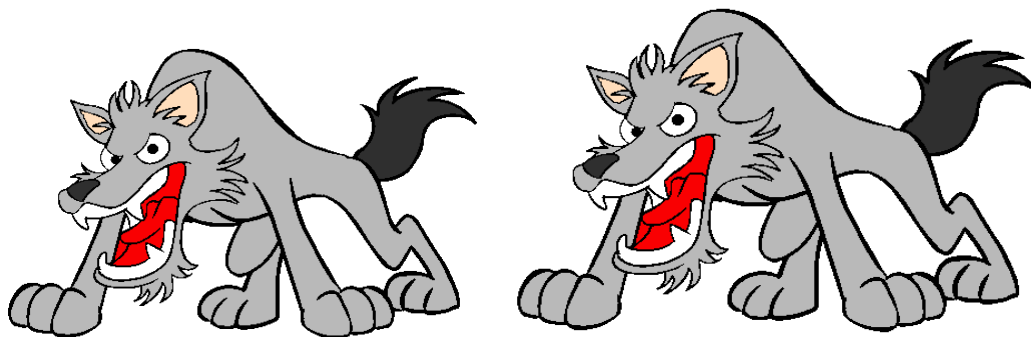


FIGURE E.24

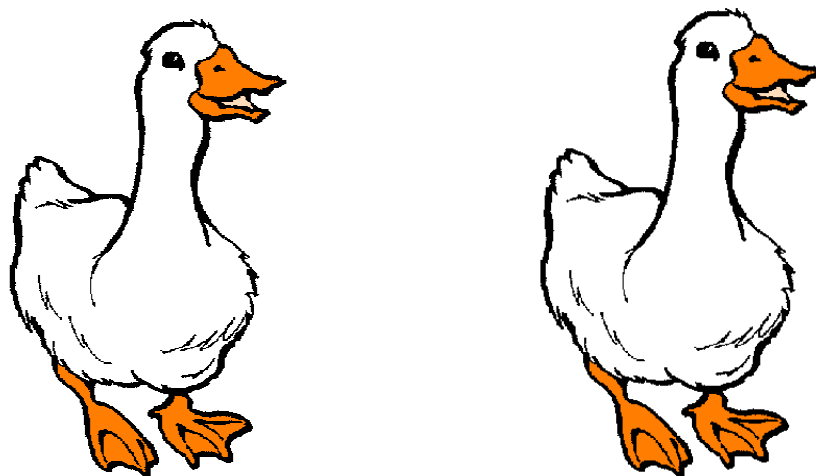


FIGURE E.25

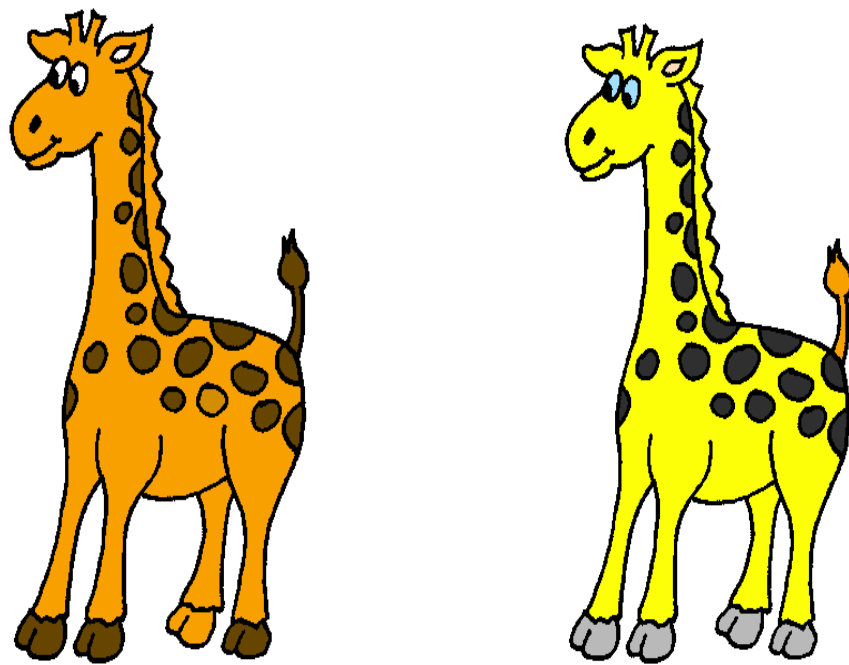


FIGURE E.26

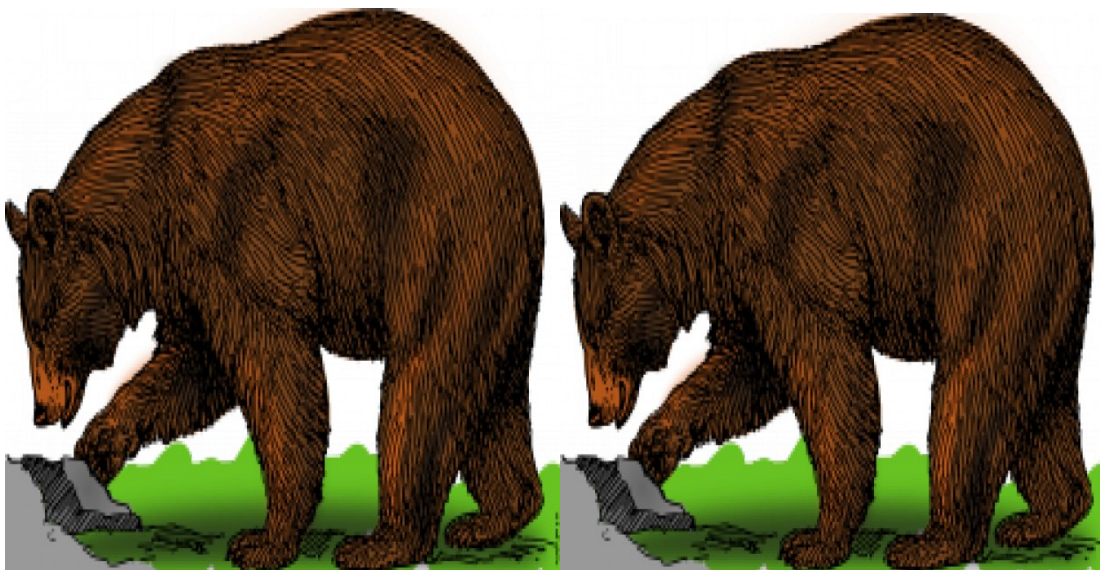


FIGURE E.27



FIGURE E.28



FIGURE E.29

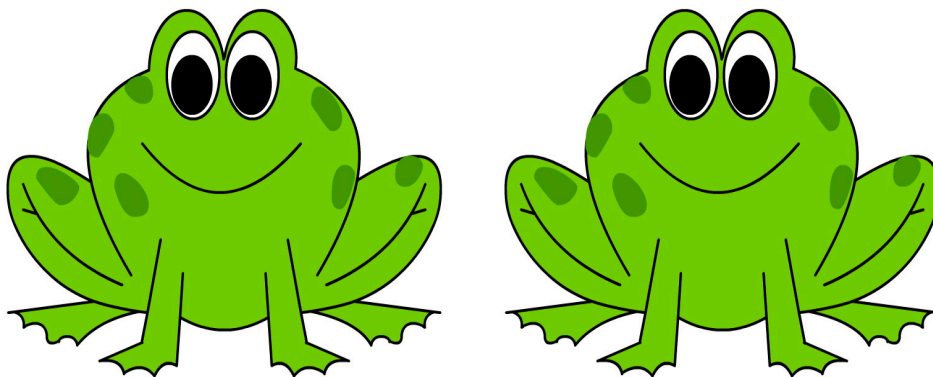


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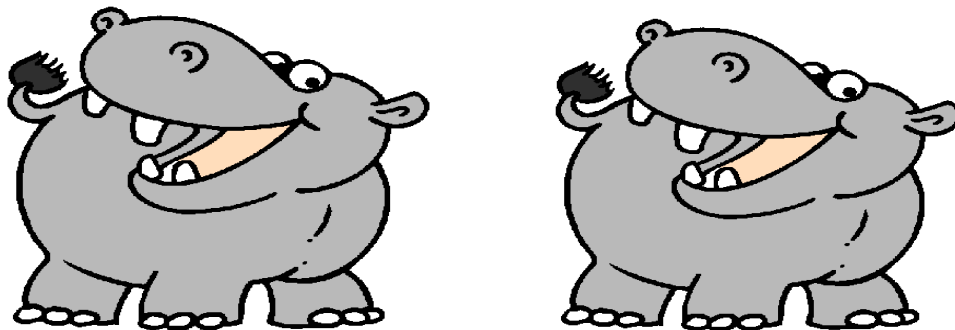


FIGURE E.31

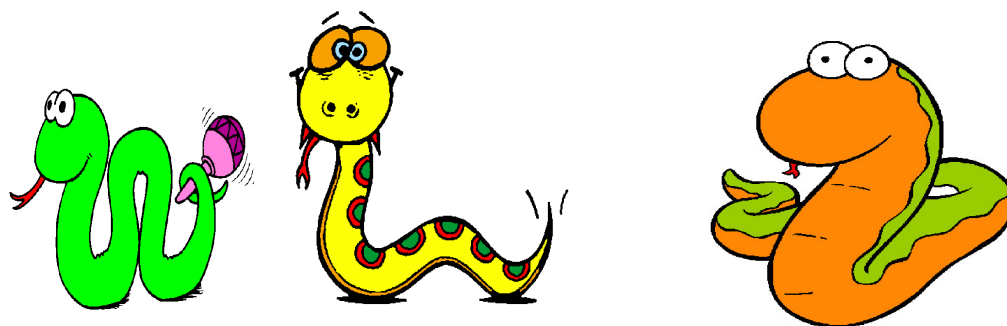


FIGURE E.32



FIGURE E.33



FIGURE E.34

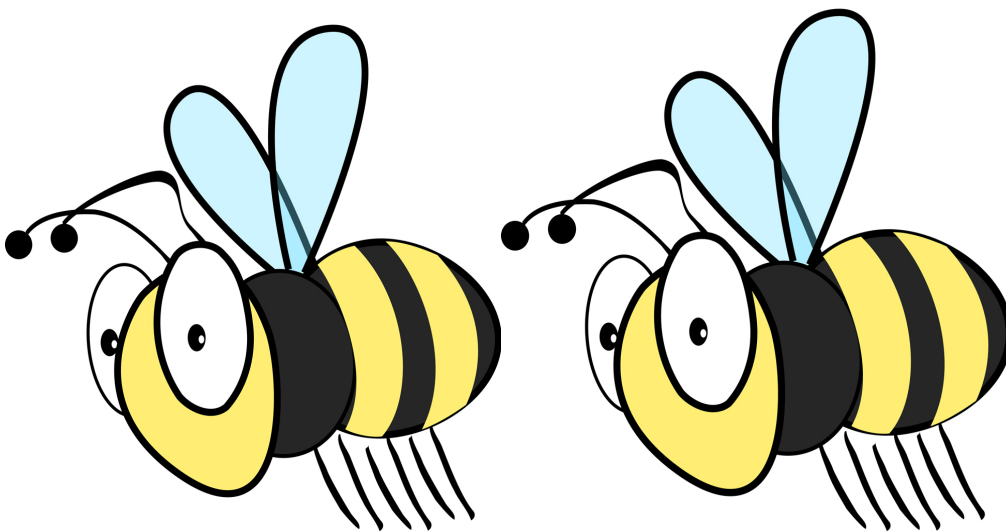


FIGURE E.35



FIGURE E.36

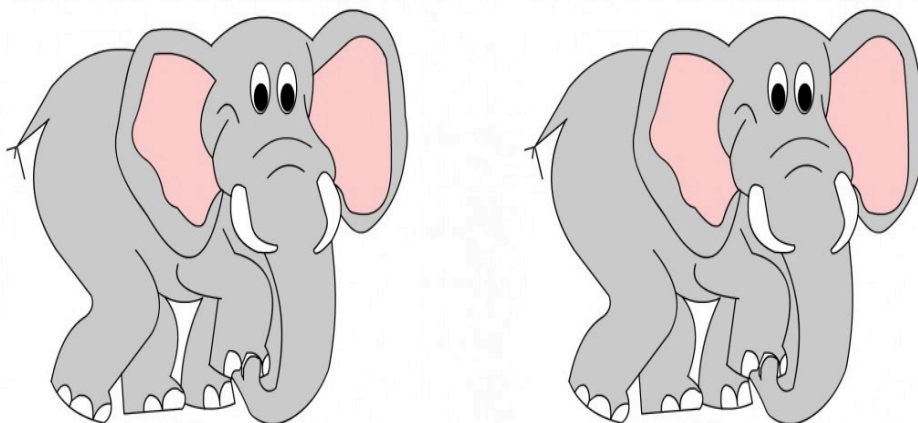


FIGURE E.37



FIGURE E.38

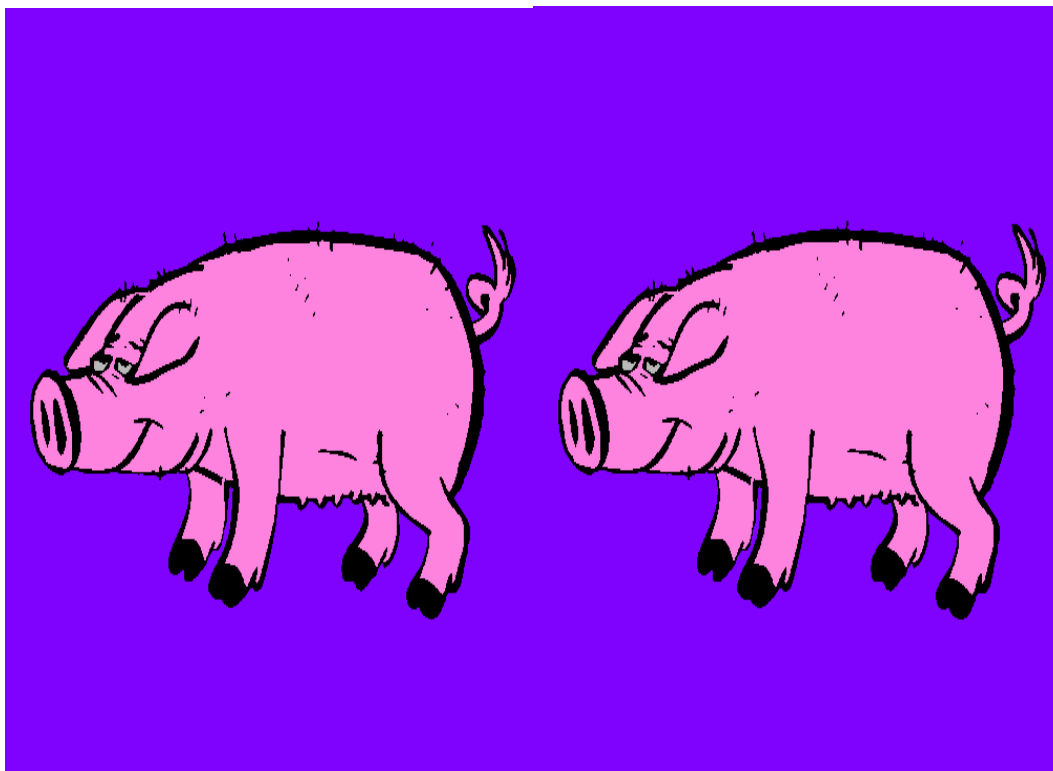


FIGURE E.39



FIGURE E.40



FIGURE E.41



FIGURE E.42



FIGURE E.43



FIGURE E.44



FIGURE E.45



FIGURE E.46



FIGURE E.47

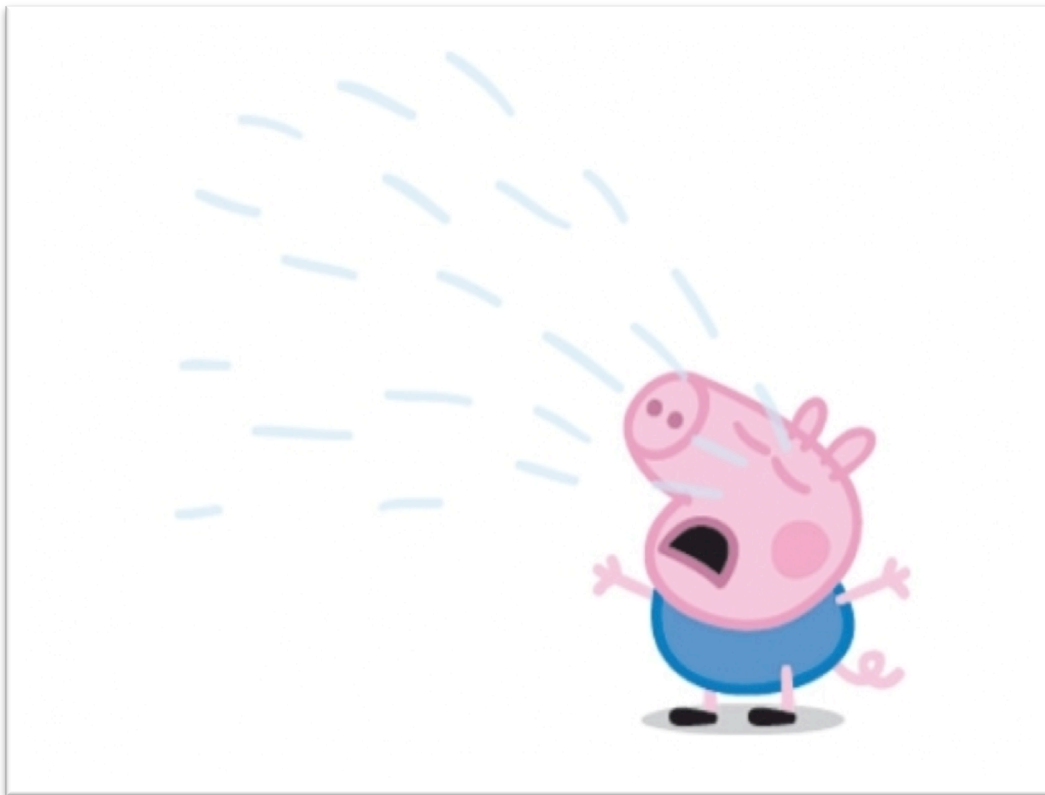


FIGURE E.48



FIGURE E.49



FIGURE E.50



FIGURE E.51



FIGURE E.52



FIGURE E.53



FIGURE E.54



FIGURE E.55

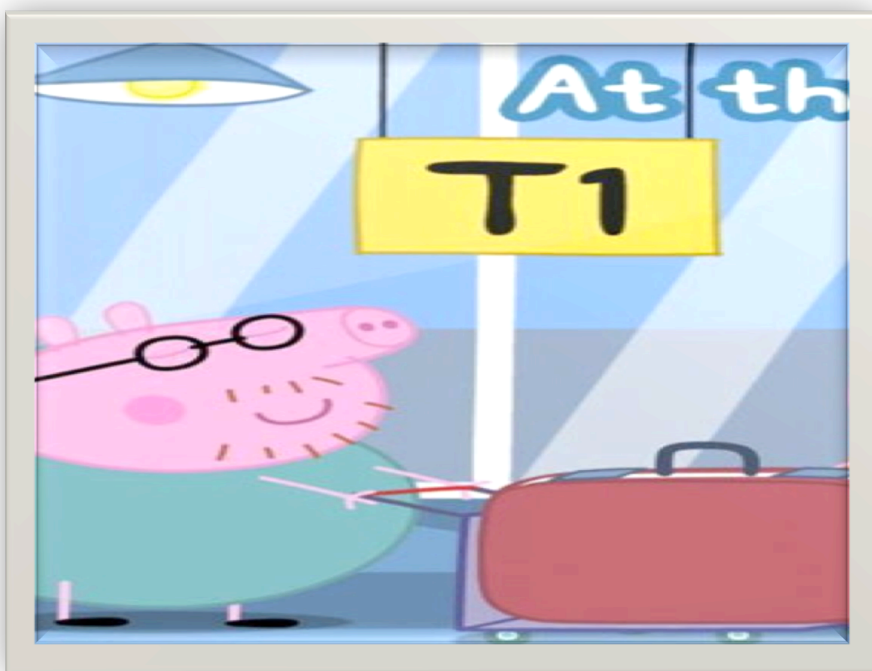


FIGURE E.56



FIGURE E.57

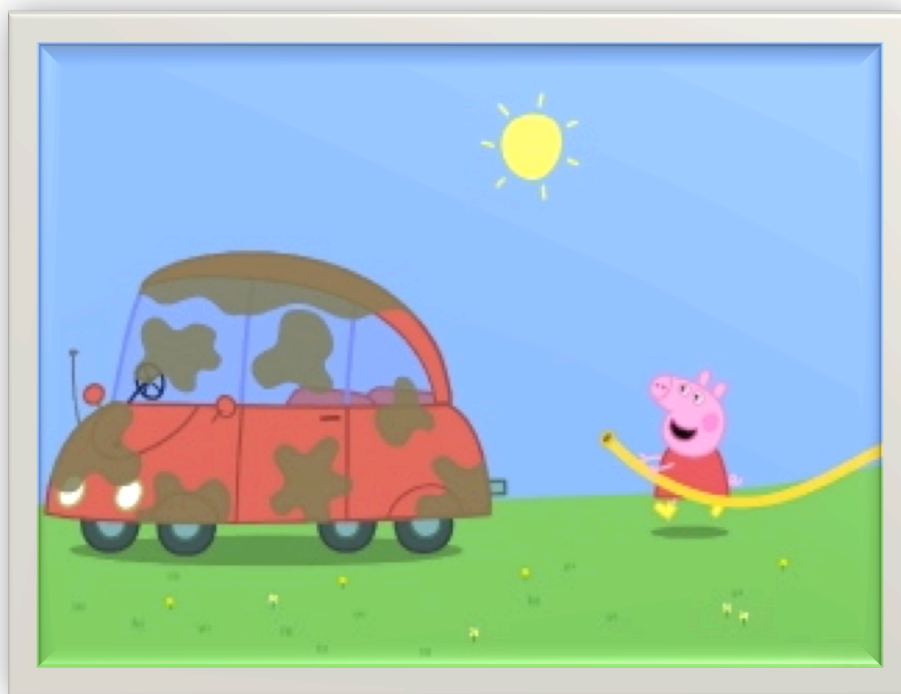


FIGURE E.58



Appendix F

The English elicitation task

Text

Those strawberries are red, but this strawberry... (**is** blue)

These flowers are yellow, but this flower... (**is** orange)

These apples are red, but this apple... (**is** green)

These backpacks are blue, but this backpack... (**is** red)

This dummy is red, but these dummies... (**are** blue)

This flower is blue, but these flowers (**are** fuchsia)

This bunny rabbit is grey, but these bunny rabbits... (**are** brown)

This chick is blue, but these chicks... (**are** yellow)

Here there is a frog. And here what do you see? (frogs)

Here there is a duck. And here what do you see? (ducks)

Here there is a snake. And here what do you see? (snakes)

Here there is a hippo. And here what do you see? (hippos)

Here there is an orange. And here what do you see? (oranges)

Here there is a peach. And here what do you see? (peaches)

Here there is a church. And here what do you see? (churches)

Here there is a witch. And here what do you see? (witches)

Look, George! George likes to play basketball. What does he do?

Look, Peppa and Suzy Sheep. Peppa and Suzy Sheep like to play golf. What do they do?
(**they** play)

Look, George! George likes to brush his teeth. What does he do? (he **brushes**)

Look, Peppa and George! They like to brush their teeth. What do they do? (**they** brush)

Look, Peppa! Peppa likes to eat pasta. What does she do? (She **eats**)

Look, Peppa and George! Peppa and George like to eat ice cream. What do they do? (**they**
eat)

Look, George! George likes to wash himself. What does he do? (he **washes** himself)

Look, Peppa and George! Peppa and George like to wash themselves. What do they do?
(**they** wash themselves)

Look, George! George likes to cycle. What does he do? (He **cycles**)

Look, Peppa, George and their friends. They like to cycle. What do they do? (**they** cycle)

Look, George! George likes to cry. What does he do? (cries)

Look, some children and George! What do they do? (**they** cry)

FIGURE F.1



FIGURE F.2

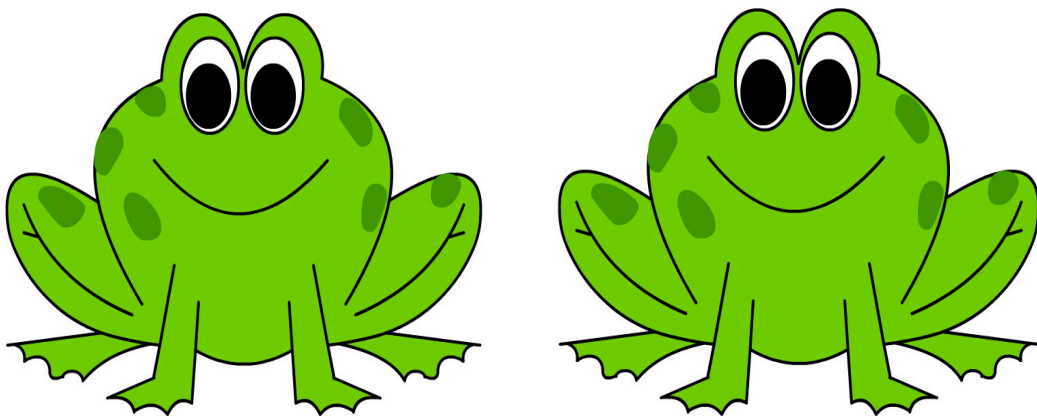


FIGURE F.3

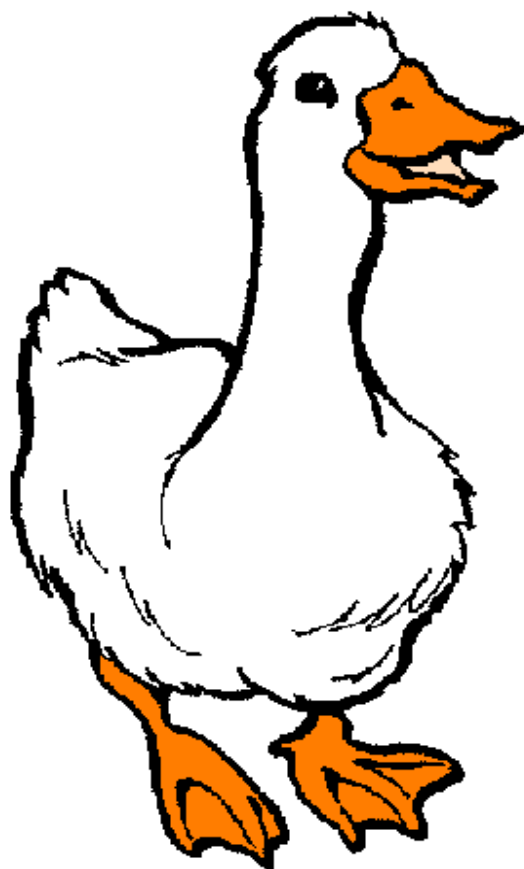


FIGURE F.4

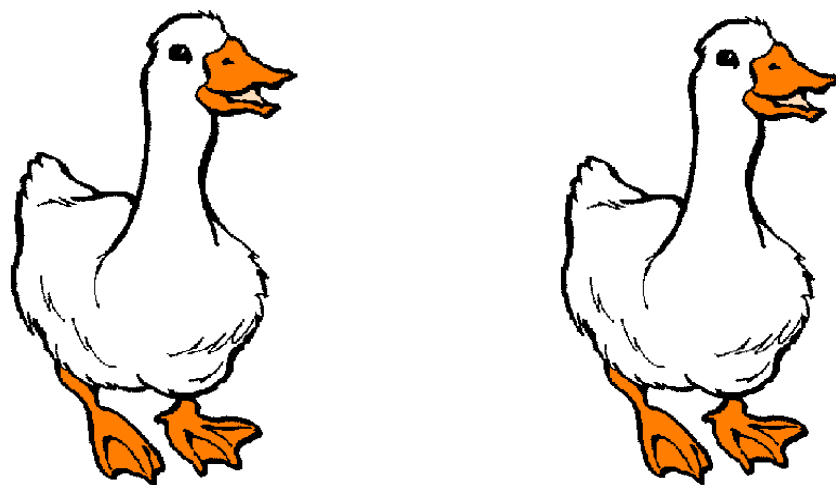


FIGURE F.5

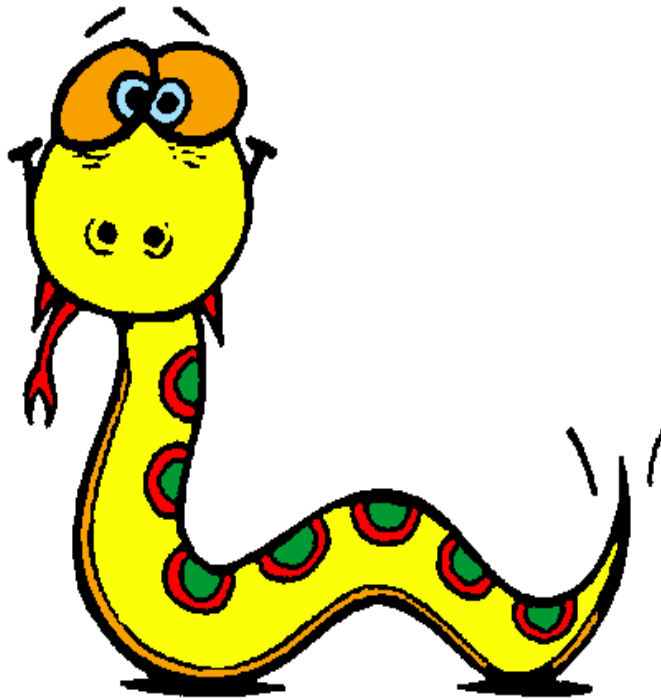


FIGURE F.6

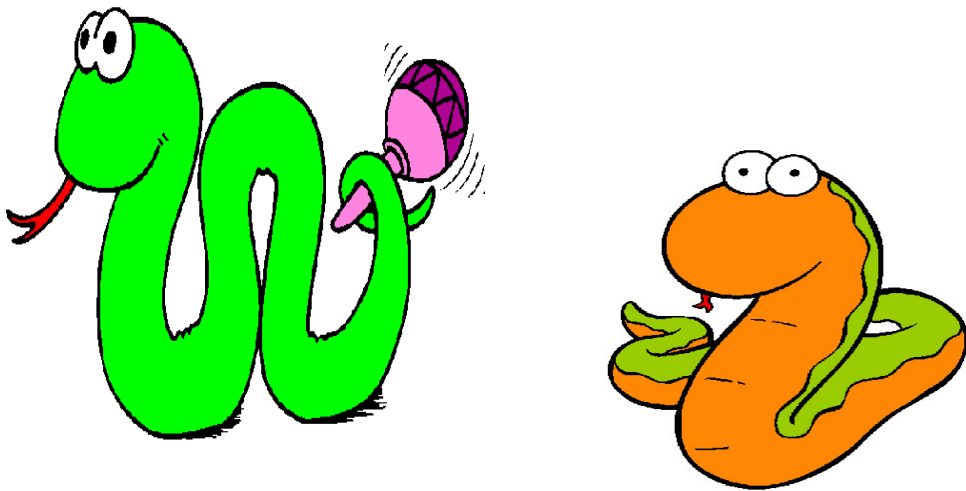


FIGURE F.7

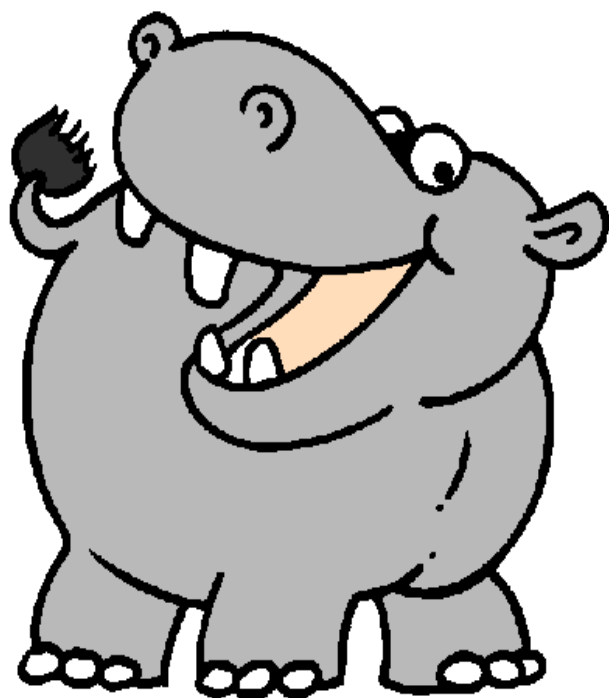


FIGURE F.8

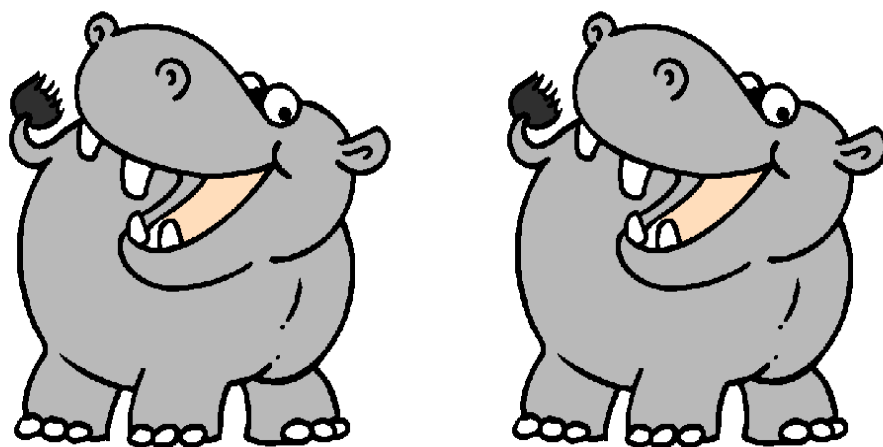


FIGURE F.9



FIGURE F.10

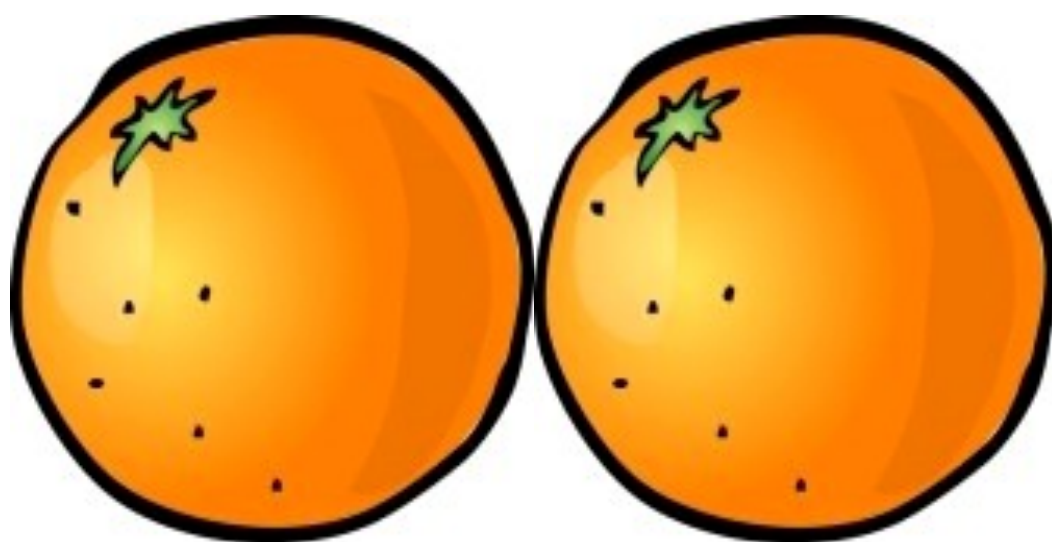


FIGURE F.11

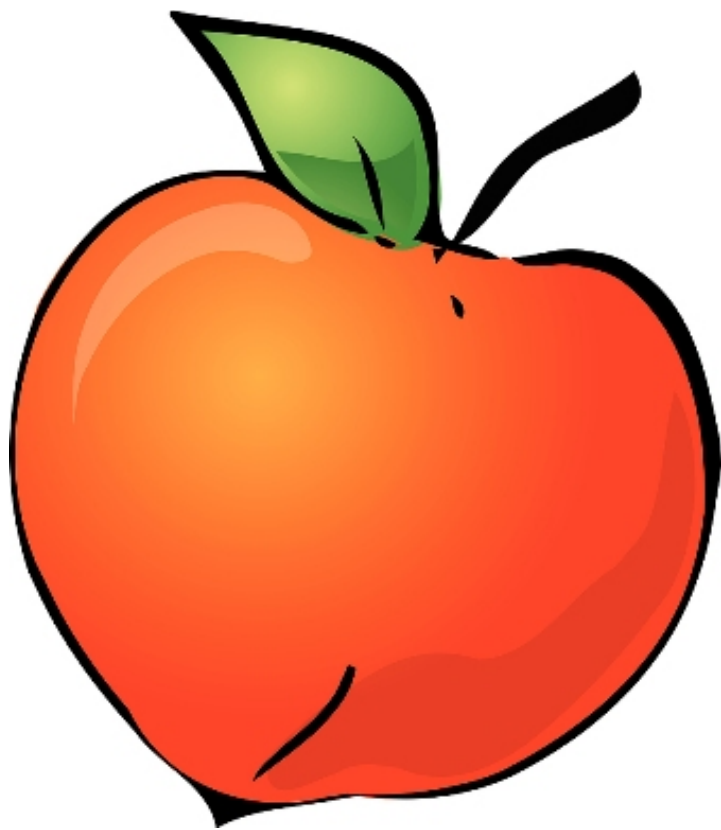


FIGURE F.12

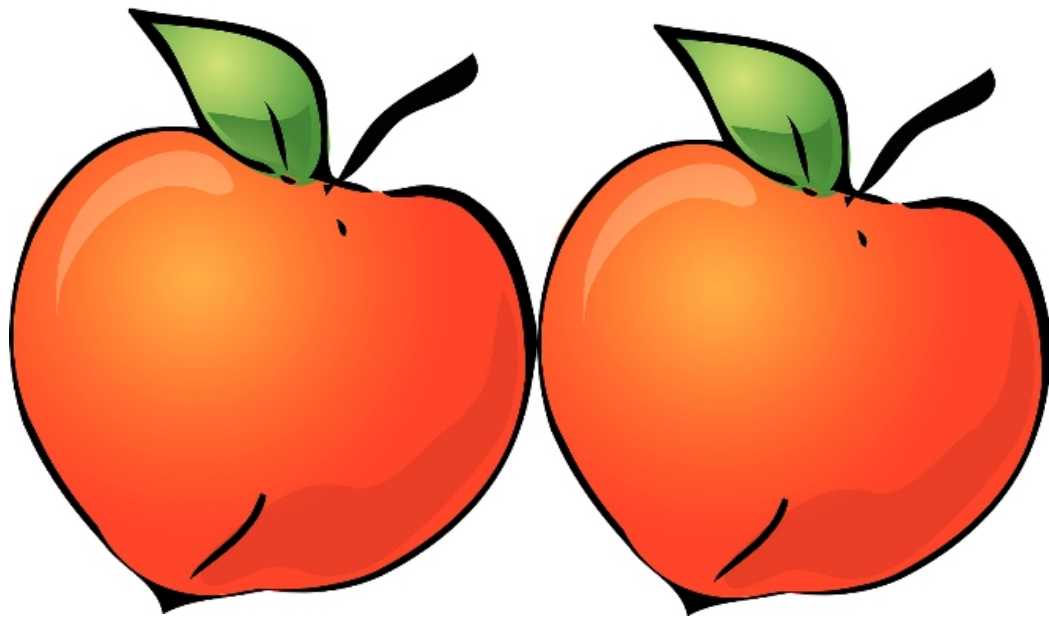


FIGURE F.13



FIGURE F.14



FIGURE F.15



FIGURE F.16



Figure F.17



FIGURE F.18



FIGURE F.19

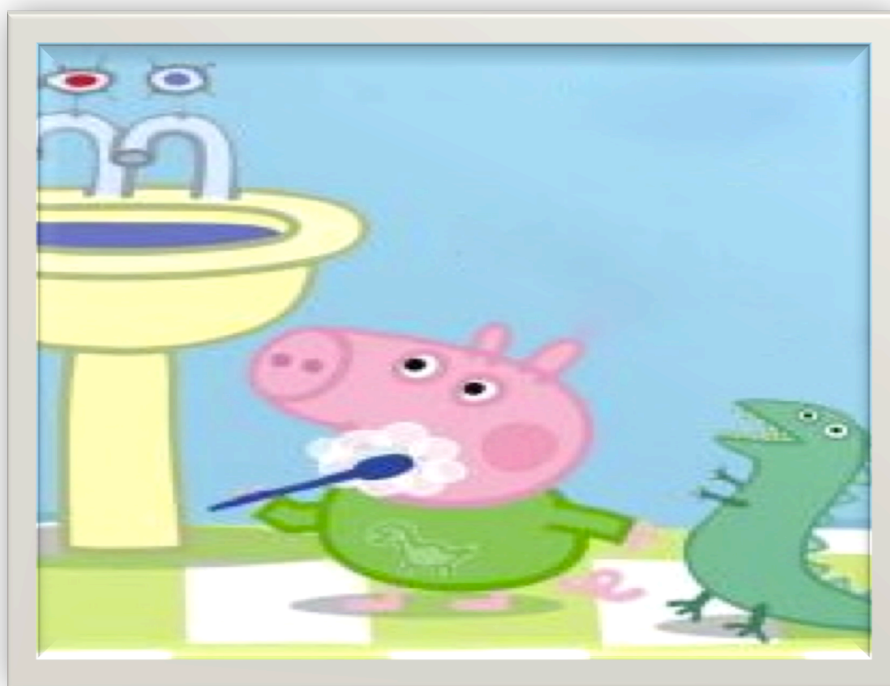


FIGURE F20



FIGURE F.21

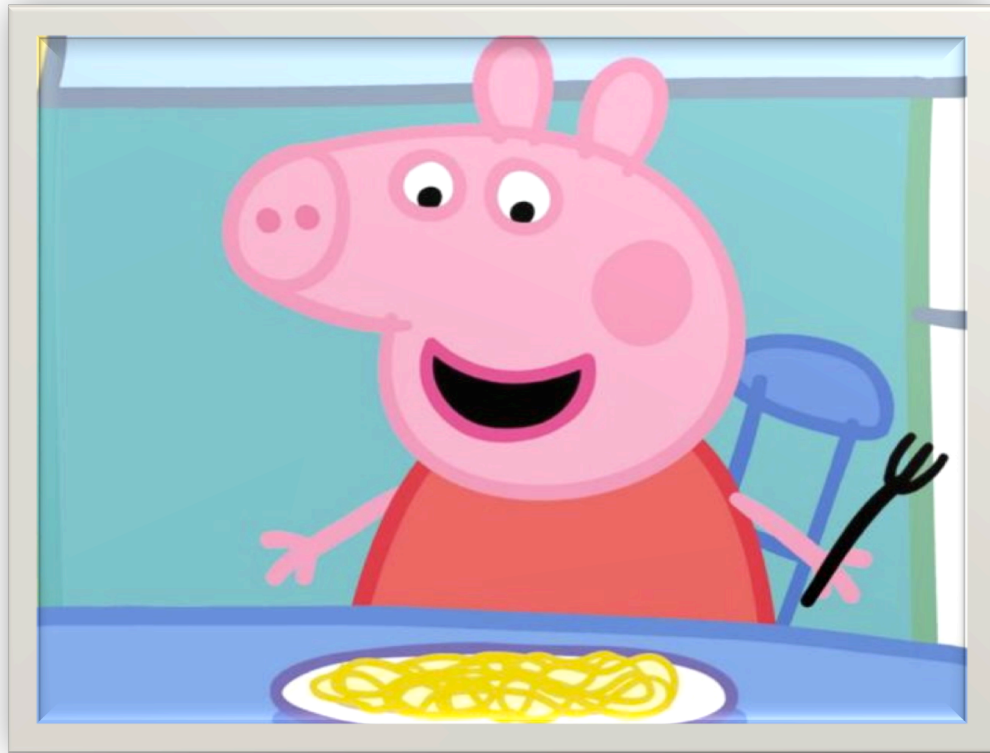


FIGURE F.22



FIGURE F.23



FIGURE F.24



FIGURE F.25



FIGURE F.26



FIGURE F.27



FIGURE F.28



Appendix G

Amy's mixed utterances

Table G.1 Italian to English

Age	Noun Insertion	Word Order	Noun Morphology	Other
3;0.14	un caterpillar questo è un party un cupcake un watermelon un bunny rabbit			
3;2.21	perché questi sono i gloves? un turtle			
3;3.10	Amy vestita da witch i leggings e i tights quando io ero un baby			
3;4.13	il bunny rabbit un teddy		perché non c'è los lettos? non c'è ancora dei letts.	questo è also un papà
3;5.23	si riposa, my god! mamma, c'è la fly la fly			aveva i pantaloni pink this ho fatto
3;6.21	è un drum indossa un cappotto rosso e il tights sono a triangle			

3;7.21	un horsie; sai che sound aveva? no, gli horses fanno nehhe; io posso avere Hello Kitty curtains? ci serve dei curtains, mamma! ci sono i curtains di Hello Kitty, mamma perché non c'è anche Minnie su curtains?	io posso avere Hello Kitty curtains?		perché è tanto funny
3;8.24	mamma, anche questo house era messy? perché abbiamo tolto i picture? a me piace giocare con Mickey Mouse ball	a me piace giocare con Mickey Mouse ball		

Table G.2 English to Italian

Age	Noun Insertion	Verb Morphology	Other
3;0.14			
3;2.2	daddy this le finestre		questo like that
3;2.21		io make it	
3;5.23			questo I don't want

Appendix H

Ava's mixed utterances

Table H.1 Italian to English

Age	Noun Insertion	Word Order	Verb Morphology	Other
2;2.6	buggy			
2;4.10	anche l'altra hand.			
2;5.8	come fire alarm	è Minnie Mouse piscine		
2;6.6	il presentino per zina	questa è la mia Peppa Pig spilla Amy's letto c'è nessuno		io e you
2;7.10			io sono mangiando il cracker sono bevendo l'acqua sono giocando con il caminetto sono facendo una casetta	
2;8.0	c'è sweeties			
2;9.19	e questi sono i tiger	perché non ce l'abbiamo un arancione gatto		
2;10.15	i raisins		sono coprendo Masha	
2;11.14	voglio giocare il Masha e Orso game i pumpkins un penguin uno stick	voglio giocare il Masha e Orso game		
3;0.18	il bedroom		sono aspettando che mi dai la vite	George green e Peppa rosso perché questo è yellow?

Table H.2 English to Italian

Age	Noun Insertion	Verb Insertion	Other
2;5.8	she's gonna do la colazione		
2;6.6	in my piatto the margherite he maked the erba		
2;7.10	a gatto		
2;8.0	a capra no cavallo		
2;10.15	and when will I go to balletto with amy?		can I bring questo to the crèche?
2;11.14	some ospiti	you were a lavorare	

Appendix I

Consent Form and Participant Information Leaflet

TRINITY COLLEGE DUBLIN

SCHOOL OF LINGUISTIC, SPEECH & COMMUNICATION SCIENCES

Consent Form

Language significance and language development in children with two languages

Anna Festa

I am invited to participate in this research project, which is being carried out by Anna Festa. My participation is voluntary. Even if I agree to participate now, I can withdraw at any time without any consequences of any kind.

This research is being undertaken as part of a PhD study, designed to investigate the linguistic development of children who receive simultaneous exposure to two languages from birth.

If I agree to participate, this will involve me completing a questionnaire about the languages used at home, the amount of time spent using each language and the status of Italian within the family. The questionnaire will take approximately 30 minutes to complete. My participation in this study will also involve the investigator audio-recording my child once a month for about 1.5 hours over a period of approximately 1 year. I agree that my child will also be asked to perform an elicitation task, which will involve her/him watching a PowerPoint slide show featuring familiar animals, objects or cartoon characters and answering related questions. However, should my child show any signs of not wanting to participate, s/he will not be required to do so. The audio-recordings and the elicitation activities will take place in my own house or in a place of my convenience and familiar to my child, at times agreed with the investigator, which will have to be to the least possible extent disruptive of my child's daily routine. Should my child show any signs of tiredness during a recording session, the session will be interrupted or brought to a close. To keep the setting as spontaneous and natural as possible and to minimise any feelings of stress or discomfort arising from the presence of the audio recorder and the researcher, the recorder will be concealed and the researcher will present herself as a family friend who wants to play with the child.

I will not benefit directly from participating in this research. However, a potential benefit arising from my participation could be a better awareness of my child's language development.

Any information or data which is obtained from me during this research, which can be identified with me or with my child will be treated confidentially. This will be done by not disclosing my identity and my child's identity, pseudonyms will be used instead. All the information and the data will be available only to the present investigator or to her supervisor, Dr Martine Smith. They will be physically protected by being kept in a

password protected computer and in secure location, which will be locked when the researcher is not present.

I will also be given a copy of the transcripts for my approval. Should I wish for any of the data not to be used in the research, they will not be. The recordings will not be used for conference presentations or teaching purposes in the future. The transcripts might be used for research purposes in the future. However, under no circumstances will my identity or my child's identity be disclosed and pseudonyms will be used at all times.

If I have any questions about this research I can ask Anna Festa at 0879134726 or festaa@tcd.ie. I am also free, however, to contact any of the other people involved in the research to seek further clarification and information.

David Singleton FTCD,
Professor of Applied Linguistics,
Centre for Language and Communication Studies,
Arts Building, Trinity College, Dublin 2, Ireland.
Tel: 353 1 8961232

Gessica De Angelis,
Assistant Professor of Applied Linguistics
Centre for Language and Communication Studies,
Arts Building, Trinity College, Dublin 2, Ireland.
Tel: 353 1 8961106

I understand what is involved in this research and I agree to participate in the study. I have been given a copy of the Participant Information Leaflet and a copy of this consent form to keep.

Signature of participant

Date

I believe the participant is giving informed consent to participate in this study.

Signature of researcher

Date

TRINITY COLLEGE DUBLIN

SCHOOL OF LINGUISTIC, SPEECH & COMMUNICATION SCIENCES

PARTICIPANT INFORMATION LEAFLET

Language significance and language development in children with two languages

Anna Festa

You are invited to participate in this research project, which is being carried out by Anna Festa. The research is being undertaken as part of a PhD study designed to investigate the linguistic development of children who receive simultaneous exposure to two languages from birth. Your participation is voluntary. Even if you agree to participate now, you can withdraw at any time without any consequences of any kind.

If you agree to participate, this will involve the investigator audio-recording your child once a month for about 90 minutes over a period of approximately 12 months. Your child will also be asked to perform two elicitation tasks, one in Italian and one in English. In each task, s/he will be shown a series of pictures through a PowerPoint slide show, featuring cartoon characters, familiar animals and some common objects. S/he will be asked to complete a sentence or answer a question. The audio-recordings and the elicitation activities will take place in your house or in a place of your convenience and familiar to the child, at times agreed with the investigator, which, however, will have to be to the least possible extent disruptive of your child's daily routine. Each task will take approximately 8-12 minutes to complete.

Your participation will also involve you completing a questionnaire on your child's linguistic environment. The questionnaire is comprised of 27 questions and takes approximately half an hour to complete.

Every effort will be made to minimise any potential negative outcome, which could arise from your participation in this research project. For example, to avoid or minimise disruption of daily routine and any feelings of stress or discomfort, the recording sessions will take place in a place of your convenience and familiar to the child, at times that fit into the child's daily routine, in the presence of at least one parent. To minimise infringement of personal sensitivities, any information or data which is obtained from you during this research, which can be identified with you or with your child, will be treated confidentially. Your identity and the identity of your child will not be disclosed, but pseudonyms will be used instead. The data will be stored in a password protected laptop and in a secure location, which will be locked when the researcher is not present. You will also be given a copy of the transcripts for your approval. Should you wish for any of the data not to be used in the research, they will not.

The recordings will not be used for conference presentations or teaching purposes in the future. The transcripts might be used for research purposes in the future. However, under no circumstances will your identity or your child's identity be disclosed and pseudonyms will be used at all times.

You will not benefit directly from participating in this research. However, a positive outcome arising from your participation, might be a better awareness of your child's language development.

If you have any questions about this research you can contact the investigator, Anna Festa, at 0879134726 or festaa@tcd.ie

You are also free, however, to contact any of the other people involved in the research to seek further clarification and information.

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