The uses of clitic *si* in Child Italian

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Abstract

This paper investigates the different uses of the clitic *si* in Child Italian. Through a corpus study on spontaneous productions of children aged 1;4-3;4, we check whether

all functions of *si* are realized by children and we give a new perspective from language acquisition to a long-standing debate, namely whether there exists only one type of *si* or whether there are many different ones. Our results show that Italian children use *si* productively and adult-like early on, and they produce all its different functions: impersonal, anticausative, true reflexive, and inherent reflexive – although at different rates. We claim that our results support the one *si* approaches, and the difference in the frequencies of *si* functions reflects the structural complexity of some structures.

Keywords: clitic *si*, Italian, first language acquisition, impersonal, syntax.

1. Introduction

The clitic *si* in Italian appears in a wide variety of contexts, and despite extensive theoretical research its role and interpretation are still heavily debated. In this paper, we focus on some of its uses, observing them through the lenses of child language acquisition. We discuss the result of a corpus study, determining the types and order in which the different functions of *si* emerge in children's speech. This could help us contributing from a new perspective to the long-standing debate between competing sets of theories that have been proposed in the literature (for an overview see D'Alessandro 2007, Pescarini 2015): one stating that all types of *si* can be reduced to the same element which covers all the different functions, and the other claiming that there exist (at least) two types of *si*s which are (syntactically and/or semantically) unrelated to each other. The paper is structured as follows. Section 2 provides a brief overview of the Italian uses of *si* in adult language, illustrates current theoretical accounts for an analysis of the clitic *si*, and finally summarizes the state of the art on the acquisition of this clitic in Romance languages. Section 3 presents the research questions and hypothesis, and Section 4 illustrates our study. In Section 5 the results of the corpus study are presented. Section 6 discusses the main findings, while Section 7 concludes the paper.

2. The different uses of *si* in Italian

In Italian, as in all Romance languages, the clitic *si* (or *se* in Catalan, French, Portuguese, Romanian, and Spanish) can appear in several contexts assuming different functions. The main uses of this clitic in Italian can be listed as follows: true reflexive (1), reciprocal (2), inherent reflexive (3), anticausative (4), impersonal (5 - 6), passive (7), and middle (8).[1]

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[1]   The list is not exhaustive, as other uses have been individuated and discussed in the literature. See the case of the so-called (low) applicative *si*, as in (i), mentioned in D'Alessandro (2007) and analyzed in Campanini and Schäfer (2011) and in Martin and Arunachalam (2022).

(i)   Livia si è   bevuta   un frullato.
        Livia si be.3SG   drunk   a smoothie
        'Livia drank a smoothie.'

(1)   Maria   si   pettina.
       Maria   si   comb.3SG
       'Maria combs herself.'

(2)   Le maestre   si   abbracciano.
       the teachers   si   hug.3PL
       'The teachers hug each other.'

(3)   Sebastiano si   addormenta.
       Sebastiano si   fall.asleep.3SG
       'Sebastiano falls asleep.'

(4)   Il vaso   si è   rotto.
       the vase   si be.3SG   broken
       'The vase broke.'

(5)   In quel ristorante   si spende   molto.
       in that restaurant   si spend.3SG   much
       'In that restaurant one/people/they spend(s) a lot.'

(6)   Domani   si va   al mare.
       tomorrow   si go.3SG   to.the sea
       'Tomorrow we are going to the sea.'

(7)   In Italia   si mangiano   gli spaghetti.
       in Italy   si eat.3PL   the spaghetti
       'In Italy people eat spaghetti.'

(8)   Questo   libro si legge   facilmente.
       this   book si read.3SG   easily
       'This book reads easily.'

In true reflexive *si*, as in (1), the two theta-roles are assigned to the same entity. In Cinque (1988)'s terms, reflexive *si* absorbs the external theta-role and accusative case, since it is merged as the external argument of the verb and undergoes head movement towards I. For this reason, the internal argument moves to the subject position and receives nominative case (see also Burzio 1986, D'Alessandro 2007). What yields the reflexive interpretation is either the co-indexation between the moved DP (internal argument) and *si* (see Belletti 2020 for a detailed explanation), or a bundling operation (in terms of Reinhart and Siloni 2005). Reflexive *si* can take on another value as in (2), namely the reciprocal one. Reflexives and reciprocals have the same distribution: they must refer to, and be bound by, a subject antecedent. These are traditionally considered bound anaphors, hence subject to principle A of the Binding Theory (Chomsky 1981, Lebeaux 1983). However, they differ in that reciprocals must have a plural interpretation (see Manzini 1986). Given that two arguments are needed for these constructions, the reflexive and reciprocal uses are allowed only with transitive verbs.

Inherent reflexives, as in (3), are found with a restricted set of verbs, i.e. unaccusatives. That is to say, verbs without an external argument – and consequently which cannot assign accusative case.[2] For such a reason, in some analyses, *si* operates only in the lexicon, remaining syntactically inactive (Reinhart and Siloni 2005): it does not have a role associated (Burzio 1986, Cinque 1988, Rizzi 1986) and, specifically, it cannot bear an agentive construction, since the external argument is absent.

Anticausative *si* – also called unaccusative or ergative reflexive – is found with causative verbs which undergo the causative alternation between transitive and intransitive use. With some verbs, the intransitive use is obligatorily marked with the clitic, as in the case of *rompere* 'break' in (4).[3] In many analyses, anticausative *si* marks suppression or lack of the external argument and of accusative case, but it does not have an implicit role associated, i.e. it is syntactically inactive and is attached to the verb in the lexicon rather than in the syntax (Cinque 1988, Manzini 1986, Reinhart and Siloni 2005). In some other cases it is analyzed as a semantic expletive: given the lack of an external theta-role, *si* is not a thematic argument of these verbs, but is still considered syntactically active, in that the clitic is first merged in an A-position (Schäfer 2017).

One function of *si* that has received much attention in Italian is the impersonal one, where even though the subject is not specified, it can nonetheless be understood and identified – depending on the construction – as 'people/they/one/we'. Its interpretation is arbitrary, being associated not only with a third-person feature, but also with unspecified number and gender features (Cinque 1988, Manzini 1986). The reference set selected by *si* can be either purely generic, as in (5), or there may be a group of people satisfying the property expressed by the predicate, the so-called existential reading. The generic reading often (but not exclusively) gets an arbitrary reading roughly corresponding to 'people' or 'they/one'. The existential reading may be further specified for inclusiveness (speaker-inclusive reading), or it may not.[4] The speaker-inclusive reading, as in (6), is considered productive mainly in central varieties of Italian - Tuscan dialects in particular (D'Alessandro 2007). It basically corresponds to a first person plural 'we' and can be considered as the most unrestricted reading, since it contains all the participants in a context (on this point see Cinque 1988, Chierchia 1995, Holmberg and Roberts 2013). Impersonal *si* can be used with all verb types: it can be either the agent of transitive and unergative verbs, or the theme/patient of unaccusative verbs (Cinque 1988). In previous approaches, it has been analyzed in different ways: (i) as a clitic in the I node, which governs an empty NP (*pro*) in subject position and hence receives the theta-role associated with the subject, as well as nominative case (Belletti 1982, Cinque 1988, Kayne 1986); (ii) as a clitic subject that arises via movement creating a chain with an empty category (Burzio 1986); (iii) as a free variable generated in the syntax, which must be bound to an empty category (expletive) in the subject position and form a chain with it, and is

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[2]   Notice that in some approaches, it is even considered parallel to an anticausative structure (Cennamo 2014, Folli 2002).

[3]   Although notice that there are different classes of verbs in this respect: those which are obligatory marked, those that are not (*affondare* 'sink'), and those that are optionally found with the clitic (*bruciare* 'burn').

[4]   See D'Alessandro (2007: 137) for cases in which the speaker is excluded from the reading of *si*: *Mi si è raccontato che Maria ha riso molto ieri* 'I have been told Maria laughed a lot yesterday'.

hence associated with nominative case (Manzini 1986). Whatever derivation we align with, impersonal *si* seems to differ from all the other *si* functions in that it must be bound to the subject and is associated with nominative case.

Another widely discussed function is the passive (passivizing or passivizer) *si*. In such uses, *si* – which can only occur with transitive verbs – absorbs the external theta-role. The verb agrees with the internal argument, which can stay in the base position or can be moved to the pre-verbal one, in a derivation that is similar to what we find in traditional passives (Belletti 1982, Burzio 1986, Hyams 1983). However, unlike what is found in passives, note that (9) and (10) do not license any by-phrase (see Pescarini 2015 for a detailed description of other differences between passive *si* and traditional passive). A fairly common view in the literature is that passive *si* occurs in sentences where the subject and verb agree with each other (Belletti 1982, Cennamo 2014, Lepschy 1986), as exemplified in (9) and (10)[5].

(9)   In Italia   si mangiano   gli spaghetti (*da tutti).
       in Italy   si eat.3PL   the spaghetti (by everyone)
       'In Italy people eat spaghetti.'

(10)   In Italia   si mangia   la pizza (*da tutti).
       in Italy   si eat.3SG   the pizza (by everyone)
       'In Italy people eat pizza.'

However, in cases of singular agreement it is not possible to distinguish between an impersonal and a passive use – whereas it is in case the agreement is plural, as in (9). According to Lepschy (1986), in fact, a sentence like the one in (10) can be paraphrased as 'the pizza is eaten' or 'one eats pizza', while the sentence in (9) can only receive a passive interpretation, e.g. 'the spaghetti are eaten'. Other approaches embrace a different analysis, where both structures (9) and (10) with plural and singular agreement are considered instances of impersonal generic constructions (Cinque 1988, D'Alessandro 2007, Pescarini 2015). Recent proposals on analogous Spanish constructions suggest that, despite what agreement facts might suggest, in these constructions the internal argument of the verb is not the subject but the direct object throughout the derivation, while *si* is the active nominative pronominal subject (see Ormazabal and Romero 2019, 2024 for a detailed analysis).

Finally, in some of the formal literature (Cinque 1988, Pescarini 2015), the term 'middle *si*' is used to identify a particular construction apparently identical to the impersonal/passive one in which, however, any specific temporal reference is absent. This is exemplified by the case in (8). Typically, middle *si* occurs with modal adverbs and with transitive verbs. It has been proposed that *si* blocks, or suspends, the external argument and accusative case. Consequently, the internal argument moves to the pre-verbal position (Cinque 1988, Manzini 1986). In other words, middle *si* can be

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[5]   A variant for (9) is the sentence in (i) where the agreement on the verb is singular. Although we acknowledge the existence of such cases, they will not be discussed in the present work, since they are not acceptable to all speakers and seem to undergo idiolectal variation (D'Alessandro 2007).

(i)   In Italia   si mangia (gli) spaghetti.
       in Italy   si eat.3SG (the) spaghetti
       'In Italy people eat spaghetti.'

considered as an instance of the impersonal one (Manzini 1986, Cinque 1988 – although see Pescarini 2015 for a different conclusion). To further reinforce this idea, notice that the agreement patterns of middle *si* are not different from those of impersonal/passive *si* with the possibility of having plural verb-internal argument agreement (D'Alessandro 2007).

In sum, the list of *si* functions can be grouped as follows: (i) true reflexive (1) and reciprocal (2); (ii) inherent reflexive (3); (iii) anticausative (4); and (iv) impersonal. Impersonal *si* includes the generic (5) and speaker-inclusive (6) readings, but it also covers other functions that could be seen as instances of impersonal constructions – in particular of impersonal generic constructions: passive (7), and middle (8). In conflating these functions, we follow some of the accounts presented so far (Cinque 1988, D'Alessandro 2007, Manzini 1986).

In all the uses listed above, the presence of *si* is mandatory: we can say that the clitic *si* serves as a marker to get to those meanings and, apparently, has a general function of absorbing or blocking part of the argument structure (generally the external argument) of the verb. We will return to this point in Section 6. However, a question remains: is it merely coincidental that such seemingly different constructions rely on the same clitic form? This question has sparked significant debate within generative grammar from the 1980s to the present day: the 'one *si* vs. many *si*s' debate (see Pescarini 2015 for an overview). The following paragraph briefly outlines the theories supporting these two approaches.

2.1. The one *si* versus many *si*s debate

Before moving on to our study, it is worth mentioning the main approaches to *si* that have been proposed in the literature. As anticipated, previous accounts fall into two main set of theories: (i) 'many *si*s' theories, claiming the existence of (at least) two different *si*s (Belletti 1982, Burzio 1986, D'Alessandro 2007, Napoli 1973, Pescarini 2015, a.o.) and (ii) 'one *si*' theories (Belletti 2020, Cinque 1988, Kayne 1986, Manzini 1986, Manzini et al. 2016) which claim (with different degrees of abstraction and generalization) for the existence of only one *si* common to all – or to the majority of – functions.

Within the first set of theories, different divisions among *si*-types have been proposed. The first attempt dates back to Napoli (1973), who proposes that *si* has two functions: a reflexive one and an insertion one. The former governs reflexives, reciprocals, anticausatives, and middles, while the latter applies to impersonal and medio-passive structures. These two functions are considered semantically and syntactically distinct.

Burzio (1986) distinguishes several types of *si*s. First, a reflexive one, which is base-generated in clitic position and forms a chain with an empty category in object position that bares both case (accusative) and theta-role (object). Another type marks unaccusativity, signaling the lack of assignment of a thematic-role to the subject, but without a syntactic role: it is simply an affix. In his analysis, this is the case for inherent reflexives as well as for anticausatives. And finally, a *si* type dedicated to impersonals and passives, classified as a subject clitic associated with nominative case, which must be cliticized by movement.

Along the lines of Burzio's argument, D'Alessandro (2007) and Pescarini (2015) isolate the impersonal *si* as distinct from the other *si*s, being characterized by

the fact that it introduces an unspecified subject in the clause and can co-occur with other *si* functions (notably the reflexive one) occupying a lower position in the structure. Depending on the analysis, impersonal *si* also covers the function of middle and passive *si* (D'Alessandro 2007) or only of passive *si*, being a different variant – with plural verb agreement – of the *si* impersonal construct (Pescarini 2015).

Belletti (1982) proposes an even more subtle distinction between impersonal-active and impersonal-passive *si*, which are claimed to undergo different syntactic processes: while the former receives nominative case and external theta-role, the latter is assigned accusative case and external theta-role. Functioning as a passive morpheme, *si* can absorb the accusative case the verb would typically assign to its direct object. Additionally, in this role, *si* also absorbs the external theta-role. This allows for a passive configuration whereby the object moves to the subject position and is assigned nominative case. This idea has been further developed in Belletti (2020) via the means of acquisition data: she theorizes the existence of a reflexive-passive *si* that may represent a possible intermediate step to get to traditional passive constructions in Italian child-language. The derivation proposed for this reflexive-passive function is the same as in Belletti (1982) for passive *si*, with the exception that *si* is co-indexed with the DP subject, yielding to a reflexive interpretation in the adult grammar, but not necessarily triggered in child production. Belletti suggests that this analysis aligns with the unified approach of the various types of *si* in Italian. Given the fact that she reduces the impersonal construction in Italian to an instance of passive construction (Belletti 1982), and given that in tensed clauses middle *si* can always be interpreted as an instance of impersonal-passive *si* (Cinque 1988), Belletti suggests that these structures could be considered as an extension of what she calls reflexive-passive *si*.

The first hypothesis proposing a unified nature of *si* dates back to Kayne (1986), who suggested that the underlying mechanism shared by all functions consists of the lack of assignment (or withholding) of the thematic role to the external argument. This generates an unaccusative structure in which the internal argument, if present, moves to the subject position and receives case. This proposal was further developed a few years later by Cinque (1988), who speculated that all uses of *si* might follow from the same basis, with different levels of specifications attached to it. He distinguished between argumental [+ arg] and non-argumental [- arg] *si*, where only the former can absorb external theta-role. True reflexive and reciprocal *si* are argumental, whereas both inherent reflexive and anticausative *si*s are non-argumental: they are syntactically inactive (and, in fact, are found only with verbs which do not assign external thematic role) and are basically the result of lexical processes. Impersonal *si* can either be argumental or non-argumental, depending on the verbs it occurs with: if the verb assigns an external theta-role it will be argumental, whereas non-argumental *si* is found with all verb classes. Finally, passive *si* is non-argumental. The unification can be obtained at a certain level of abstraction: (i) impersonal [± arg], (ii) passive [-arg] and (iii) reflexive (true, reciprocal, inherent and anticausative). [± Arg] *si*s respectively (i) absorb [+arg]/identify [-arg], (ii) suspend [-arg] and (iii) absorb [+arg]/ suspend [-arg] the external theta-role. In other words, all functions of *si* somehow block part of the argument structure of the verb.

Manzini (1986) offers one of the first unified accounts for *si* that takes into account both syntactic and semantic properties of each function. She manages to unify impersonal and reflexive *si* on syntactic bases: both *si*s are bound by the subject (chain

formation relation or referential dependence relation), the only difference being that impersonal *si* forms a chain with the subject, while reflexive *si* is in a referential dependence relation with it. On the semantic side, they both have a (free or dependent) variable-like character: all uses develop from the same lexical item from which different functions can arise depending on (i) its association with a free- or a dependent-variable, and (ii) the presence or absence of a passivizer property, which blocks the assignment of the external theta-role in the subject position. These are summarized in Table 1.

Table 1. Manzini's derivation of impersonal, reflexive and middle *si*s.

	variable	passivizer
impersonal	free	-
reflexive	dependent	-
middle	free	+

Source: Adapted from Manzini (1986: 259).

Impersonal *si* is a free variable, where the passivizer property is not realized. On the other hand, when the passivizer property is realized with a free-variable, we are dealing with a middle *si*. Reflexive *si* is a dependent variable, since it must be bound by the subject, and no passivizer property is realized.[6] Notice, however, that in this account one major category is left out: anticausative *si* is considered to operate in the lexicon, where it attaches to the verb. Hence, it works differently from the *si*s described here, which instead play a role in the syntax. Manzini (1986) assumes that in such a case its semantic properties are meaningless (see also the proposal in Schäfer, 2017). Eventually, Manzini et al. (2016) unifies anticausative constructions with the other functions, suggesting that in this case *si* is a free variable that cannot interpret the external argument altogether (which, in this approach, is projected).

Despite extensive theoretical debate and several theories that have attempted to define unified or multiple derivations of the clitic *si*, no studies exist in the acquisition domain that investigate its various uses in a way that could inform one theory or another. We think that acquisition data can contribute to the theoretical debate on the existence of one or more types of *si*. For this reason, in the next section we focus on the few studies that investigated the acquisition of the clitic *si/se* in Romance languages. Furthermore, we briefly present the few studies on Italian child language that investigated the acquisition of some uses of the clitic *si*.

2.2. *Si/Se* in Child language

To our knowledge, to date there are no studies considering the acquisition of all the different uses of *si* in Italian. Hence, studies on other Romance languages regarding the acquisition of this clitic will be briefly discussed in this section. We will report the results of some studies conducted in Peninsular Spanish and French. The uses of *se* (Italian *si*) in these languages reflect only partially those found in Italian, given that impersonal – either generic or speaker-inclusive – is expressed with a different clitic

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6   In Manzini's proposal another function is taken into account, namely a middle-reflexive use, which is a dependent variable with passivizer property, as exemplified here: *gli unici bambini lavatisi* 'the only children (who) washed themselves'. Since such cases were not produced by children in our study, we excluded them from Table 1.

in French (*on*) and is not reported in acquisition studies in Spanish. We will conclude this section reporting on the very few studies that looked at the acquisition of some functions of *si* in Italian.

As for Peninsular Spanish, in a corpus study based on CHILDES Teomiro Garcia and Escobar Alvarez (2013) looked for productions and omissions of *se* in one child (age range 1;9-4;7). They showed that anticausative and inherent reflexive *se*s were produced adult-like since the age of 2 years. Although impersonal *se* is an option in Spanish, it was not mentioned in their study. Pierce (1992) tested the acquisition of Spanish middle-passive *se* constructions in 18 children aged 3;7-5;9 via a semi-imitation elicited production task. The results showed that children were more likely to produce sentences with the object in post-verbal position (V-S passive) than in pre-verbal one (S-V passive). Performance on the *se*-passives with pre-verbal object improved with age and became fully productive only at 5-6. According to the author, the outcome of the facilitated production of V-S passives when compared to S-V passives was due to a lack of A-chains, as nominative case may be assigned under government to the subject in post-verbal position, but not in pre-verbal one (similar to Ormazabal and Romero 2024's analysis).

Regarding the acquisition of clitic *se* in French, different studies have looked at its approximate age of acquisition, yielding contradictory results. Heinen and Kadow (2010) tried to determine the phase of acquisition of different French morphosyntactic constructions on the basis of an analysis of diary studies of 18 children and indicated the acquisition of reflexive *se* between 2;1-3;8. Similarly, Hamann et al. (1996) analyzed a longitudinal corpus collected on one subject and found that reflexive *se* was produced by the child only around 2;6. The largest study on this topic is the one by Barrière et al. (2000) and the following work Barrière and Lorch (2006), who searched and identified all *se*-constructions in large corpora of speech production (3 diary studies, 2 CHILDES corpora, 2 cross sectional corpora of children aged between 2-4 and 6-7) collected on 200 children. Data analysis revealed that reflexive and reciprocal *se*s were the first to appear (already at 2;1) and that anticausative/middle-passive *se* constructions appeared very shortly after (from 2;5).

To sum up, previous studies suggest that (i) anticausative and inherent reflexive *se* are acquired first in Spanish, (ii) middle-passive *se* in Spanish is fully acquired around the age of 5-6, and (iii) reflexive *se* in French is acquired slightly before anticausative and middle-passive uses. However, these studies do not take into account the use of impersonals, which would be possible only in Spanish, since French relies on a different clitic (*on*) to realize this function. The only acquisition data we have on the impersonal function is presented in Hyams (1983), where she reported the emergence of impersonal *si* constructions with singular agreement in Italian children aged 2;5-2;9, followed shortly thereafter by those with plural agreement at 2;10. From these data, it seems that impersonal *si* in Italian appears at the same age as the other functions in Spanish and French. However, Hyams did not detail the frequency with which impersonals were produced, nor did she include a comparison with other *si* constructions. Our study aims to fill this gap.

Although the findings presented here suggest an early acquisition of reflexive *se* in Spanish and French, there are conflicting results in the literature regarding Italian children's language development. It has been widely assumed that by 3-4 years of age children have command of Principle A, know what a reflexive is, and know that it must be locally bound in a variety of languages, including Italian (for an overview see

Guasti, 2017 and references therein). Nevertheless, some recent experimental data seem to challenge this assumption. Belletti and Manetti (2019) and Belletti (2020) observed that children aged 4 to 6 produced non-target use of reflexive structures with the intention of conveying a passive meaning – potentially resulting from a misinterpretation of the reflexive clitic. Similarly, Raminelli and Belletti (2021) identified an unexpected pattern in pre-school (3-4 years) children's comprehension of reflexive *si*, suggesting that they occasionally assign uncanonical interpretation and use to reflexives by attributing a passive reading to the morpheme *si*. Our corpus study will allow us to check whether these constructions are acquired by really young Italian children.

3. Current study: a corpus analysis of child spontaneous speech

The aim of this study is to shed some light on *si* constructions and to compare the predictions that the two set of theories of *si* make for Italian children's productions. We do so through a corpus study. This analysis allows us to look at the production of *si* in spontaneous conversation in young Italian children (aged 1;4 - 3;4). In such a way, we can check whether all the different uses of *si* described in Section 2 are produced by children very early on and may allow us to identify their developmental trajectory. Our research questions can be summarized as follows:

 • (RQ1): Which functions are produced by Italian children at a very early age?
 • (RQ2): What is their timing of production?

Answering these questions should help us to tackle the more general research question we have for this study: can these data inform the existing theories of *si* with respect to the debate on the existence of one or more types of *si*?

In fact, depending on the theory, we can draw different predictions. If it is true that there is only one *si* from which all functions are derived, we can expect that once children have acquired it, they would be able to access and produce all types of *si*. This means that true reflexive, inherent reflexive, anticausative, and impersonal *si*s should all appear around the same time. Note however that impersonal *si* can embrace also passive and middle *si* uses, as described in Section 2. In this vein, we would need to check whether all types of impersonal *si* (impersonal, passive, and middle) are produced at the same time or if there is any delay in their production and, if so, why this is the case.

On the contrary, if there exists more than one *si*, we should observe a competition between functions in child language and a difference in their development. In particular, we would expect that one function appears before the others, blocking them for an extended period of time. In fact, in line with the literature on homophones (Doherty 2004, Mazzocco 1997, Storkel and Maekawa 2005), we can hypothesize that children would have a hard time assigning multiple meanings/functions to polyfunctional morphemes (Anderson 1998, Clark 1991) – in this case polyfunctional *si* – as demonstrated by the earlier acquisition of determiners compared to clitics in Romance and Indo-European languages (Chondrogianni 2007, Gavarró 2020, Jakubowicz et al. 1998, Prévost 2009, Tsimpli 2003) and the earlier mastery of plural noun inflections with respect to third person singular inflections in English (Brown 1973, Hsieh et al. 1999). The development of the differences across *si* functions would, then, occur in subsequent stages.

4. Methodology

We performed an analysis of the spontaneous productions by sixteen typically developing Italian-speaking children available in the CHILDES database MacWhinney (2000). Children were from the following corpora: Antelmi (Morlacchi and Antelmi 2005), Calambrone (Cipriani et al. 1989), D'Odorico (D'Odorico and Carubbi 2003) and Tonelli (Tonelli 1998). Children's productions were recorded between the ages of 1;4 and 3;4, varying from child to child. The age range of the recordings collected in the corpora is reported in Table 2. We searched the corpora for all occurrences of '*si*' and 5 lines of conversational contexts.[7] Contexts were crucial to assign the correct functions and disambiguate possible ambiguous cases. The transcribed recordings – including their contexts – were read, coded, and double-checked independently by two native speakers of Italian. Among the occurrences of '*si* + Verb', immediate repetitions were discarded, both when these were repeating children's productions and when they were adult's utterances. The first occurences of '*si* + Verb' appeared at 1;8. Summing the number of utterances in each corpus, we obtained the total number of utterances produced, which amounts to *n* = 369. Only 11 out of 16 children produced at least one occurrence of '*si* + Verb', and they were, therefore, included in the analysis. The details are reported in Table 2.

Following the classification of *si* uses reported in Section 2, we coded the children's productions for the following functions: (i) true reflexive, in which we included the only occurrence of reciprocal reflexive we found in the corpora, (ii) inherent reflexive, (iii) anticausative and (iv) impersonal (generic and speaker-inclusive). We remind the reader that this group contains not only instances of impersonal, but also of passive and middle *si*. In fact, as explained in Section 2.1, even though some occurrences of *si* can be unequivocally coded as impersonal and other as middle or passive, there is also a grey area in between. For this reason we choose here to conflate all these functions and refer to them as "impersonal". We will return on this matter in Section 5.3.

Table 2. Description of the corpora included in the analysis (Child's name and age range), age of first occurrence of clitic *si* per child, and raw number of coded utterances per child.

Corpus	Child	Age range	Age of first occurrences of *si*	N of *si* + Verb occurrences
Antelmi	Camilla	2;2-3;4	2;2	60
Calambrone	Diana	1;8-2;6	1;11	107
	Guglielmo	2;2-2;11	2;3	49
	Martina	1;7-2;7	1;8	25
	Raffaello	1;7-2;11	2;6	13
	Rosa	1;7-3;4	2;4	42
	Viola	1;11-2;10	2;8	12
D'Odorico	Davide	1;6-2;0	2;0	1
	Linda	1;4-2;0	2;0	1
Tonelli	Elisa	1;10-2;5	1;10	18
	Marco	1;5-2;5	1;9	41

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[7]   Since the Italian corpora in CHILDES are not morphologically marked, we could not search for occurrences of '*si* + Verb'. Hence, our initial search returned both the clitic *si* and the response particle *sì* (yes). We then manually selected all the instances of '*si* + Verb'.

For some utterances, it was not possible to assign a function, even with the support of the conversational context. These cases were coded as unresolved (11) or unassignable (12), and they were consequently excluded from the analysis.[8] The exclusion of these sentences brought the final number of occurrences to $n = 327$.

(11) (Calambrone: Diana 2;0)
      Si apre?
      si open.3SG
      'Does it open? / Do we open it?'

(12) (Antelmi: Camilla 3;1)
      Ora   si spogliamo   eh?
      now   si undress.1PL eh
      'Now does it/do they undress? / Now do we undress each other?'

Children's productions were further coded with respect to verb types used in combination with *si*. We classified them as transitive (13a), unaccusative (13b), unergative (13c), alternating (13d) and modal (13e).

(13) a. (Tonelli: Elisa 2;1)
      Anche   la Mina   si lava   i capelli.
      also   the Mina   si wash.3SG   the hair
      'Also Mina washes her hair.'
      b. (Calambrone: Diana 2;6)
      guadda   l'uccellino là   e si   è   allabbiato.
      look.3SG   the bird   there and si be.3SG   angry
      'Look, the bird over there and (it) got angry.'
      c. (Calambrone: Diana 2;1)
      Ora   si aspetta,   oh.
      now   si wait.3SG oh
      'Now we wait.'
      d. (Tonelli: Marco 1;11)
      un(a) altra calzina   che si è   sporcata.
      one   other sock   that si be.3SG   dirty
      'Another sock that got dirty.'
      e. (Antelmi: Camilla 3;4)
      Non   si può.
      not   si can.3SG
      '(It/we) cannot.'

We know, in fact, that specific functions of *si* are associated with particular verbs: with the exception of impersonal *si*, which can occur with all verb types, reflexives can only occur with transitive verbs, inherent reflexives only with

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[8]   The example reported in (11) is ambiguous between an impersonal and an anticausative reading. For examples like (12), on the other hand, we could not assign any function due to the unintelligibility of the sentence, in which the child could have produced a phonological error (*si* instead of *ci*) or an agreement error on the verb producing it at the 1st person plural, instead of 3rd person singular or plural.

unaccusative verbs, and anticausatives only with alternating verbs. We examined whether Italian children could adhere to these restrictions in terms of verb types. The next section reports the results of the corpus study.
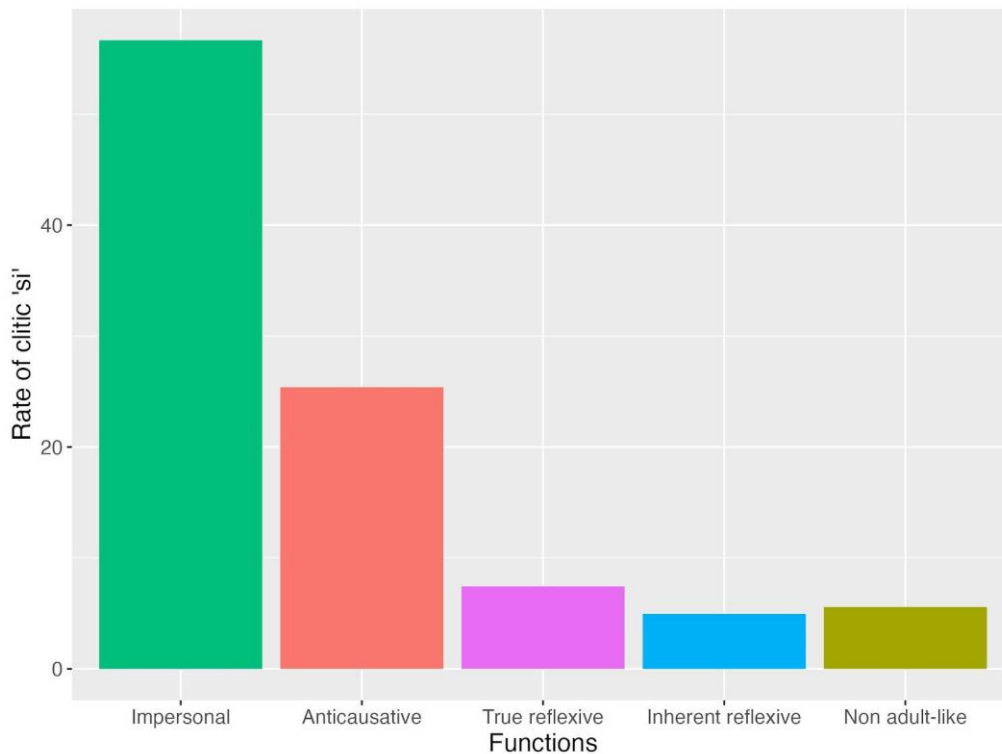
5. Results

5.1 Overall results

We address (RQ1) and (RQ2) together, namely which functions of *si* are produced by children and what is their timing of production. Results showed that Italian children use all *si*-type constructions productively and early-on.

As shown in Figure 1, impersonal *si* were produced more than the other attested constructions: 183 impersonal (56.65%),[9] 82 anticausative (25.38%), 24 true reflexive (7.43%) and 16 inherent reflexive (4.97%).

Figure 1. Proportion of *si* produced by children per function.

Only 18 (5.57%) of the total productions of *si* + Verb resulted in non-adult-like productions, for which some examples are given in (14) and (15). In the majority of non-adult-like productions, children added the clitic in sentences where the subject position was already filled, either by an overt subject, as in (14), or by *pro*, as in (15).[10] Since both (overt or covert) arguments should have taken the same role and case

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[9]   Note that the category "impersonal *si* constructions" may not only contain impersonal *si*, but also instances of middle and/or passive *si*. We leave this issue open and get back at it in Section 5.3.

[10]   The overlapping external arguments are visually indicated in bold in the examples.

(subject and nominative), this resulted in ungrammatical constructions (see Belletti 1982 on the ungrammaticality of such sentences in adult Italian).

(14)   a. (Calambrone: Diana 2;0)
         questa guarda   **si** mette   il piatto **io**.
         this   look.3SG   si put.3SG   the plate I
         'Look this one si I put the plate.'
         b. (Calambrone: Diana 2;0)
         Anche   **i bambini si** va   al mare oh.
         also   the kids   si go.3SG   to.the sea oh
         'We kids are also going to the seaside.'

(15)   (Calambrone: Martina 2;4)
         (*pro*) [le bambole]   si ppoccano   e poi   (*pro*) **si** mangiano.
         (pro) [the dolls]   si get.dirty.3PL   and then   (pro) si eat.3PL
         'The dolls get dirty and then (they) eat.'

Since the study considered longitudinal data from 11 children, we also divided our group into three subgroups based on their age (Group1 = 1;8-2;3 (20-27 months); Group2 = 2;4-2;10 (28-34 months); Group3 = 2;11-3;4 (35-40 months)). From a developmental point of view, impersonal and anticausative functions were the first to appear (from 1;8 onward); shortly after (from 1;11-2;1 onward) reflexives (both true and inherent uses) were attested (Figure 2).

Figure 2. Production of *si* over time. The black dotted lines indicate the three age groups.
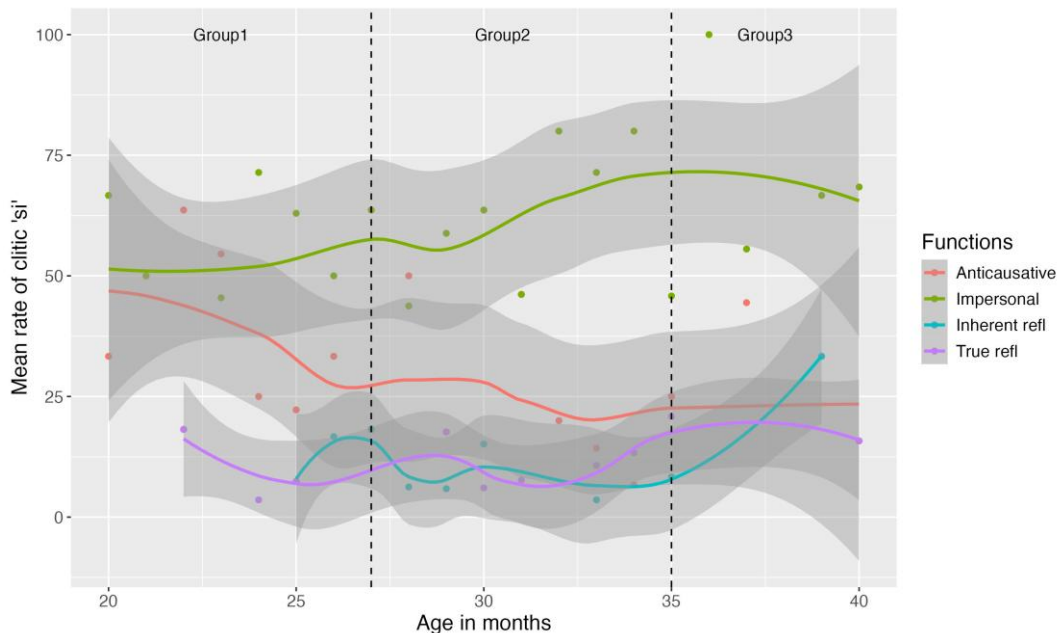
These observations were confirmed by statistical analyses. We fitted a generalized linear mixed model (GLMM) with *si* functions (impersonal, anticausative, inherent and true reflexive) as fixed effect, subgroups (Group1, Group2 and Group3) as covariate and participants as random effect, using the function *glmer* of the "lme4" library (Bates et al. 2015) in the R core statistics environment (R Core Team et al.

2013) version 4.2.2. Post-hoc comparisons were extracted using the "emmeans" library (Lenth et al. 2018). The model revealed a significant main effect of *si* functions: impersonal *si* was produced significantly more than all other functions, as shown in Table 3. No difference between groups emerged from our analysis, suggesting that relative frequency of *si* function was broadly consistent across the three age groups. Post-hoc analyses - corrected for Bonferroni - showed that overall differences between *si* functions (averaged across groups) were as follows: impersonal was significantly more produced than anticausative (estimate = .767, SE = .134, z = 5.741, p <.001), inherent reflexive (estimate = 1.712, SE = .263, z = 6.501, p <.001), and true reflexive (estimate = 1.433, SE = .220, z = 6.527, p <.001); anticausative was significantly more produced than inherent reflexive (estimate = .945, SE = .275, z = 3.435, p =.003) and true reflexive (estimate = .666, SE = .234, z = 2.852, p =.026); no difference emerged between true reflexive and inherent reflexive (estimate = -.279, SE = .323, z = -.864, p = 1).

Table 3. Poisson GLMM using log link. The reference levels are Impersonal si for Si functions and Group 1 for the subgroups. The model showed good fit to the data (AIC = 309.9, BIC = 323.7, logLik = -148.0). Scaled residuals were mostly within ±2, suggesting acceptable model residual behavior.

Coefficients:	Estimate	SE	Z-value	P
(Intercept)	2.257	.207	10.865	<.001***
Anticausative	-.767	.134	-5.741	<.001***
Inherent reflexive	-1.712	.263	-6.501	<.001***
True reflexive	-1.433	.220	-6.527	<.001***
Group2	-.172	.149	-1.152	.249
Group3	.00	.204	.020	.984

Considering the types of verbs used, Table 4 summarizes children's productions. Italian children were already sensitive to verb restrictions at a very young age. In particular, almost the totality of impersonal *si*s occurred with transitive verbs, while the rest were distributed among unaccusative, unergative, and modal verbs. With respect to the other verb types attested in the corpora, anticausative *si* occurred exclusively with alternating verbs, inherent reflexive *si* with unaccusatives, and true reflexive *si* with transitives. Crucially, there was a great variation in the kind of verbs used by the children in combination with *si*: the number of verbs amounted to 73.[11] The most frequent verbs were: *mettere* 'put' (*n* = 71), *chiamare* 'call' (*n* = 29), *fare* 'do' (*n* = 28), *rompere* 'break' (*n* = 25), *mangiare* 'eat' (*n* = 8), *levare* 'take off' (*n* = 7), *bagnare* 'wet' (*n* = 6), *prendere* 'take' (*n* = 6), *vedere* 'see' (*n* = 6). The amount of different verbs confirms that the use of *si* was truly productive in young Italian children.[12]

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[11]   Notice that this number is calculated on a subset of *si*-constructions and does not include verbs where *si* could not be assigned a function (the unresolved/unassignable cases discussed in Section 4), or which were not-adult-like. If we take those into account as well, the total number of verbs adds up to 87.

[12]   An anonymous reviewer asks whether some co-occurrences between *si* functions and verbs are more formulaic/frequent than others in adult language, and suggests that an indication that children are not simply replicating adult co-occurrences would allow us to really claim that the use of *si* is productive. Without data from adults, it is not entirely possible

Table 4. Verb types per *si* functions in Child Italian. Raw numbers (percentages).

	Impersonal	Anticausative	Inherent reflexive	True reflexive
Transitive	166 (90.71%)	-	-	24 (100%)
Unaccusative	11 (6.01%)	-	16 (100%)	-
Unergative	3 (1.64%)	-	-	-
Alternating	-	82 (100%)	-	-
Modal	3 (1.64%)	-	-	-

5.2. Interim discussion

When examining our results, we observe that all *si* functions were produced and appeared around the same time. However, we need to account for the overwhelming use of impersonal *si* with respect to the other *si* functions. Before moving on to a detailed analysis of this group in the next section, we wanted to make sure that the lower production of the other three functions – true reflexives, inherent reflexives and anticausatives – with respect to impersonal *si* was an accurate reflection of the corpus and not due to (i) cases of omission of the clitic – which were not considered in our first search in the corpora – and (ii) a bias of the conversational context.

Concerning (i), we looked for omissions of clitic *si* in true reflexive, inherent reflexive, and anticausative uses.[13] To do this, we conducted a corpus search with the four verbs most frequently used with these functions, namely *mettere* 'put', *fare male* 'hurt', *nascondere* 'hide', *vestire* 'dress' – true reflexives; *sedersi* 'sit down', *scottarsi* 'burn', *alzarsi* 'get up', *arrabbiarsi* 'get angry' – inherent reflexives; and *chiamare* 'call', *rompere* 'break', *sporcare* 'dirt', *bagnare* 'wet' – anticausatives. Children rarely omitted the clitic *si*: only 11/98 times. These were distributed as follows: 3 cases of omissions in true reflexives, 4 in inherent reflexives, and 4 in anticausatives. The fact that Italian children do not omit *si* in anticausative constructions has also been independently shown in Silleresi et al. (2024).

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to answer this question. However, we still consider the use of *si* as being productive, and we think that the uses of *'si* + verb' are not formulaic given the following points: (i) there is a great variety of verbs used, (ii) children use *si* with lexical verbs and with modal verbs, and (iii) they also use the same verb with and without the clitic. Moreover, as for the latter case, we performed another corpus search in every file of 3 children (Camilla (Antelmi), Diana, and Guglielmo (Calambrone)) and we looked for the 8 verbs most frequently attested with *si*. We noticed that not only were these children using both the singular and the plural form, but also that the same child in the same file uttered the verb using different inflections, showing that they have performed a morphological analysis of the verbs as claimed in Guasti (1993/1994). In any case, the crucial point for us is that the utterances of *'si* + verb' involve a total 73 different verbs. So, even if some of these verbs combined with *si* are indeed more frequent in adult language, we still find a large variety of verbs in the children's speech. Moreover, it should also be stated that some of these verbs (that is, bare verbs, not their occurrence with the clitic *si*) are simply frequent in the vocabulary of young Italian children, as in the case of *mettere* (put) or *fare* (do). For these reasons, we would still like to claim that the use of *si* indeed is productive.

[13]   We did not take into account possible omissions of *si* in impersonal cases, as these are impossible to be spotted: in fact, if *si* is omitted in this function, in Italian it basically corresponds to a pro-drop sentence.

Regarding (ii), since the recorded sessions reported in the CHILDES corpora consisted of one-to-one interactions between the child and an adult (parent or experimenter), we wanted to make sure whether these contexts were more prone to elicit 1st (*mi*) and 2nd (*ti*) person reflexive clitics, rather than 3rd person ones. In other words, we checked whether the paucity of reflexives in our results was due to a bias of the conversational context. For this reason, we searched for the number of *mi* and *ti* reflexive (both true and inherent) occurrences. As a result, we found that 1st and 2nd person reflexive clitics were *mi* = 16 occurrences; *ti* = 4 occurrences for true reflexives; *mi* = 13 occurrences; *ti* = 5 occurrences for inherent reflexives. Putting them together with *si*, we obtain a total of n = 44 occurrences of true reflexives and n = 34 occurrences of inherent reflexives. This seems to indicate that the lower frequency of reflexive *si* was not entirely affected by a conversational bias. We can then conclude that reflexive *si* (both true and inherent) was less produced with respect to other functions and that anticausatives were less produced than impersonal. We will speculate on why this was the case in the discussion. The fact that impersonal was the most frequently and first produced function constitutes a novelty in the acquisition literature. Let us now focus on describing how this function was realized by Italian children.

5.3. A focus on impersonal (middle-passive) *si*

First, we separated the occurrences of impersonals between the two subtypes evoked in Section 2: generic and speaker-inclusive readings. Among impersonal constructions, 98 had a generic reading (53.55%) and 33 a speaker-inclusive one (18.04%). The remaining 52 occurrences were ambiguous (28.41%) between the two readings.[14]

Concerning the type of verb used with impersonal constructions, they were distributed as follows: generic *si* = 92 transitives (93.87%), 3 modals (3.06%), 2 unaccusatives (2.05%) and 1 unergative (1.02%); speaker-inclusive *si* = 23 transitives (69.69%), 9 unaccusatives (27.27%) and 1 unergative (3.04%). In sum, the majority of impersonal utterances produced by children were constructions with transitive verbs.

As explained in Section 2 and 4, we grouped passive and middle *si* with instances of impersonal generic *si*. Furthermore, as we know, passives and middles are restricted to instances of transitive verbs. Hence, in order to individuate possible cases of passive and middle *si*, we searched for these among all cases of generic impersonals with transitive verbs, examining three properties: (i) verb agreement (singular vs. plural) between the verb and the DP, as in (16), in relation to (ii) the presence and position of the internal argument (pre-verbal DP vs. post-verbal DP vs. pro-drop), as in (17), and (iii) presence of an adverb. These properties would be an indicator of whether children already have some of the machinery that would lead to the production of instances of passive (properties (i) and (ii)) and middle (properties (ii) and (iii), and possibly (i)) *si*. In particular, for passive *si* we could expect the possibility to move the

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14   These cases could not be disambiguated via the context. Thus, the interpretation remained ambiguous between a generic (people/one) and a speaker inclusive (we) reading (e.g. *e si porta via* 'and si takes away', Calambrone: Diana 2;6).

internal argument to the pre-verbal position,[15] as well as plural agreement on the verb. In the case of middle *si* we should find the internal argument in the pre-verbal position, as well as the use of modal adverbs. Table 5 summarizes these results.

(16) a. (Tonelli: Marco 2;5)
      Si batte   qua.
      si beat.3SG here
      'You have to beat here.'
      b. (Calambrone: Guglielmo 2;9)
      ma quelli lì   si mettono così.
      but those there   si put.3PLP like.that
      'But those over there should be placed like this.'

(17) a. (Antelmi; Camilla 3;4)
      Quello   non si mangiava […]
      that   not si eat.3SG
      'That one could not be eaten…'
      b. (Calambrone: Diana 2;6)
      e   poi   si mette   qui la tazza.
      and   then si put.3SG   here the cup
      'And then you put the cup here/the cup should be put here.'
      c. (Tonelli: Marco 2;5)
      così (*pro*)   si tira
      so (pro)   si pull.3SG
      'You pull it like this.'

Table 5. Properties of DPs in impersonal/middle-passive with transitive verbs (raw numbers).

Agreement verb and DP:	Singular Agreement			Plural Agreement		
DP:	PreV	PostV	Drop	PreV	PostV	Drop
	15	16	56	2	1	2

We did not find any occurrence of modal adverbs, suggesting that (unambiguous) middle *si* was not yet produced by children. Concerning agreement on the verb, almost the totality of the occurrences displayed singular agreement, whereas only 5/92 occurrences had plural agreement.[16] Among the former, DPs were mostly

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[15]   Although notice that, as pointed out by an anonymous reviewer and as we stated in Section 2, the pre-verbal or post-verbal position of the internal argument is not the best diagnostic, given that for both periphrastic passives and *si* passive either options are allowed. Nonetheless, it has been shown that there is a difference with respect to the pre- and post-verbal position in children's uses, as well as in how soon they master them. Specifically, Pierce (1992) showed that the post-verbal position is acquired earlier and used more often than the pre-verbal one in Spanish middle-passive *se* constructions. Hence, we can speculate that we could also have seen a difference in our data, and in particular that the use of the pre-verbal position would more likely be linked to a passive interpretation than the post-verbal one. However, given the fact that numbers were low in general, and that the rate of DPs in both positions was similar, we could not draw any conclusion.

[16]   The few instances of plural agreement were spread in almost the whole dataset starting from 2;1.

omitted, while when realized they were equally distributed in pre- and post-verbal position. This does not allow us to draw any conclusions with respect to property (ii). Concerning the latter, not much can be said except that the shortage of plural agreement suggests that impersonal with plural agreement (unambiguous passive) *si* was almost never produced by children. Taken together, these results seem to indicate that it is not entirely possible to distinguish between the functions of impersonal, passive, and/or middle *si* in most of our data coded as generic impersonal constructions. In fact, as detailed in Section 2 and 4, instances of *si* with singular agreement (and most with the drop of DPs) fall into a grey area in which it is not entirely possible to assign a function over the other. This group hence might just be better referred to as "impersonal/middle-passive".

6. Discussion

The research presented here contributes to our understanding of how the clitic *si* is acquired in Italian. The data we provide have implications not only for the study of the relative order in which different *si* functions are acquired, but also for the broader theoretical framework concerning the nature of *si* – whether it is a single element that covers all the available functions, or whether there are instead multiple distinct *si*s which differ substantially, with little or nothing to do with each other.

Our results indicate that Italian children used *si* constructions in a productive and adult-like way from a very early age (1;8-3;4). Furthermore, they were able to correctly associate verb types and *si* functions. Impersonal (middle-passive) constructions were the most frequently and the earliest produced, followed by anticausative constructions and true and inherent reflexives. Anticausatives emerged around the same time as impersonals (1;8), while reflexives appeared slightly later (1;11-2;1). Among the functions of impersonal *si*, both speaker-inclusive and generic *si* were produced. In the latter, we notice that it is hard to assign an unambiguous function between impersonal and middle-passive, since *si* with a modal adverb (unambiguous middle) was not yet realized by Italian children at the age of 3;4, whereas impersonals with plural agreement (unambiguous passives) were rarely produced (see also Hyams 1983 for similar results).

The results of our study hence seem to align with the one *si* hypothesis, as all functions of *si* – impersonal (middle-passive), anticausative, true reflexive and inherent reflexive – appear within a few months in children's speech. In fact, if there were issues with the acquisition of this polyfunctional clitic, we would expect children to struggle for an extended period of time in the production of multiple *si* functions, as suggested in the literature on the acquisition of homophones (Anderson 1998, Clark 1991, Doherty 2004, Gavarró 2020, Mazzocco 1997, Prévost 2009, Storkel and Maekawa 2005). However, this was not the case. These results were further confirmed by the fact that children rarely omitted the clitic *si* and that they produced it adult-like in almost the whole dataset. That said, some aspects of the data still require further explanations, as certain functions were more produced than others. Notably, there was a higher frequency of impersonal (middle-passive) constructions compared to other functions of *si*.

A first possible explanation is that impersonal *si* can be used with a wider range of verb types (transitive, unergative, unaccusative, modal) which is not the case for all

other *si* functions (Cinque 1988). This explanation works well for the cases of inherent and anticausative *si*: as they occur with a limited set of verbs (unaccusatives in the case of inherent reflexives, and verbs that undergo the causative alternation in anticausatives), we can expect these functions to be quantitatively less produced than impersonal *si*, as indeed we found in our data – especially in the case of the inherent reflexive. Anticausative *si*, despite being less produced than impersonal *si*, was highly attested in the dataset. We speculate that the higher presence of anticausative *si* with respect to true and inherent reflexive *si* may depend on how frequent these functions are in adult Italian. To understand whether this is a possible explanation, we would need to check the distribution of the clitic *si* in the adult language. Unfortunately, the only data existing in this respect rely on a very different classification of *si* functions (Topciu and Chesi 2019).[17] Since this paper focused on the acquisition of the clitic and the timing of production of its functions in child Italian, rather than their distribution in the language, we leave this aspect open for future research.

However, the fact that impersonal *si* is used with all verb types does not explain why, even when we limit the comparison to transitive verbs, these constructions were still produced at a much higher rate than other constructions that require the same verb type, notably true reflexive. The same can be said for those functions of impersonal *si* restricted to transitive verbs, namely impersonal with plural agreement (unambiguous passive) and instances with an adverb (unambiguous middle). This discrepancy suggests that factors beyond verb type may contribute to the higher frequency of impersonal *si*. We argue that the derivation of impersonal *si* is syntactically less complex than those of other *si* functions. This may explain why children produced it more frequently. Let us explore why this might be the case, starting from the comparison between impersonal and reflexive.

We posit – as previously detailed in Section 2 – that impersonal *si* is a clitic that must be bound to the subject. In this scenario, *si* licenses the presence of a null *pro* subject (following Rizzi 1986), or an expletive *pro* (following Cinque 1988). It then forms a chain with *pro*, through which it receives nominative case. On the other hand, in true reflexives and in reciprocals, *si* must absorb the external argument and take accusative case, then the internal argument must move to the subject position, and *si* must be anaphorically bound with it (Belletti 2020). When comparing the two derivations, it becomes clear that reflexives require some additional machinery beyond what is needed for impersonal *si*. It is not then surprising that children find it easier to produce impersonals compared to reflexives, and that the errors that have been found in previous literature in Italian are linked to the lack of binding of the moved internal argument with the clitic *si* (Belletti and Manetti 2019, Belletti 2020, Raminelli and Belletti 2021).

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[17] In fact, Topciu & Chesi (2019) check whether a purely distributional approach used in an automatic classification is able to correctly identify the type of *si*. Their classification is based on the position of the argument to which *si* is co-referent to, and it includes the following categories: (i) impersonal, (ii) local with the co-referent DP immediately preceding, (iii) local with the co-referent DP immediately preceding and modified by a PP or a relative clause, (iv) co-referent DP is post-verbal, and (v) the referent is absent and not retrievable from the context (i.e., mainly pro-drop cases). Such classification was not telling to us, given that the position of the co-referent DP is actually overlapping in different *si* functions, as in the case of reflexives (both true and inherent) and anticausatives.

Now, let us move to the comparison between impersonal *si* and the functions of impersonal *si* restricted to transitive verbs. As we saw from our results, instances of unambiguous passives were rarely produced by Italian children, and middles were even absent form children's productions. When we compare the derivation of these functions with the impersonal one, it becomes clear that the former require some additional machinery beyond what is needed for impersonal *si*. In impersonal with plural agreement (unambiguous passives), the fact that the verb has to agree with the plural internal argument – which, depending on the analysis, can either become the subject in a derivation similar to the one of traditional passive (as in Belletti 1982), or it can remain the object of the sentence while *si* acts as the nominative pronominal subject (as in Ormazabal and Romero 2019, 2024) – in addition to the fact that *si* has to block the external argument, constitutes a more complex operation than the one we hypothesized for impersonal *si*. This idea is supported by our results, in that children prefer to produce the default singular agreement in almost the totality of the cases. Moreover, it has been independently shown that Italian-speaking children do not productively use third person plural agreement before 2;6 (Caprin and Guasti 2009). Similarly, in middle constructions, *si* blocks the assignment of the external theta-role and triggers movement of the internal argument to the subject position, much alike to what we find in the derivation of traditional passives (Manzini 1986). Given that the operation underlying traditional passive is acquired in Italian around 3;6-4;0 (Guasti 2017, Manetti 2013, Manetti and Belletti 2015, a.m.o.), it is not surprising that children do not produce unambiguous cases of passive and middle functions at 3;4. However, our results seem to suggest that, although the syntactic derivation of these functions is not fully acquired yet, children already have access to the basic operations that can lead to them. Notably, they can move the internal argument to the pre-verbal position and they can produce plural agreement on the verb. In addition, they know that these operations can only be performed with transitive verbs. In sum, we could argue that they seem to use impersonal as a function to lead the way for passive/middle constructions. Thus, these observations support the approaches for which the impersonal, passive and middle *si* are not really distinct from each other (Cinque 1988, D'Alessandro 2007, Manzini 1986). One independent cross-linguistic observation seems to further reinforce this idea: in some languages where the passive constructions are not available, e.g. Ewe (a Niger-Congo language of the Kwa group), the passive meaning is realized via the use of impersonal constructions, as shown in (18).

(18) Ewe (Abigail Anne Bimpeh p.c.)
     wó   tu   aʃe   aɖe-wó.
     3PL   build houses   INDEF-3PL
     'They built some houses (lit.) = some houses were built'

In sum, we showed that impersonal *si* is syntactically the simplest derivation among all the functions of *si*. It is not surprising, then, that it is the most produced function by very young children in Italian. From an acquisition perspective, these findings seem to support a unified theory of *si*, in that multiple functions appear and are used at the same time. Furthermore, we suggest that the limited use or even absence of certain types of impersonal *si* is due to the need for children to acquire more complex derivations, which are only fully mastered as they grow older.

As a final remark, let us briefly focus on how unified *si* can be derived. To do so, we follow Manzini (1986)'s and Manzini et al. (2016)'s approaches. Hence, let us posit that *si* is an open (unsaturated) variable and is generated in the syntax as a clitic on a verb. As already discussed in Section 2.1, such a variable can be free or dependent and has a semantic role: that of saturating one argument. It can correspond to the interpretation of the external argument or the internal one of a transitive verb, to the external argument of an unergative verb, or to the internal argument of an unaccusative verb (Manzini et al. 2005). These interpretations are supplied at the LF interface, as shown in (19).

(19) Adapted from Manzini et al. (2016: 141 (46))
　　　 [y [V x]]
　　　 i   existential/generic closure → ($\exists$/Gen(eric)y, short passive/impersonal)
　　　 ii   agent = theme → (y = x, true reflexive, reciprocals)
　　　 iii   agent not interpreted → (anticausative)

In the case of transitive verbs, if the external argument variable is quantificationally closed through existential or generic closure (19i), impersonal, passive, and middle *si*s are derived. Alternatively, the variable can be reflexivized by identifying the internal and external argument (19ii). In this case, true reflexive and reciprocals are obtained. Finally, if the variable is not interpreted altogether (19iii), we obtain the anticausative reading. One function is still not captured under this approach, namely the inherent reflexive. Two basic proposals can be made here: one way to obtain the correct result is not generating the external argument y at all. Following this reasoning, the clitic is hence not generated in the syntax but only in the lexicon (Burzio 1986, Cinque 1988), meaning that this function indeed behaves differently from the others. The second one is that the argument is somehow generated but is not interpreted. Given the intricacy of the matter, we leave this question to future research.

7. Conclusions

In this paper we focused on the use of the clitic *si* in young Italian children through a corpus study. To our knowledge, this is the first study to investigate the acquisition and development of all functions of *si* in Italian. Our analysis suffers the limitation intrinsic to corpus searches: the number of children and the age range were limited, moreover contexts could not always help to disambiguate the function. Thus, our conclusions should be further explored via the use of experimental data, eliciting the production and comprehension of the different functions of *si*, even with older children. Nevertheless, our data show that children aged 1;8 to 3;4 use *si* productively and adult-like from a very early age and that they produce all its different functions (albeit at different rates): true and inherent reflexive, anticausative, and impersonal/middle-passive. Furthermore, the results suggest that some aspects of more complex structures – such as passive and middle *si* – have yet to be fully acquired. We claim that our findings support the view that *si* is the same element across all its different functions (in line with previous accounts by Manzini (1986) and Manzini et al. (2016)), and its interaction with principles of grammar produce its different uses or interpretations.

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Data availability

All materials, data, and statistical analysis scripts are available at https://doi.org/10.5281/zenodo.17592802.

References

Anderson, Raquel T. 1998. The use of reflexive constructions by Spanish-speaking children: Differences across functions. *Applied Psycholinguistics* 19(3): 489-512. https://doi.org/10.1017/S0142716400010298

Barrière, Isabelle, Lorch, Marjorie, & Marie Thérèse Le Normand. 2000. Argument structure alternation in French children's speech. In M. Perkins, & S. Howard (eds.), *New Directions in Language Development and Disorders* 139-147. Boston, MA: Springer. https://doi.org/10.1007/978-1-4615-4157-8_14

Barrière, Isabelle, & Marjorie Perlman Lorch. 2006. On the acquisition of ambiguous valency-marking morphemes". In V. Torrens, & L. Escobar (eds.), *The Acquisition of Syntax in Romance Languages* 41: 23-49. Amsterdam: John Benjamins. https://doi.org/10.1075/lald.41.03bar

Bates, Douglas, Mächler, Martin, Bolker, Ben, & Steve Walker. 2015. Fitting Linear Mixed-Effects Models Using lme4. *Journal of Statistical Software* 67(1): 1-48. doi:10.18637/jss.v067.i01.

Belletti, Adriana. 1982. Morphological passive and pro-drop: The impersonal construction in Italian. *Journal of Linguistic Research* 2(4): 1-34.

Belletti, Adriana. 2020. (Reflexive) Si as a route to passive in Italian. In L. Franco, & P. Lorusso (eds.), *Linguistic Variation: Structure and Interpretation*, 73-86. Berlin, Boston: De Gruyter Mouton. https://doi.org/10.1515/9781501505201-006

Belletti, Adriana, & Claudia Manetti. 2019. Topics and passives in Italian-speaking children and adults. *Language Acquisition* 26(2): 153-182. https://doi.org/10.1080/10489223.2018.1508465

Brown, Roger. 1973. *A first language: The early stages*. Cambridge, MA and London, England: Harvard University Press. https://doi.org/10.4159/harvard.9780674732469

Burzio, Luigi. 1986. *Italian syntax: A government-binding approach*. Dordrecht: Springer. https://doi.org/10.1007/978-94-009-4522-7

Campanini, Cinzia, & Florian Schäfer. 2011. Optional se-constructions in Romance: Syntactic encoding of conceptual information. Hand-out for a talk delivered at GLOW 2011.

Caprin, Claudia, & Maria Teresa Guasti. 2009. The acquisition of morphosyntax in Italian: A cross-sectional study. *Applied Psycholinguistics* 30(1): 23-52. https://doi.org/10.1017/S0142716408090024

Cennamo, Michela 2014. Passive and impersonal reflexives in the Italian dialects: Synchronic and diachronic aspects. In P. Benincà, A. Ledgeway, & N. Vincent (eds.), *Diachrony and Dialects: Grammatical Change in the Dialects of Italy*, 71-95. https://doi.org/10.1093/acprof:oso/9780198701781.003.0004

Chierchia, Gennaro. 1995. The variability of impersonal subjects. In E. Bach, E. Jelinek, A. Kratzer, & B. H. Partee (eds.), *Quantification in Natural Languages*, 107-143. Dordrecht: Kluwer Academic Publishing.

Chomsky, Noam. 1981. *Lectures on government and binding*. Berlin, Boston: De Gruyter Mouton.

Chondrogianni, Vicky. 2007. Acquiring clitics and determiners in child L2 Modern Greek. *Selected Papers on Theoretical and Applied Linguistics* 17(2): 356-366. https://doi.org/10.26262/istal.v17i2.5569

Cinque, Guglielmo. 1988. On si constructions and the theory of arb. *Linguistic Inquiry*, 19(4): 521-581.

Cipriani, Paola, Pfanner, Lucia, Chilosi, Anna Maria, Cittadoni, Lorena, Ciuti, Alessandro, Maccari, Anna, Pantano, Natalia, Pfanner, Lucia, Poli, Paola, Sarno, Stefania, Bottari, Piero, Cappelli, Giuseppe, Colombo, C., & Edy Veneziano. 1989. *Protocolli diagnostici e terapeutici nello sviluppo e nella patologia del linguaggio. Protocollo 1/84*. Ministero della Salute della Repubblica Italiana: Stella Maris Foundation.

Clark, Eve V. 1991. Acquisitional principles in lexical development. In S.A. Gelman, & J.P. Byrnes (eds.), *Perspectives on language and thought: Interrelations in development*, 31-71. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511983689.003

D'Alessandro, Roberta. 2007. *Impersonal "si" constructions*. Berlin, New York: De Gruyter Mouton.

D'Odorico, Laura, & Stefania Carubbi. 2003. Prosodic characteristics of early multi-word utterances in Italian children. *First Language* 23(1): 97-116. https://doi.org/10.1177/0142723703023001005

Doherty, Martin. J. 2004. Children's difficulty in learning homonyms. *Journal of Child Language*, 31(1): 203-214. https://doi.org/10.1017/S030500090300583X

Folli, Raffaella. 2002. Resultatives: Small clauses or complex VPs? In C. Beyssade, R. Bok-Bennema, F. Drijkoningen, & P. Monachesi (eds.), *Romance Languages and Linguistic Theory 2000: Selected Papers from 'Going Romance' 2000, Utrecht 30 November-2 December*, 153–170. Amsterdam: John Benjamins. https://doi.org/10.1075/cilt.232.10fol?locatt=mode:legacy

Gavarró, Anna. 2020. The acquisition of clitics in the Romance languages. In *Oxford Research Encyclopedia of Linguistics*. https://doi.org/10.1093/acrefore/9780199384655.013.656

Guasti, Maria Teresa. 2017. *Language Acquisition: The Growth of Grammar*. Cambridge, MA: MIT press.

Guasti, Maria Teresa. 1993/1994. Verb syntax in Italian Child Grammar: Finite and nonfinite verbs. *Language Acquisition* 3(1): 1-40. https://doi.org/10.1207/s15327817la0301_1

Hamann, Cornelia, Rizzi, Luigi, & Uli H. Frauenfelder. 1996. On the acquisition of subject and object clitics in French. In H. Clahsen (ed.), *Language Acquisition and Language Disorders* 14: 309-334. https://doi.org/10.1075/lald.14.13ham?locatt=mode:legacy

Heinen, Sabine, & Helga Kadow. 2010. The acquisition of French by monolingual children. A review of the literature. In J. M. Meisel (ed.), *Two First Languages*, 47-72. Berlin, New York: De Gruyter Mouton. https://doi.org/10.1515/9783110846065.47

Holmberg, Anders, & Ian Roberts. 2013. The syntax–morphology relation. *Lingua*, 130: 111-131.

Hsieh, Li, Leonard, Laurence B., & Lori Swanson. 1999. Some differences between English plural noun inflections and third singular verb inflections in the input: The

contributions of frequency, sentence position, and duration. *Journal of Child Language* 26(3): 531-543. https://doi:/10.1017/s030500099900392x.

Hyams, Nina M. (1983). *The acquisition of parameterized grammars*. PhD thesis, City University of New York.

Jakubowicz, Celia, Nash, Lea, Rigaut, Catherine, & Christophe-Loic Gerard. 1998. Determiners and clitic pronouns in French-speaking children with SLI. *Language Acquisition* 7(2-4): 113-160. https://doi.org/10.1207/s15327817la0702-4_3

Kayne, Richard. 1986. *Participles, Agreement, Auxiliaries,* Se*/*Si *and pro*. Ms., New York University.

Lebeaux, David. 1983. A distributional difference between reciprocals and reflexives. *Linguistic Inquiry* 14(4): 723-730.

Lenth, Russell. 2016. Least-squares means: The R package Lsmeans. *Journal of Statistical Software* 69(4): 1-33. https://doi.org/10.18637/jss.v069.i01

Lepschy, Giulio. 1986. Aspects of Italian constructions with *si*. *The Italianist* 6(1): 139-151. https://doi.org/10.1179/ita.1986.6.1.139

MacWhinney, Brian. 2000. *The CHILDES project: Tools for analyzing talk. The database*. Lawrence Erlbaum Associates Publishers

Manetti, Claudia. 2013. On the production of passives in Italian: Evidence from an elicited production task and a syntactic priming study with preschool children. In S. Baiz, N. Goldman, & R. Hawkes (eds), *Proceedings of the 37th annual Boston University Conference on Language Development*, 219–240.

Manetti, Claudia, & Adriana Belletti. 2015. Causatives and the acquisition of the Italian passive. In C. Hamann, & E. Ruigendijk (eds.), *Language Acquisition and Development Selected Proceedings of GALA 2013*, 282–298. Newcastle: Cambridge Scholars Publishing.

Manzini, Maria Rita. 1986. On Italian si. In H. Borer (ed.) *The Syntax of Pronominal Clitics* (Syntax and Semantics 18), 241–262. New York: Academic Press. https://doi.org/10.1163/9789004373150_011

Manzini, Maria Rita, Roussou, Anna, & Leonardo M. Savoia. 2016. Middle-passive voice in Albanian and Greek. *Journal of Linguistics* 52(1): 111-150. https://doi.org/10.1017/S0022226715000080

Manzini, Maria Rita, & Leonardo M. Savoia. 2005. *I dialetti italiani e romanci. Morfosintassi generativa.* Turin: Edizioni dell'Orso.

Martin, Fabienne & Sudha Arunachalam. 2022. Optional se constructions and flavors of applicatives in Spanish. *Isogloss. Open Journal of Romance Linguistics*8(4), 1-34. https://doi.org/10.5565/rev/isogloss.153

Mazzocco, Michèle M. 1997. Children's interpretations of homonyms: A developmental study. *Journal of Child Language* 24(2): 441-467. https://doi.org/10.1017/S0305000997003103

Morlacchi, Adriana, & Donatella Antelmi. 2005. L'interpretazione del linguaggio figurato nel ritardo mentale. *Rassegna italiana di linguistica applicata* 37(2): 355-380.

Napoli, Donna Jo. 1973. *The two si's of Italian*. PhD thesis, Harvard University.

Ormazabal, Javier, & Juan Romero. 2019. The formal properties of non-paradigmatic se. *Borealis: An International Journal of Hispanic Linguistics* 8(1): 55-84. https://doi.org/10.7557/1.8.1.4704

Ormazabal, Javier, & Juan Romero. 2024. Deconstructing se-constructions: Number agreement and postsyntactic variation. *Linguistic Inquiry* 55(3): 445-488. https://doi.org/10.1162/ling_a_00476

Pescarini, Diego. 2015. *Le costruzioni con si. Italiano, dialetti e lingue romanze*. Roma: Carocci Editore.

Pierce, Amy E. 1992. The acquisition of passives in Spanish and the question of A-chain maturation. *Language Acquisition* 2(1): 55-81. https://doi.org/10.1207/s15327817la0201_3

Prévost, Philippe. 2009. *The acquisition of French*. Amsterdam: John Benjamins.

R Core Team. (2013). R: A language and environment for statistical computing. Vienna: R Foundation for Statistical Computing.

Raminelli, Letizia, & Adriana Belletti. 2021. On the comprehension of (reflexive) si in preschool Italian-speaking children. *Research in Generative Grammar* 43.

Reinhart, Tanya, & Tal Siloni. 2005. The lexicon-syntax parameter: Reflexivization and other arity operations. *Linguistic inquiry* 36(3): 389-436. https://doi.org/10.1162/0024389054396881

Rizzi, Luigi. 1986. Null objects in Italian and the theory of pro. *Linguistic inquiry* 17(3): 501-557.

Schäfer, Florian. 2017. Romance and Greek medio-passives and the typology of Voice. In R. D'Alessandro, I. Franco, & Á. Gallego (eds.), *The Verbal Domain*, 129-152. Oxford: Oxford Academic Books.

Silleresi, Silvia, Chiara Dal Farra, Fabienne Martin, Yining Nie, Artemis Alexiadou, Maria Teresa Guasti. 2024. Does occluding the agent's body affect Italian children's production of argument structure? Talk delivered at GALA 2024.

Storkel, Holly L., & Junko Maekawa. 2005. A comparison of homonym and novel word learning: The role of phonotactic probability and word frequency. *Journal of Child Language* 32(4): 827–853. https://doi.org/10.1017/s0305000905007099

Teomiro, Garcia I. I., & Escobar Alvarez, M. A. (2013). The acquisition of dative "se" in L1 Spanish and its implications for the weak continuity hypothesis of acquisition of functional categories. *Revista Española de Lingüística Aplicada (RESLA)* 26: 475-490.

Tonelli, Livia, de Marco Anna, Vollmann, Ralf, & Wolfgang U. Dressler. 1998. Le prime fasi dell'acquisizione della morfologia. *Parallela* 6: 281-301.

Topciu, Kledia, & Cirstiano Chesi. 2019. Reflexives, impersonals and their kin: A classification problem. In R. Bernardi, R. Navigli, & G. Semeraro (eds.) *Proceedings of the Sixth Italian Conference on Computational Linguistics (CLiC-it 2019)*. CEUR.

Tsimpli, Ianthi Maria. 2003. Clitics and determiners in L2 Greek. In J. M. Liceras, H. Zobl, & H. Goodluck (eds.), *Proceedings of the 6th Generative Approaches to Second Language Acquisition Conference* (GASLA 2022), 331-339. Somerville, MA: Cascadilla Proceedings Project.