Parameter setting and acceleration

Subject omissions in a trilingual child with special reference to French

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The present contribution analyzes the acquisition of subjects in French based on a longitudinal case study of a trilingual child aged 2;8–3;2 who acquired French, Italian and Spanish simultaneously. The three languages vary with respect to the null-subject property; French is traditionally characterized as a non-null-subject language, while Italian and Spanish are prototypical null-subject languages. Argument subject omissions in French are ungrammatical but frequently observed in monolingual children in early acquisitional phases, as are ungrammatical postverbal subjects which cluster with null-subjects. Bilingual children acquiring French produce fewer subject omissions and postverbal subjects. The present study also finds an acceleration effect in the trilingual child. The results are interpreted in light of a parameter setting which accounts for different verb classes at different locations with which the null-subjects occur, giving rise to 'categorial CS' or 'congruent categorialization.'

Keywords: null-subjects, parameter setting, acceleration, trilingualism, French

1. Introduction

The null-subject parameter has been described both from a theoretical and from an empirical perspective with data from monolingual and multilingual children. Comparing Romance languages with each other, the null-subject parameter is particularly interesting because Italian and Spanish are among many languages that exhibit the null-subject property, whereas French is a classic non-null-subject language in traditional analyses. Monolingual children have been shown to recognize the null-subject parameter in Italian and Spanish very early and to set it rapidly, while this is not the case for French monolingual children when faced

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with the task of setting the parameter to the non-null-subject value (Patuto, 2012; Schmitz, 2007). Therefore, the relevant question is how multilingual children exposed to both parametric options acquire the (non-)null-subject property of their languages and whether or not they behave differently from monolingual children.

The study of multilingual (mostly bilingual) children has shown that the acquisition of grammatical properties may be subject to different types of crosslinguistic influence, such as acceleration (or delay) when compared to monolingual children: "Acceleration means that a certain property emerges in the grammar earlier than would be the norm in monolingual acquisition" (Paradis & Genesee, 1996: 3; cf. also Kaltsa, Tsimpli, & Argyri, 2019). Another type of influence is transfer, incorporating a grammatical property from one language into the other. Notably, when (argument) subject omissions[1] and ungrammatical postverbal subjects in French are considered, bilingual children are accelerated in comparison to monolingual children (Arnaus Gil, Stahnke, & Müller, 2021; Jansen, 2015). Our study of a trilingual child acquiring French, Italian and Spanish confirms that there is no negative crosslinguistic influence and that the child is accelerated in terms of residual subject omissions in French. By 'residual', we refer to the use of (infrequent) subject omissions at a point when subject realizations are predominant in the data (Schmitz, Patuto, & Müller, 2011). In a discussion of these results, we explore different explanations related to the verb types with which subjects are omitted. Specifically, verbs were considered according to grammatical person and stem morphology. It turns out that in French, the majority of verbs realized with null subjects morphologically mark the difference between first and third person. We therefore conclude that these verbs activate a kind of 'categorial mixing' or 'congruent categorialization', a process in which a grammatical category (not lexical material) is taken over from a null-subject language into French (in contrast to '*code* mixing' and 'congruent *lexicalization*' as introduced by Muysken, 1997).

In Section 2, we review crosslinguistic influence and code-mixing as typical contact phenomena in multilingual language acquisition. Section 3 presents the null-subject parameter, taking into account crosslinguistic differences, findings on its acquisition, and the theoretical perspective of the relevant parameter hierarchy. Our case study is presented in Section 4. Finally, in Section 5, we discuss the results and draw conclusions.

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1. Argument and non-argument (expletive) subject omissions must be distinguished in spoken French. Here, expletive subjects may be omitted with verbs like *falloir* 'must', in face-to-face spontaneous conversations between adult native speakers, while argument subjects are not omitted (Patuto, 2012: 231).

2. Contact phenomena in multilingual language acquisition: Crosslinguistic influence and code-mixing

Language acquisition in bilingual children who simultaneously acquire two languages from birth has been extensively described with respect to various morphosyntactic and phonological phenomena. Effects of (positive or negative) crosslinguistic influence have been identified and defined in terms of acceleration, delay or transfer (Lleó, 2016; Paradis & Genesee, 1996). Crosslinguistic influence in bilingual children has been observed, for example, in the acquisition of gender (Egger, Hulk, & Tsimpli, 2018) or the null-subject parameter (for an overview cf. Belletti & Guasti, 2015: 255–260). Such influence is explained by linguistic ambiguity and/or language dominance. However, the validity of language dominance for bilingual first language acquisition has been questioned (Hulk & Müller, 2000; Müller, 1998; Müller & Hulk, 2001).

The study of trilingual or multilingual children, who simultaneously acquire three or more languages, is still in its infancy (Quay, 2001: 149). Systematic studies on the acquisition of vocabulary and grammar are rare; the same pertains to grammatical theorizing, which explicitly sets apart the study of simultaneous trilingualism from both simultaneous bilingualism and third language acquisition, both of which have yielded different theoretical models based on empirical studies (Bardel & Falk, 2007; Flynn, Foley, & Vinnitskaya, 2004; Rothman, 2011). Although simultaneous trilingualism has long been treated as a mere extension of bilingualism (Barron-Hauwaert, 2000: 1), such an assumption leads to misconceptions. Even though bilingual and trilingual children are indeed similar in some respects, the two groups cannot be directly compared with each other, for example, when it comes to language dominance, because trilingual children are never assumed to be balanced across their three languages (Montanari, 2013: 63). Moreover, as input conditions are important in multilingual language acquisition, and trilingual children's input is divided into three, "trilingual children need to be considered as speakers in their own right" (Quay, 2011: 3). As a matter of fact, Quay (2008: 30) finds that 20% of a child's linguistic input is sufficient for the successful acquisition of a given language.

Research on trilingual language acquisition converges on the findings that it is possible to acquire three languages simultaneously and that the languages are successfully separate. Trilingual children acquire and differentiate their lexicons successfully and may even be accelerated, unlike bilingual children (Mikès, 1991; Montanari, 2009, 2010a,b). Likewise, studies on the acquisition of grammar find both syntactic influence and differentiation, for example in the use of gender, case-marking, preposition and conjunction (Hoffmann, 1985), subject-verb order (Maneva, 2004), pre- and post-modification (Kazzazi, 2011), and adjective posi-

tioning (Chevalier, 2015). However, most studies lack quantification of the data, which must therefore be interpreted with caution (Quay, 2001: 157). Recently, extensive work on longitudinal and cross-sectional data has shown that trilingual children are just as competent as bilingual children and in some respects even accelerated compared to monolingual (and bilingual) children, for example in the domains of copula and auxiliary selection (Arnaus Gil, 2013), gender (Hager, 2014), postverbal subjects in French (Arnaus Gil & Müller, 2018) and finite verbs in German matrix clauses (Arnaus Gil & Müller, 2020). None of the studies describe systematic and unequivocal crosslinguistic influence. If anything, such results cannot be attributed to language dominance. Montanari (2010a: 92) highlights the possibility that "increased input diversity leads the child to an enhanced language discrimination capacity and, in turn, to a heightened attention towards the structural properties of her [the child's] languages, thereby enhancing the course and timing of differentiation."

Apart from crosslinguistic influence, another contact phenomenon in multilingual language acquisition is code-switching (CS), introduced by Gumperz (1967), and first studied from a grammatical perspective by Poplack (1980). CS refers to the mixing of elements from two (or more) languages. Generally, code-mixing (CM) is used as a cover term to refer to a wide range of contact phenomena, whereas code-switching can be considered a smooth change between languages. As such, CS is clearly not a sign of lacking competence, but of a high degree of proficiency in both languages, indicating that multilingual speakers are able to behave multilingually (Müller et al., 2015: 24ff). Mixing may occur intrasententially, within a sentence or intersententially, between two sentences. According to MacSwan (2000: 43), "[n]othing constrains code switching apart from the requirements of the mixed grammars."

CS appears in a variety of different forms (smooth and flagged CS, cf. Poplack, 1987; motivated and performance CS, cf. de Bot, 2002). One influential approach characterizing different CS patterns is Muysken's (1997) taxonomy of alternation, insertion, and congruent lexicalization, corresponding to a continual decrease of speaker control and language separation (Treffers-Daller, 2009: 68).

In the research on CM in bilingual children, it has been argued that the direction of mixing is predictable in that children mix from their stronger into their weaker language (Bernardini & Schlyter, 2004). However, studies on bilingual children have shown that intrasentential mixing is quite rare and unrelated to language dominance. Patuto et al. (2014: 197) find a mixing rate of 2.42% in longitudinal studies of children between 1;6 and 5;0, while Müller et al. (2015: 109) report only 0.94% of mixing in a cross-sectional study of children between the ages of 2;6 and 9;9. Intersentential CM, on the other hand, is more frequent

and shows the expected directionality based on language dominance (Schmeißer, Eichler, Arnaus Gil, & Müller, 2016).

If mixing is related to language dominance, then trilingual children's mixing rates should be higher than those of bilingual children, since they are assumed to have two weak languages. However, as in bilingual children, intrasentential code-mixing is infrequent in children who acquire three languages (Chevalier, 2015; Hoffmann & Stavans, 2007; Quay, 2001). If intrasentential mixing is observed, it is due to lexical gaps (Montanari, 2010b; Quay, 2008). Language dominance appears to play a role in intersentential code-mixing (Poeste & Müller, 2020; Sivakumar, 2017), which constitutes another parallel to bilingual children. This result is not confirmed in other studies, where, instead, intersentential CM is observed from the typologically closer language (Poeste, Müller, & Arnaus, 2019). Poeste et al. (2019) and Poeste and Müller (2020) find an interesting relation between mixing and language dominance in terms of dimension- and domain-specific dominance (Birdsong, 2014).

3. The acquisition of the null-subject parameter

3.1 Pronominal subjects in French (and other Romance languages)

In null-subject or pro-drop languages such as Italian and Spanish, the position of the pronominal subject may be phonetically empty, whereas in non-null-subject languages like French and English, the subject position must be phonetically realized. In null-subject languages, null-subjects are the default in (information-structural) neutral contexts, and realized for pragmatic purposes like focus or topic shift. This major crosslinguistic opposition has been captured in generative terms by the null-subject or pro-drop parameter (Hyams, 1989; Rizzi, 2014). In Examples (1) and (2), the null-subject is represented by a phonologically empty pronoun, termed *pro*. Other syntactic analyses of null-subjects suggest that Spec is not projected because the EPP feature (Extended Projection Principle, cf. Section 3.3) in T (the head of Tense projection) can be checked by the finite verb (V_D); overt subjects in null-subject languages thus appear outside of TP (the Tense projection) in A'- (non-argument) positions (Alexiadou & Anagnostopoulou, 1998; for a critical overview with respect to Spanish cf. Suñer, 2001).

(1) It. pro *ho comprato un libro*
pro have-1p.sg. bought a book

(2) Sp. pro *he comprado un libro*

pro have-1p.sg. bought a book

(3) Fr. *J'ai acheté un livre*
I have-1p.sg. bought a book

(4) Eng. I have bought a book

The null-subject option clusters with other syntactic properties related to subjecthood, e.g. the lack of expletive subjects, subject extraction in *that-t-* (*that-trace*) contexts, and postverbal subjects in VO languages (Rizzi, 1982, 1986).

(5) It. pro *piove*
'(It) rains.'

(6) It. *Chi*$_i$ *credi che* t_i *abbia telefonato?* (from Rizzi, 1990: 62)
'Who$_i$ do you believe that t_i has phoned?'

(7) It. (Chi ha telefonato?) *Credo che abbia telefonato Gianni* (from Rizzi, 1990: 62)
'(I) think that has phoned John.' (= I think that John has phoned.)

In (5), *piove* is the only possible realization, since Italian disallows expletive subjects in impersonal constructions that exclude semantically non-empty subjects (e.g. with so-called 'weather verbs' like *piovere* 'to rain'). In null-subject languages, the subject position cannot be overtly realized by an expletive 'dummy' subject, as is the case in non-null-subject languages like French (*il pleut*) or English (*it rains*). Furthermore, the subject of complementizer phrases introduced by *that* may be extracted and raised beyond the complementizer in null-subject languages, yielding grammatical structures like the one exemplified in (6). Once again, this syntactic process is ungrammatical in non-null-subject languages. Finally, in null-subject languages with a VO structure like Italian or Spanish, the subject may appear in postverbal positions in given appropriate contexts (Example (7)). This possibility is ruled out in non-null-subject languages.

Unlike other Romance varieties, French has traditionally been analyzed as a non-null-subject language, i.e. pronominal subjects must be overtly realized (Example (3)). French has expletive subjects (Example (8a)), but interestingly, expletive constructions in spoken French may exhibit null subjects (Example (8b); Schmitz, 2007: 16f.; Schmitz & Müller, 2008: 22; Schmitz et al., 2011: 208f.). However, French cannot be considered a null-subject language, as this phenomenon is restricted to expletive subject pronouns. Furthermore, neither subject extraction in *that-t* contexts (Example (9a)) nor postverbal subjects (Example (10a)) are grammatical in French. Note, however, that constructions like (9a) can be saved by using the inflected complementizer *qui* composed by

que + Agr (Example (9b); Rizzi, 1990: 56; Pollock, 1997: 195). While the exclusion of subject extraction is categorical, postverbal subjects do appear in literary French, for example with inverted locative prepositional phrases, preposed adjectives, ergative verbs, impersonal constructions with expletive *il*, or stylistic inversion in interrogative sentences (Example (10b); Ferdinand, 1993). As the relevant register for these structures is highly unlikely in child-directed input, it is not expected that the contexts triggering postverbal subjects operate in the acquisition of French.

(8) a. Fr. *Il faut que tu fasses tes devoirs!*
It must that you do your homework
'You must do your homework.'
b. Fr. pro *faut que tu fasses tes devoirs!*
'(You) must do your homework.'

(9) a. Fr. *Qui_i crois-tu que t_i a téléphoné ?*
'Who do you believe that t_i has phoned?'
b. Fr. *Qui_i crois-tu qui t_i a téléphoné ?*
'Who do you believe who t_i has phoned?'

(10) a. Fr. (*Qui a téléphoné?*) **A téléphoné Jean*
'(Who has phoned?) (It) has telephoned John.'
b. Fr. *Quand est venu Jean?*
'When has come John?'

Romance languages nicely demonstrate the regularities predicted by the clusters of the null-subject parameter. As crosslinguistic analyses reveal, however, these properties do not perfectly match all languages described so far (Hyams, 2011; Müller & Rohrbacher, 1989). This is especially true for the presence or absence of expletive subjects and postverbal subjects in (non-)null-subject languages. The only generalization that holds crosslinguistically is the impossibility of subject extraction in *that-t* contexts in non-null-subject languages. This relation does not entail that all null-subject languages allow for extraction, since some do not (Finnish and Quechua are cases in point). A further complication is that not all languages are unequivocally either +pro-drop or –pro-drop (Holmberg, Nayudu, & Sheehan, 2009). A number of Northern Italian dialects, for example, may be characterized as partial pro-drop languages, since third person is systematically –pro-drop (Cardinaletti, 2014). Another case in point is Hebrew, which displays pro-drop asymmetries with respect to referentiality, grammatical person, and tense (Shlonsky, 2009).

It has been proposed in the literature that French should be analyzed as a null-subject language under the assumption that pronominal clitics are verbal

prefixes, at least in spoken French (Kaiser, 1992; Kaiser & Meisel, 1991; Zribi-Hertz, 1994; cf. Meisenburg, 2000 for a discussion). In this vein, subject pronouns would be inflectional elements without argument status functioning as agreement markers. Under such an account, French would figure as a null-subject language disallowing subject extraction in *that-t* contexts, like Finnish and Quechua, and allowing postverbal subjects in a very restricted register. Due to these reservations, we adhere to the analysis of French as a non-null-subject language.

3.2 Acquisition of pronominal subjects in French

Children acquiring a null-subject language like Italian or Spanish acquire this property very early and very quickly. Interestingly, this is also true for bilingual children who acquire Italian or Spanish alongside a non-null-subject language like French (Patuto, 2012; Schmitz, 2007). Monolingual French children do not acquire the non-null-subject property of their language in the same manner as children acquiring null-subject languages. In fact, obligatory subjects in French are frequently omitted in early acquisition phases (Example (11)). In this context, we define acquisitional phase as a period in terms of mean length of utterance (MLU; Arnaus Gil & Müller, 2019; Brown, 1973) or age in which a specific grammatical property is predominantly used.[2] Jansen (2015), comparing the acquisition of French subjects by monolingual French and bilingual French-German children, argues that subject omission drops below 15% only after children have reached an MLU of 2.0–4.49. Jansen looked closely at MLU intervals in steps of 0.5. Her results indicate that there is some variation among the children since the differences in MLU are quite large at this phase. At the same time, monolingual children frequently produce ungrammatical postverbal subjects (Example (12); Déprez & Pierce, 1993; Prévost, 2009: 50; Rasetti, 2003: 151f.).

(11) Fr. **Sais pas* (Di_fis, 3;8,24)
'(I) know not'

(12) Fr. **Veut encore Adrien du pain* (Grégoire, 2;1,3) (Déprez & Pierce, 1993: 42)
'Wants still Adrien bread'

Bilingual children acquiring French also produce null-subjects, but overcome this phase earlier than monolingual children (MLU 1.5–3.49). In Jansen's (2015) study, the rate of omission in monolinguals constantly exceeds that of bilinguals between MLU 3.0 and 4.49, at a significant level between 3.0–3.49 and 4.0–4.49.

2. For a distinction between 'acquisitional phase' and the notion of 'stage' cf. Section 5.

Furthermore, bilingual children rarely produce postverbal subjects in French compared to monolingual children. These results are corroborated in a cross-sectional study by Arnaus Gil and Müller (2018), testing 62 children who acquire French in a bilingual or multilingual setting (i.e. more than two languages) and are also found in children who acquire a null-subject language like Italian or Spanish along with French, i.e. a language which permits postverbal subjects. Interestingly, in multilingual children, these findings do not seem to be linked to language dominance. Multilingual children seem to skip the phase of postverbal subject production in French. In addition, they produce fewer ungrammatical null-subjects and progress from this phase earlier than monolingual children do. These results, related to the clusters of the null-subject parameter, point to an acceleration effect.

Language acquisition studies have emphasized the role of pragmatics for the concrete realization of subjects. There is an interesting relation between 'odd' residual subject omissions in non-null-subject languages like French (Example (13)), where subjects should be realized, and 'odd' residual subject realizations in null-subject languages like Italian (Example (14)), where pronominal subjects are expected to be omitted in neutral contexts. In both conditions, these subjects appear syntactically in the third person in both conditions (Patuto, 2012; Schmitz, 2007; Schmitz et al., 2011: 218–221). These structures are explained by universal strategies of discourse licensing and are maintained until relevant discourse knowledge has been acquired.

(13) Fr. *Va mettre dans le frigo* (Amélie, 3;3,11, French-German)
'(I) will put into the fridge.'

(14) It. *Io non è stupido* (Aurelio, 2;6,11, Italian-German)
'I not is stupid.'

3.3 Parameter hierarchy

Traditionally, parameters have been conceived of as grammatical options of a principle of Universal Grammar that need to be set based on linguistic experience (Chomsky, 1981). The null-subject parameter expresses the different possibilities to satisfy the EPP feature of natural languages (the Extended Projection Principle, positing that every sentence must have a structural subject position). Parameter setting has been explained through the concepts of the switch metaphor and subroutine as well as dual-value settings (Haider, 1993; Valian, 1990).

As seen above, children who acquire a null-subject language set the parameter very early, unlike children who acquire a non-null-subject language, wherein the acquisition process is more gradual. These differences can be captured by

the diverging evidence in the linguistic input, which gives rise to different paths in parametrization: in null-subject languages like Italian and Spanish, positive evidence in the linguistic input allows the child to set the null-subject parameter much like a switch. On the other hand, in a non-null-subject language like French, where evident triggers are missing in the input, acquisition requires more time. With respect to parametrization, the null-subject parameter cannot be 'switched' but rather evolves gradually. These facts seem rather puzzling, because French consistently has explicit subjects, while the presence of both overt and null subjects in Italian and Spanish provides more variable input. Importantly, in language acquisition, children have to rely on positive evidence. We have seen above that the clustering properties of the null-subject parameter are not unequivocal: there are null-subject languages which allow expletive subjects, and in French (a non-null-subject language), expletive subjects are often omitted. Postverbal subjects in free variation with the preverbal position in VO languages (Leonetti, 2018) are non-existent in French. Finally, subject extraction in *that-t* contexts may be rare in the input of null-subject languages but provides clear evidence, which is also completely absent in French (as it is ungrammatical). While the frequency of these constructions in child-directed input is unknown, even very few instances of a given grammatical property may serve as triggers (Gibson & Wexler, 1994). Due to these missing triggers in French, children take longer to set the parameter accordingly than in null-subject languages like Italian or Spanish, which present ample positive evidence.

Still, the issues of the nature and locus of parameters, their interactions with each other, where they are expressed and other properties, are far from theoretically settled (Rizzi, 2014). Biberauer, Holmberg, Roberts, and Sheehan (2014: 209) suggest a taxonomy of parameters, including macroparameters, mesoparameters, microparameters and nanoparameters. Within this hierarchy, macroparameters express that all (functional) heads share a value of a parametrically variant feature. Mesoparameters relate to all (functional) heads of a given naturally definable class, such as [+V]. Next, microparameters identify a subclass of functional heads, for example auxiliaries. Finally, nanoparameters specify only one or few lexical individual items.

This typological hierarchy gives rise to the distinction between different language types (Biberauer et al., 2014: 112ff). The relevant question for macroparametric variation with respect to null arguments is whether all heads license null arguments. If they do, we have a radical pro-drop language like Chinese or Japanese. If not, the next question, at the mesoparameter level, is whether only a subclass of heads (e.g. finite T) licenses null arguments. At this level, the null-subject property is parametrized, with a positive value for Italian and Spanish and a negative value for French. Going further down the hierarchy,

partial pro-drop languages are subject to microparametric variation. When only individual lexical items display the relevant grammatical property, the parameter is set at the nanoparametric variation level. The value of (non-)null subject languages acquired by the trilingual child in our study is set at the mesoparameter level.

4. The study

The aim of this empirical work is to examine subject omissions in a trilingual child living in France, who acquired French, Italian and Spanish simultaneously. For this purpose, the acquisition of the null-subject parameter is examined both quantitatively and qualitatively in a longitudinal study from age 2;8 until 3;2. According to Patuto (2012: 238), from the point of view of language development, the period between two and four years is significant for the acquisition of the subject and represents decisive data for the acquisition of the subject. Our data contain 976 utterances with a finite verb in French.[3]

For the present empirical study, longitudinal data from the simultaneous trilingual child named "Di_fis" were examined by Scalise (2020). His mother is Spanish, his father is Italian. At the time of recording the family lived in Paris. At home, Di_fis speaks to his mother in Spanish, to his father in Italian, and to the nanny in French. The family languages are therefore Italian and Spanish and the environmental language is French. Twenty-minute recordings were made at regular two-week intervals at the child's home. During the recordings, Di_fis's age was between 2;8 and 4;9 (but the data were only analyzed until 3;2 for the purpose of our study). Recordings were conducted by a native speaker in all three languages. This empirical analysis includes recordings in which Di_fis has an MLU between 2.50 and 4.49.

MLU development by Arnaus Gil and Müller (2019: 38) to determine the degree of language proficiency shows that Spanish is Di_fis's weakest language.[4] The MLU values in Spanish are below the values of the environmental language, French, and of Italian (Scalise & Sivakumar, 2019: 186). DMLUD[5] analysis (Arnaus Gil & Müller, 2019: 39 with reference to Müller et al., 2015: 63) shows

3. The corpus of analyzed French utterances can be accessed at https://www.mehrsprachigkeit.uni-wuppertal.de/de/publikationen/codings-of-child-data.html

4. Analyzed by Elena Scalise.

5. Based on the average MLU difference, the child's degree of balance is examined over the entire examination period and classified in sub-categories of degrees of balance (Müller, 2016: 73).

that French is superior to Spanish in the data, and the relation between the two languages is considered to be unbalanced. Italian and French are instead balanced with a tendency, while the relationship between Spanish and Italian is considered strongly balanced (Arnaus Gil & Müller, 2019: 39 with reference to Müller et al., 2015: 63).

4.1 Hypotheses

Based on the observations in bilingual and trilingual children as described in the literature, we assume that, firstly, crosslinguistic influence should not be observed in trilingual children's acquisition of the null-subject parameter. When transfer effects have been found, these appear to be occasional, unsystematic and unrelated to language dominance. Secondly, we expect that trilinguals are on a par with bilinguals in terms of acceleration (as defined in Section 1) compared to monolinguals. In fact, the increased diversity of linguistic input may lead to an acceleration effect (Montanari, 2010a: 92), which should qualitatively set trilingual children apart from monolingual children (and possibly also from bilingual children). Consequently, the following hypotheses are examined:

1. **No crosslinguistic influence** occurs in the trilingual child with respect to subject omissions in French, i.e. we expect that Di_fis would produce subjects in French despite acquiring two null-subject languages simultaneously along with French.
2. An **acceleration effect** occurs in the trilingual child with respect to subject realizations in French, i.e. we expect that Di_fis, like bilingual children, would outperform monolingual children in the acquisition of subjects, despite the fact that he is confronted with reduced linguistic input.

Below, we present the results of our case study in terms of quantitative and qualitative aspects of subject realizations and omissions in French in order to evaluate these hypotheses. The production of postverbal subjects, which are related to the null-subject parameter, is also considered. Specifically, target-deviant subject omissions are examined with respect to grammatical person and morphological verb classes.

4.2 Results

4.2.1 *Quantitative aspects of subject realizations and omissions*

The French data comprise 858 subject realizations[6] and 118 instances of a lack of a subject during the four MLU-phases studied. The subjectless utterances were classified into target-deviant omissions (57 utterances, TD), target-like (expletive) omissions (7 utterances, TL), and imperatives, in which a lack of a pronoun is accurate (54 imperatives). We did not take into account the 54 imperatives in our linguistic analysis, since their finiteness is questionable and since they display different syntactic properties in French, like subject omissions (*attends !* 'wait!' in recording 2, age 2;8,24) and subject realizations (*mais attends toi !* 'but wait you!' in recording 11, age 3;1,0, probably focusing the subject), and the order of subject clitics (*donne-le-moi !* 'give it me', which shows that the object clitic *le* follows the imperative, whereas it obligatorily precedes it in finite declarative structures, like *je le donne à Marie* 'I it give to Mary').

Although Di_fis acquires two null-subject languages and one non-null-subject language, Figure 1 (in the online appendix) clearly shows that the child realizes the subject in French from the beginning of recordings at 84.6% (33 utterances), and subject use increases to 96.8% (90 utterances) by the last MLU-phase. A similar observation can be made for the two null-subject languages, not displayed in Figure 1: in both Italian and Spanish Di_fis often omits the subject from the beginning of recordings. During an MLU-phase of 1.5–1.99 he already drops the subject in both null-subject languages in over 70% of all contexts (cf. Figures 2 and 3 in the online appendix). In other words, the two null-subject languages sharply contrast with French from early on. In both Italian and Spanish, Di_fis shows rich verb inflection and target-like subject-verb agreement from the beginning of the recordings. He uses 173 verb types in Italian and 155 verb types in Spanish overall.

In the first MLU-phase, the subject is realized in 33 of 39 utterances. Out of a total of six omissions, three are target-like and three are target-deviant. In the final MLU-phase of 4.00–4.49, the rate of target-deviant omissions is as low as 1.1% (1 utterance) and target-like omissions are extremely infrequent (2.1%, 2 utterances). A comparison of the two omission rates also shows that the child tends to omit the subject in a target-like way.

Next, we compare the trilingual child with the mono- and bilingual children in Jansen (2015; Section 3.2). For this purpose, Di_fis's null-subject rate was

6. Realized subjects constitute DPs, nominal subjects, like proper names, strong pronouns, clitic pronouns, and so-called proto-forms.

incorporated in Jansen's figure of monolingual and bilingual children who acquire French (2015: 258), as shown in Figure 4 (in the online appendix).

The thick dotted line shows the development of French null-subjects of the trilingual child in our study. At first glance, the comparison shows that Di_fis not only has fewer null-subjects than the monolingual children Léonard, Madeleine and Philippe, but that his subject omissions are also less frequent than those of the bilingual children Céline, Emma and Marie. Di_fis has more null-subjects than the bilingual child Alexander only in one MLU-phase (2.50–2.99) and in the first three MLU-phases when compared to the bilingual child Amélie.

Whereas Di_fis has an omission rate of 8.3% in MLU-phase 2.50–2.99, the monolingual child Léonard omits over 20% of the subjects in the same phase. Jansen (2015: 258) showed that monolingual children reach the end of the null-subject phase in French only between an MLU of 2.0 and 4.49. Di_fis reached this phase prior to the period of study, as his null-subject rate is already at 8.3% during the first MLU-phase. Moreover, bilingual children achieve significantly fewer null-subjects than monolinguals in MLU-phases 3.0–3.49 and 4.0–4.49 (Jansen, 2015: 258). In all four MLU-phases, Di_fis also realizes fewer null-subjects than the monolingual children. Thus, Di_fis, like the bilingual children, performs better than the French monolingual children in all MLU-phases. In the last MLU-phase, from 4.0–4.49, Di_fis even omits the subject less (1.1%) than all other children examined in this study.

4.2.2 *Qualitative aspects of subject realizations*

Next, the syntactic categories of French subject realizations were examined, using the following five syntactic categories:

1. Ambiguous pronouns:[7] *là elle est Mimi* (Di_fis, 2;8,24)
2. Clitic pronouns: *je veux légo* (Di_fis, 2;8,24)
3. Strong pronouns: *moi mange* (Di_fis, 2;9,4)
4. Proto-pronouns:[8] *l'était bon* (Di_fis, 2;8,24)
5. Flexive pronouns: *c'est toi qui*[9] *racontes* (Di_fis, 3;2,22)
6. Proper names: *Mimi est là* (Di_fis, 2;8,24)
7. DPs: *Un chat qui mange quoi ?* (Di_fis, 3;2,22)

Of a total of 858 subject realizations, 827 are subject pronouns and 31 are lexical nominal subjects like proper names (*Mimi est là*) and DPs (*un chat qui mange*

7. Clitic or strong pronouns like *elle, nous, vous*

8. ([i], [ɛ], [l]), phonetically reduced forms

9. It has been argued that *qui* is an agreeing complementizer since it can only occur if the subject of the clause is empty. Rizzi (1990: 56) argues that *qui* is composed by *que* + Agr.

quoi ?). The ranking of the realized pronouns is as follows: clitic pronouns > ambiguous pronouns > proto-pronouns > strong pronouns > flexive pronouns (Figure 5 in the online appendix).

The trilingual child realizes clitic forms at more than 65% during the entire study period. In MLU-phases 3.00–3.49 and 3.50–3.99, he realizes clitics at 70%. The second most realized category is the ambiguous pronouns, which the child realizes up to 15% at the beginning of recordings. Their rate rises up to 21%, then drops again to 16% at MLU-phase 3.50–3.99, and eventually rises again to 21%. In contrast to clitics and ambiguous forms, the realization rate of proto-forms decreases from 15% to 8%. In addition to clitics, ambiguous – and proto-forms, Di_fis also realizes strong and flexive pronouns at the age of three years. However, these pronouns are realized less frequently (<5%). The number of strong pronouns is low and fluctuates. While strong pronouns are realized in each MLU-phase, the flexive forms appear in only two MLU-phases (3.00–3.49 at 1%, 3.50–3.99 at 0.30%). To sum up, clitics dominate from early on.

4.2.3 *Position of subjects*

Of the 858 subject realizations, 852 contain a preverbal and only six a postverbal subject. Figure 6 (in the online appendix) illustrates the rare occurrence of postverbal subjects. The trilingual child realizes French subjects at 99.30% in preverbal position. Only 0.70% of postverbal subjects were found. Table 1 (in the online appendix) shows the few utterances with a postverbal subject, all ungrammatical in adult French.

4.2.4 *Qualitative analysis of empty subjects*

Further empirical analysis focused on the 57 target-deviant French null-subjects. For this analysis, we sorted the target-deviant subject omissions by grammatical person. Out of the 57 target-deviant null-subjects, 55 are person-specific.

Figure 7 (in the online appendix) shows that subject omission occurs especially in first and third person singular subjects. In comparison to all target-deviant subjects, Di_fis omits first and third person subjects at 50% and 46%, respectively. In relation to the associated person-specific subject realizations, omission occurs in first person subjects at 14.8% (27 null-subjects) and in third person subjects at 13.2% (25 null-subjects). Again, first and third person singular are clearly more affected than the second person singular, which is extremely rare in the data.

Next, we divided the realized verbs into three groups. Group A represents verb forms which do not morphologically mark agreement with the subject in spoken French (Ågren, 2013: 3). Verbs of this group have one morphological form

in all persons, except for the second person plural (Krumreihn, 2019: 46).[10] Group B shows verb forms with stem alternation distinguishing third person singular and plural (Ågren, 2013; Krumreihn, 2019: 46). Lastly, group C comprises suppletive forms of the verbs *être, avoir, aller,* and *faire*. These verbs are extremely frequent and exhibit the widest morphological variety (Krumreihn, 2019: 46). Table 2 (in the online appendix) presents an example from the data of this study for each verb class.

As shown in Figure 8 (in the online appendix), 14.0% ($n = 8$) of the 57 null-subjects comprise verbs from group A. Null-subjects with group B verbs amount to 38.6% ($n = 22$). Group C verbs were realized as often as 47.4% ($n = 27$). *Avoir* was additionally used for the formation of the *passé-composé* and the semi-auxiliary verb *aller* was often used for the formation of the periphrastic future.

A detailed examination of the null-subjects shows that group A verbs were used only in MLU-phases 3.00–3.49 and 3.50–3.99. The number decreases from five to three in MLU-phase 3.50–3.99. In sum, target-deviant subject omissions mainly occur with verbs from groups B and C, which mark number and person morphologically. They are nearly non-existent with verbs from group A, which do not exhibit an audible marking for number or for grammatical person.

5. Discussion and conclusions

Based on the results presented in Section 4.2.1., hypothesis 1 is confirmed: Di_fis produces subjects in French as early as MLU-phase 2.5–2.99, at a rate of 84.6%, which gradually increases up to 96.8% at MLU-phase 4.0–4.49. At this point, target-deviant subject omissions become virtually non-existent (1.1%; $n = 1$). Moreover, analysis of Di_fis's two null-subject languages, Italian and Spanish, shows early target-like rates of subject omissions around 70% (MLU-phase 1.5–1.99). If crosslinguistic transfer was involved, subject omission rates in French would be markedly higher. Taken together, these numbers indicate that Di_fis successfully separates his three languages with respect to subject realizations and omissions from the outset of the period studied.

In terms of qualitative aspects of subject realization, Di_fis's preference for clitics (cf. Section 4.2.2.) is in line with the acquisitional path found for multi-

10. First person plural is frequently substituted by third person singular with *on* in spoken French. Thus, instead of *nous dansons*, French speakers use *on danse*. We can conclude that this person does not have a specific phonetic form (Krumreihn, 2019: 46). The form of the second person plural is homophonous with the infinitive, i.e. *vous dansez* is pronounced [vu|dã|se], like the infinitive *danser* [dã|se].

lingual children in a cross-sectional study by Arnaus Gil et al. (2021), according to which children produce (proto-)clitics at around three years of age as the preferred subject spell-out after a period of subjectless utterances. DPs and indefinite subject pronouns only occur at around age five. The case study of Di_fis covers an age span between 2;8 and 3;2. Importantly, the rate of Di_fis's proto-clitics drops from 15% in the first MLU-phase down to 8% in the last MLU-phase. As shown above, DPs and proper nouns are as yet rare in Di_fis's corpus (31/858 realized subjects = 3.6%). Arguably, these spell-outs should be expected as the preferred variants in Di_fis's further development.

Our second hypothesis is also confirmed. The results clearly point to an acceleration effect, which has already been established for bilingual children (cf. Section 4.2.1.). Di_fis exhibits fewer null-subjects than monolingual children acquiring French, for example, at an early MLU-phase (2.5–2.99), his rate is as low as 8.3%. During the same phase, some monolingual children drop obligatory subjects in well more than 20% of the required syntactic contexts. Once again, these findings suggest that target-like acquisition of subject realization and omission in French has already been achieved before an MLU of 2.5 in Di_fis, whereas in monolinguals this is achieved only at an MLU-phase between 2.0–4.49. When individual multilingual children are compared to each other, it is interesting to note that Di_fis also performs better than some of the bilingual children. At an MLU between 4.0–4.49, he even displays the best results of the lot, which corroborates an acceleration effect, possibly also with respect to bilingual children.

Another factor put forward in the literature which underpins the acceleration effect is that (ungrammatical) postverbal subjects in French as found in monolingual children are not attested to the same degree in multilingual children (cf. Section 3.2). The analysis of Di_fis's data fits perfectly into this picture as his rate of postverbal subjects is very low: overall, he produces only 0.7% ($n=6$) of them (cf. Section 4.2.3.). More specifically, his postverbal subjects occur predominantly when subject omission rates are relatively high (recordings 5, 7 and 12 corresponding to MLU-phases 3.00–3.49 and 3.50–3.99). Even though both the numbers of postverbal subjects and subject omissions are very low, we may tentatively conclude that this result may be taken as further evidence for successful language separation in the trilingual child since postverbal subjects cluster with the pro-drop property (cf. Section 3.1). Furthermore, almost all postverbal subjects contain a verb of groups B or C, which correlate with subject omissions (see below).

To summarize, we find no negative crosslinguistic influence with respect to subject omissions in French; furthermore, Di_fis is accelerated in this domain compared to monolingual (and possibly also to bilingual) children. These results are in line with studies that have examined the acquisition of grammar in trilin-

gual children. Our interpretation of the data supports Montanari's (2010a) idea that reduced input is not a problem in trilingual language acquisition, but that diversified input can be advantageous (cf. Section 2).

The theoretical question which emerges from our study is how to account for the observed subject omissions, however low in number. To pursue this issue, we looked more closely at the verbs which have been used with null-subjects. Subject omissions are virtually only produced with first and third person singular, each constituting roughly half of all illicit subject omissions in the entire corpus, and making up 13–15% of all respective person-specific subject realizations. Null-subjects with other grammatical persons (2 sg., 1 pl.) occur very rarely. From a quantitative perspective, there does not seem to be any difference between subject omissions in the first and third person singular. However, qualitative analysis of individual recordings reveals that omissions in the third person singular are more spread across the recordings when compared to omissions in the first person singular. For example, in the two last recordings, all omissions correspond to the third person singular. A second observation is that third-person omissions, more frequent than first-person omissions, constitute 100% of all null-subjects per recording. We may cautiously interpret these data as further evidence in support of the finding that residual subject omissions in French correspond to the third person, and can be explained by the gradual acquisition of pragmatic knowledge related to the C-domain (cf. Section 3.2).

Another possible explanation is verb morphology. The results presented in Section 4.2.4. show a substantial tendency for subject omissions to occur with verbs that have an audible stem alternation in the third person singular and plural (group B) as well as with verbs with suppletive stems (group C). In fact, group C verbs make up almost half of all empty subjects (47.4%) and group B verbs constitute another 38.6%. Omissions with group A verbs are comparably rare in the data (14.0%; $n=8$) and only occur during two MLU-phases. In adult spoken French, verbs with an audible stem alternation make up only 9.6% of all verbs in terms of types (Marty, 2001), i.e. group A verbs constitute the majority. However, when verb tokens are considered, groups B and C verbs are very frequent, since a number of auxiliary verbs, modal verbs, and common lexical verbs belong to these categories (Ågren, 2013: 2f.).

The fact that target-deviant subject omissions principally occur with verbs that have audible stem alternation or suppletive stems invites the conclusion that verb morphology leads to a kind of categorial switch in the trilingual child, which induces a grammar typical of null-subject languages within a non-null-subject language. In the non-null-subject language French, the finite verb (V) in T requires a DP in the subject position which checks the EPP feature. In contrast, in null-subject languages like Italian and Spanish, the verb (V_D) allows for null-

subjects, i.e. V_D can check the EPP feature located in T. In French, group A verbs without specific morphological information do not trigger a syntactic null-subject derivation. In contrast, verbs in groups B and C involve morphological change and may trigger a different syntactic analysis in the trilingual child. Even though he has successfully acquired both the null-subject property of Italian and Spanish and the non-null-subject property of French (see above), the morphological shape of verbs in groups B and C in adult French may support the choice of a V_D in an otherwise French structure which is legitimate with groups B and C verbs from the child's perspective and entails a derivation that is compatible with null-subject languages. This reasoning may explain why Di_fis's target-deviant subject omissions in French occur with groups B and C verbs in the vast majority of cases (more than 80% altogether), given that French input offers much evidence in favor of V_D verbs.

How can we theoretically capture this kind of syntactic derivation in which the multilingual child incorporates the grammatical category of one of his languages (V_D) with the syntactic consequences of one category (which legitimizes a null-subject) into another (which, in the general case, does not legitimize null-subjects)? We have argued above that crosslinguistic transfer should be excluded as an explanation, on the basis of the language-specific omission rates found in Di_fis's three languages. In many respects, the process resembles code-switching (cf. Section 2), albeit without directly taking over lexical material from the other language(s). As MacSwan (2000) puts it, CS must adhere to the grammar of the switched element. This is exactly what happens in the syntactic derivation of illicit null-subjects in French, according to our theoretical proposal outlined above. V_D licenses null-subjects, and when the morphological characteristics of groups B and C verbs in adult French support the choice of V_D in child grammar, Di_fis uses null-subjects, which are ungrammatical in French, but are compatible with the grammar of the incorporated syntactic derivation of one (or both) of his null-subject languages, Italian and/or Spanish. On Muysken's (1997) scale of CS types, this analysis mostly patterns with congruent lexicalization, the parallelizing of structures between two languages (cf. Section 2). However, the relevant process here is not lexicalization, but rather 'categorialization', since it is a grammatical category (instead of a stretch of lexemes) that is taken over from another language.

Unlike classical CS phenomena, however, Di_fis's use of null-subjects in French cannot be characterized as controlled but as highly spontaneous. At most, it corresponds to smooth CS or performance CS (Poplack, 1987; de Bot, 2002; cf. Section 2), as the target-deviant subject omissions are naturally neither flagged nor motivated. If Muysken's (1997) pattern of congruent lexicalization (or 'catego-

rialization') is crucial, this in fact includes the smallest degree of speaker control and language separation (cf. Section 2). Therefore, we may not infer 'grammatical code-mixing' or something similar for what we observe in the data. We suggest the term 'categorial code-switching' or 'congruent categorialization', since what is switched in these contexts is a grammatical category: V_D is switched from Italian/Spanish and incorporated into French under the consideration of the rules formulated for actual CS. The reason for trilingual children to resort to CS of a category may be the same as those that have been established for crosslinguistic transfer, considering that morphologically marked verbs in the sense of groups B and C verbs of French present ambiguous input to the child.

Turning to the relevant mesoparameter described in Section 3.3, we are now in a position to link the observed acceleration effect to the framework of Universal Grammar. We assume that once the null-subject parameter is set in one of Di_fis's three languages, all language-specific parametrizations have to be carried out, since there is only one computational system in the (multilingual) individual (cf. MacSwan, 2000). Our data has confirmed previous research with respect to the position that the null-subject parameter is set early and without difficulty in Italian and Spanish. Consequently, the non-null-subject value of French is set along with the Italian and Spanish specifications, considerably earlier than in monolingual children acquiring French. Multilingual children thus provide excellent case studies to pursue questions related to parameter theory: "If it were possible to experiment on languages, a syntactician would construct an experiment of the following type: take a language, alter a single one of its observable syntactic properties, examine the result to see what, if any, other property has changed as a consequence" (Kayne, 2000: 5). The multilingual child Di_fis rarely uses (nano)particular items with a syntactic category which licenses a null-subject in non-null-subject French. The same (nano) items occur, although again extremely rarely, with postverbal subjects. It is in this sense that acquisitionists have become observers of a possible experiment on languages and parameters.

It seems that Di_fis is successful in setting the correct value for French, possibly because he receives sufficient input and acquires his three languages under favorable conditions. These conditions allow him acceleration in French. Note that delay is also possible in multilingual children, when forced to set a parameter but failing to do so correctly (Müller, 1993). The issue of determining what kind of input is needed to trigger parametrization is beyond the scope of our study. We assume that in this context qualitative rather than purely quantitative criteria would be decisive (cf. Arnaus Gil, Müller, Sette, & Hüppop, 2020 for discussion), as the amount of input in trilingual children is divided by three, yet they can be accelerated compared to monolinguals. According to this analysis, acceleration (or delay) depends not only on input conditions etc. but crucially

also on which languages are acquired. It is in this sense that increased input diversity (Montanari, 2010a) can lead to acceleration: if the parameter of one language is set early, the acquisition of the corresponding property in other language(s) may be accelerated.

We have argued that Di_fis erroneously 'category-switches' French verbs of groups B and C with the Italian/Spanish verbal category V_D, resulting in target-deviant subject omissions. In other words, his French superficially resembles a partial pro-drop language, which is parametrized at the microparameter level (Biberauer et al., 2014). However, since subject omissions in French are very infrequent, we attribute them to multilingualism and not to a parametric option, i.e. to variation within the setting of the mesoparameter. It is at this point that the V/V_D distinction becomes relevant in Di_fis's grammar and that categorial CS may take place (Scalise, 2020). Given the importance of multilingualism for potential linguistic change, "a child's brain may grow a grammar somewhat different from that of her mother" (Lightfoot, 1999: 74) by applying categorial CS.

A final conclusion which may be drawn from our case study concerns acquisition stages. We have defined phases as MLU or age periods during acquisition from a purely descriptive perspective (cf. Section 3.2). Stages, on the other hand, have been defined as the "movement from one grammar to another" (Roeper, 1999: 183), including the possibility that "a child retains an earlier stage when they move to a later stage" (ibid.). Descriptions of stages in language acquisition are typically based on monolingual children as the comparative reference for multilingual language acquisition. The linguistic development of monolingual French children shows a stage of null-subjects and postverbal subjects (cf. Section 3.2). In bilingual and trilingual children, however, these stages are not observed: in fact, Di_fis produces very few null-subjects and hardly any postverbal subjects (cf. Section 4.2). How can we relate these findings to the concept of stage? In the context of residual target-deviant subject omissions in French, Di_fis's data are compatible with the view that children maintain earlier stages. From a global perspective, however, the concept of stage as such is questionable in multilingual language acquisition, since multilingual children do not go through the stages as established for monolinguals. Acceleration in this sense may be defined as the absence of stages, which corresponds to Continuity approaches (Pinker, 1984, 1989). Studies on multilingual children may thus further our understanding of linguistic development in acquisition.

These conclusions are drawn from one longitudinal case study. Obviously, more research is needed to substantiate our findings. For example, data from other trilingual children similar to Di_fis in language combination and language dominance should be studied in order to generalize the results (or not). In a second step, trilinguals with other language dominance relations should be

analyzed. Another open question is whether categorial CS as defined in this study also applies to other grammatical domains.

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Online appendix

The figures and tables in this article can be found in the online appendix at: https://doi.org/10.1075/lia.20011.sca.appendix

Résumé

Cette contribution analyse l'acquisition des sujets en français ayant pour base une étude de cas longitudinale d'un enfant trilingue âgé de 2;8–3;2 qui acquiert le français, l'italien et l'espagnol simultanément. Ces trois langues varient selon la propriété du sujet nul : le français est

traditionnellement caractérisé comme langue sans sujet nul, alors que l'italien et l'espagnol sont des langues à sujet nul typiques. Les omissions du sujet argumental ne sont pas grammaticales en français mais fréquemment observées chez les enfants monolingues dans les phases d'acquisition précoce. Il en va de même pour les sujets postverbaux agrammaticaux qui forment un cluster avec les sujets nuls. Les enfants bilingues qui acquièrent le français produisent moins d'omissions du sujet ainsi que des sujets postverbaux. La présente étude confirme un effet d'accélération chez l'enfant trilingue. Les résultats sont interprétés en vue d'une paramétrisation tenant compte des classes verbales différentes localisées aux niveaux différents avec lesquelles apparaissent les sujets nuls et qui provoquent un 'CS catégoriel' ou une 'catégorialisation congruente.'

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