Research Article

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Crosslinguistic Interference in Simultaneous Acquisition of Turkish and Italian

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Abstract: This study compared the acceptability judgment task (AJT) and translation task (TT) in 10 simultaneous Turkish–Italian bilinguals with age-matched Turkish and Italian monolinguals as a control group. The position of subjects occurring with unaccusative verbs was investigated as the linguistic property. The results of the AJT in Turkish revealed no significant difference between the groups. However, in the Italian AJT, high variability was found in the younger bilinguals. Only bilinguals could participate in the TT. The participants, while translating into Turkish, always produced pragmatically appropriate sentences. In the case of translation to Italian, a significant effect correlated with the position of the subject in the Turkish stimulus was found.

Keywords: Turkish, Italian, simultaneous bilingualism, crosslinguistic interference, syntax–discourse interface

1 Introduction

It has been suggested that a crosslinguistic influence is relevant in simultaneous bilinguals (2L1) who are acquiring two languages that differ with respect to a particular parameter. Following Platzak’s (1999) proposal that C (complementizer) domain, where the syntax interacts with other domains, is the locus of potential interferences in many different cases of language acquisition. Hulk and Müller (2000) and Muller and Hulk (2001) proposed that a crosslinguistic influence occurs at the interface level between the syntax and discourse when the syntactical structures of two languages of a bilingual partially overlap. They proposed specifically two conditions for the interference to take place: (a) the structure taken into account should belong to the syntax–pragmatics interface, (b) the syntactic construction in language A should permit for more than one syntactic analysis, and language B should support only one of the two analyses. These studies investigated the simultaneous acquisition of the language pairs with the same parametric differences such as German–Italian and French–Dutch. Recent studies (e.g., Sorace and Serratrice, 2009; Sorace et al., 2009; Serratrice et al., 2004, 2009, 2012) have found the crosslinguistic interference in the contexts that involve two typologically similar languages. Sorace et al. (2009), for example, in a study examining the production of overt and null pronouns in English–Italian and Spanish–Italian bilinguals, found that not only English–Italian but also Spanish–Italian bilinguals preferred overt pronouns even where null pronouns would have been a more felicitous choice. In this case, condition b – proposed as necessary by Hulk and Müller (2000) and Muller and Hulk (2001) for interference to take place – is not respected, suggesting that the constructions at the syntax–pragmatic interface remain problematic even when the syntactic constructions completely overlap.

The present study wants to contribute to a better understanding of the processing of the structures at the interface between syntax and discourse in simultaneous bilinguals of Turkish and Italian – two
languages sharing the same parametric setting but with different pragmatic constraints. In the specific, it investigates, in both languages, the bilingual sensitivity to word order with unaccusative verbs.

2 The interface hypothesis

The ongoing research on bilingualism indicates that the structures at the interface, when the syntax encounters other cognitive systems, are the most problematic to acquire and master (e.g., Hulk and Müller, 2000; Muller and Hulk 2001). Most of the current research in the field are influenced by the Interface Hypothesis (IH) introduced by Sorace (2003). This addresses the question of why some structures seem difficult to master even at the very advanced stage of acquisition. In its early version, the IH suggested that the structures at the interface may be more vulnerable to the acquisition and could be subjected more to the language attrition than the structures with narrow syntactic properties only. Tsimpli et al. (2004) developed a later version of IH that distinguishes between the internal and external interfaces. The internal interfaces are related to the internal generative motors (as syntax and semantic), and the external interfaces lie between the syntax and other cognitive domains (as syntax–discourse). In this context, only the latter is considered to be vulnerable to language acquisition.

Many of the studies focusing on the syntax–discourse interface have proposed that the difficulty in mastering the structures at the interface is due to underspecification and crosslinguistic influence (Tsimpli et al., 2004; Lozano 2006b; Tsimpli, 2007). The proposal is that if a language has a particular interface condition that is specified in L2, it becomes underspecified when this condition is absent in L1. The aforementioned studies were mainly focused on the acquisition or attrition in bilinguals, in whom the two languages differ for a parametric choice. However, other studies, analyzing language combinations with similar parametric conditions, observed similar difficulties in acquiring discourse constraints (Bini, 1993; Margaza and Bel, 2006; Roberts et al., 2008; Sorace et al., 2009).

These studies are in line with the IH, but others (e.g., Rothman, 2009; Slabakova et al., 2011; Donaldson, 2012; Ivanov, 2012; Gomez Soler 2013; Slabakova, 2013) made observations contradicting the IH. Rothman (2009), for example, found that L2 intermediate learners show overuse of both overt and null subject, which is in contrast with the claim of Sorace and Filiaci (2006) that the difficulties in integrating information from multiple sources put the default on the overt pronoun. Besides, the study revealed that advanced learners reached a full mastery of interpretable features at the syntax–pragmatic interface. Other studies, in line with Rothman (2009), affirmed that near-native L2 speakers may attain a native-like mastering of the properties at the interface (Iverson et al., 2008; Donaldson, 2011, 2012; Ivanov, 2012). These challenging data, however, can be reconciled with the IH, taking into account the factors beyond the crosslinguistic influence and underspecification. Therefore, we must consider the other possible factors to explain this interface optionality in bilinguals. One factor could be the processing load to a bilingual while mastering the features that need an online integration of different domains (Sorace, 2016). Bilingual speakers need to inhibit continuously one language in favor of the other. This process may incur a cost, i.e., they may be less efficient in integrating diverse information as required at the syntax–pragmatic interface, as suggested by Wilson et al. (2009) in a study on the acquisition of anaphoric dependencies of pronouns and demonstratives in German L2. The processing of structures at the syntax–discourse interface is a highly demanding task that requires the allocation of a lot of cognitive resources (Rothman and Slabakova, 2011). Another factor that may add difficulties to the structures at the interface is the quality and quantity of input. The bilinguals receive inputs that are different in quantity and quality according to monolinguals (Tsimpli and Sorace, 2006; Sorace, 2005; Fernald, 2006; Sorace and Serratrice, 2009), and there is a growing consensus among the researchers in assuming that quantity and quality of input play an important role in acquiring structures that involve interfaces (Chondrogianni and Marinis, 2011; Kupisch et al., 2013; Kupisch et al., 2014; Unsworth et al., 2014; Unsworth, 2016).
Thus, IH can be considered a solid research framework as it appears to be the most vulnerable locus in all the aspects of language acquisition, but it is due to a multitude of factors and not only due to crosslinguistic effect.

2.1 A brief outline of Heritage Speakers and child bilingualism in the Turkish contest

In Western society, bilingualism used to be considered with suspicion up to a few decades ago, but in Turkey, where this study was conducted, bilingualism and multilingualism have a different history. Until 1923, when the Republic of Turkey was founded, being bilingual with Ottoman and other languages was the norm for the educated people. Even after the foundation of the Republic of Turkey (1923), it was permitted for minorities to have their schools, and the Turkish citizens had access to foreign language medium schools. In order to promote bilingualism, in all socioeconomic classes, many bilingual public junior and high schools of a particular kind were founded, such as the “Anatolian Middle and High schools,” where starting from the age of 10 years, the children were able to get some lessons in Turkish and others in English, French, or German. In 2002, admission criteria have changed and the Turkish students can access foreign language education only in postpubertal age, but still, early bilingualism has a prestigious status and Heritage Language (therefore HL)-speaking family can provide schooling in their native language (or in the native language of one of the parents) in the primary and middle schools founded in the consular areas.

In their influential discussion on HL and incomplete acquisition, Kupisch and Rothman (2018) considered together the children of 2L1 and HL, as 2L1 children usually speak a language at home that is different from the language of the majority of the society wherein they live. This means that much of the HL research have examined 2L1 acquisition but at a very different stage of the development than the majority of research carried out unambiguously under the scope of 2L1 (Kupisch and Rothman, 2018: 5).

Italian, as an HL in Turkey, is spoken by two distinct communities. One is the local community of Italians born in Turkey, the so-called Italian Levantine Community whose origin can be dated as far as the fourth Crusade (1204), and by the bilingual families in which one of the parents is Italian. This distinction is important because the Italian Levantine Community is described as a multilingual community and their children are usually 2L1 of Italian and any other minority language (French, Greek, Armenian, or sometimes all of them) and they get in contact with the majority language as L2 learners at nursery schools or with the caretaker (Pannuti, 2006). The Italian spoken by the children of Italian–Turkish families falls in the HL definition of Rothman (2009): “A language qualifies as a heritage language if it is a language spoken at home or otherwise readily available to young children, and crucially this language is not the dominant language of the larger (national) society” (p. 156).

It is important to link 2L1 studies to HL studies because the studies on “Successful heritage speaker” (Kupisch and Rothman, 2018) can give a key on how formal schooling and literacy in the minority language can positively influence 2L1 learning and enhance the possibility of monolingual-like ultimate attainment of a minority language for HL speakers (Kupisch et al., 2013; Bayram et al., 2017). This is particularly relevant to the present study as the children in this study were all formally schooled in both languages, even though the extent of schooling may substantially vary for the two languages.

2.2 Postverbal subject in null subject languages

The possibility of producing a postverbal subject is considered one of the characteristics of prodrop languages (Rizzi 1982; Jaeggl and Safr 1989) like Turkish and Italian, but recent studies have enlightened that the distribution of an overt subject is regulated by the discourse factors that are different for Turkish and Italian. In Italian, with transitive/unergative structures, the subjects in a preverbal position are interpreted as discourse topics (a), while the postverbal subjects introduce new unfamiliar information as the discourse focus (b) (Zobl and Liceras 1994; Belletti 2001, 2004; Domínguez 2013; Lozano 2006a).
The postverbal position is considered a neutral position for the subjects in unaccusative structures like (c), wherein the subject “nave” (ship) is interpreted as the topic and could be an answer to a generic question like “what happened?”.

In Turkish, the natural word order is Subject Object Verb (Underhill, 1972; Erguvanlı, 1984; Kornfilt 1984) (d):

but unlike Italian, it is permitted only by the requirement of the discourse and not affected by the semantics of verb (±accusative). Following Erguvanlı’s (1984) description, an appropriate overt subject in a postverbal position is generated when it recalls the information that is shared by both speakers, consider the following examples (f)

The question in (f) needs to be answered with a focus on the subject “Maria.” In this case, producing a subject at the postverbal position is inappropriate, as this is the position for the background information.
If we consider (g), it can be seen that both the speakers share the same information about the ship, that is evoked by the previously given discourse.

| (g) |   | O gemiye ne oldu? |
|-----|---|-------------------|
| 1.  |   | That shipDAT whatINT happenPST? |
|     |   | “What happened to that ship” |
| 2.  |   | Battı o gemi. |
|     |   | SinkPST that shipSBJ |
|     |   | “That ship sank” |

Following this line of reasoning, we see that unlike Italian, in Turkish, the most appropriate answer for a general question “what happened” is a construct with the subject in the beginning of a sentence (h)

| (h) |   | Ne oldu? |
|-----|---|----------|
| 1.  |   | WhatINT happenPST? |
|     |   | “What happened?” |
| 2.* |   | düştü bardak. |
|     |   | fallPST glassSBJ |
|     |   | “A glass fell” |
| 3.  |   | bardak Düştü fallPST |
|     |   | glassSBJ |
|     |   | “A glass fell” |

3 The current study

3.1 Motivation

In the introductory section, it has been illustrated how structures at the interface are difficult to master for bilinguals. The fact that crosslinguistic influence also happens in languages sharing the same parametric setting suggests that it may be due to the factors that are related to bilingualism per se, as a processing load or the length of the exposure and quality of input (Sorace et al., 2009; Sorace 2016). Only a few studies have been conducted on bilinguals speaking typologically similar languages and in the bilingual’s two languages. This study aims to contribute to filling this gap, offering a better understanding of how simultaneous bilingual children, speaking two languages with the same parametric setting, master the structure in analysis at the interface. As the tasks are administered in both languages, it will be possible to understand whether the “bilingual effect” is experienced in both languages or not. The main research question, this study aims to answer, is whether the structures at the interface between syntax and discourse are still vulnerable when they share the same parametric setting. If the structures at the interface are vulnerable, the subsequent research questions will aim to answer whether age or quantity and quality of the input play any role in the mastery of this structures and whether the different levels of processing load (i.e., understanding and producing sentences) cause any difference in the ability of bilinguals to master such structures.

The prediction, based on previous studies (Bini, 1993; Sorace and Serratrice, 2009), is that the sensitivity to word order with unaccusative verbs by bilinguals is significantly different from that of monolinguals and that the simultaneous processing of two languages plays a role in bilinguals’ language production. To meet these objectives, a language background questionnaire, an acceptability judgment task (AJT), and a translation task (TT) were employed.
4 Methodology

4.1 Participants

This study was conducted on 10 school-age children (average age 9.9 years), bilingual from birth, using both the languages on a daily basis. They were selected with the help of their schoolteachers or their private Italian Language Art teachers. It was assured that the participants are fluent and accurate in both languages. Of them, five were attending a Turkish curriculum private school and getting some hours per week of private tutoring in Turkish Language Art and five were in the Italian Consular School, following Italian national curriculum and getting some hours per week of private tutoring in Italian Language Art. As a control, 10 Italian monolinguals (average age 9.6 years) and 10 Turkish monolinguals (average age 9.6) were also recruited (the age range for all groups was 7-12 years). All participants in the experimental group were living in Istanbul, Turkey. The participants in the control group were enrolled from the different regions of Italy and Turkey. The participants in the control group were not having any significant competence in any second language or experience of living abroad (Table 1).

4.2 Procedure

The data were collected through a linguistic background questionnaire, an AJT, and a TT. All the tasks were administrated to the experimental group in both languages. The linguistic background questionnaire was given to be filled a few days before the first set of tests and was suggested that the parents will fill together with the children and include questions about the family’s socioeconomic status, the child’s linguistic history (language use preferences, daily hours of exposure, and linguistic resources available), the child’s attended preschools and schools. The quality of stimuli was implicitly deducted as the children in the Consular school had classes only with monolingual teachers and the children enrolled in Turkish school had a few hours per week of homeschooling with Italian monolingual teachers. Participants in the study group were tested for Italian using a simplified version of the Europass grid developed for children aged 9–15 years (http://istruzione.umbria.it/portfolio/PortfolioUmbria.pdf) and for Turkish using the descriptor in the Europass grid for children (https://rm.coe.int/1680461599). The researchers made sure that the children knew the verbs being tested during a preliminary guided conversation held about 1 week before the first task. The stimuli were presented employing a PowerPoint presentation with random slides. The task section was introduced with an explicatory section in the language that was targeted in that specific section. The bilingual children had two sections, one for Italian and one for Turkish, with a 1-week interval. The order of the language to start the first section was also randomized. The researchers communicated

| School | Child | Parents                                     | Age (years) |
|--------|-------|---------------------------------------------|-------------|
| Italian| D.    | Italian/Italian HL (Levantine)              | 7           |
| Italian| F.    | Italian/Italian HL (Levantine)              | 11          |
| Italian| D.    | Turkish/Italian                             | 12          |
| Italian| A.    | Turkish/Italian                             | 9           |
| Italian| M.    | Turkish/Italian                             | 11          |
| Turkish| A.S.  | Turkish/Italian                             | 9           |
| Turkish| L.    | Turkish/Italian                             | 10          |
| Turkish| G.    | Turkish/Italian                             | 12          |
| Turkish| I.    | Turkish/Italian                             | 7           |
| Turkish| M.O.  | Turkish/Italian                             | 11          |

Table 1: Individual data of children involved in the study
with the children in the language to be analyzed during that specific session. TT was administered only to bilingual children.

4.3 Materials

4.3.1 The AJT

The AJT consisted of 16 experimental items with unaccusative verbs and four fillers, which was inspired to that used in Sorace et al. (2009). Each item was presented as a 20-s animated movie showing two characters presented by the off-field voice as “Giulia” and “Luca.” Each movie illustrated a situation, then the off-field voice asked “what has happened?” to elicit a VS sentence with the unaccusative verbs (Pinto, 1997). One character then answered by a sentence having the subject in a postverbal position (VS) and the other by a sentence having the subject in a preverbal position (SV). The children were then invited by the off-field voice to tell which one of the characters was saying the “better” sentence. As mentioned in Section 4.1.2, the children were introduced to the AJT with a training section in which it was explained that both the sentences would be syntactically correct but one of them would be “better” (i.e., pragmatically appropriate).

4.3.1.1 Italian

The items were designed in such a way that in the experimental items, the most pragmatically appropriate sentence structure was VS, while with filler the appropriate sentence structure was SV.

4.3.1.2 Experimental item:

| Off-field voice: | Che cosa é successo? | “What happened?” |
|-----------------|---------------------|-----------------|
| Luca:           | E’ arrivata Maria    | Maria           |
|                 | “Maria came”        |                 |
| Giulia:         | *Maria é arrivata   | “Maria came”    |

Off-field voice: | Chi lo dice meglio? Luca? o Giulia? |
|-----------------|----------------------------------|
|                 | “Who says it better? Luca? O Giulia?” |

This experiment also presented four items (distractors) with accusative verbs, in which the pragmatic appropriate answer to the question “what has happened” would have an SV structure.

4.3.1.3 Turkish

In the Turkish version of the tasks, the material was presented in the same way used for Italian. The sentences in (a) and (b) exemplify the kind of sentences included. Due to the context presented in the animated movie, the sentence like (a) is always considered to be infelicitous in Turkish.
4.3.1.4 Experimental item

*Off-field voice*: Ne oldu?

Kerem: *geldi Ayşe*

Came Ayşe

“Ayşe came”

Zeynep: Ayşe geldi

“Maria came”

*Off-field voice*: Kim daha güzel söyledi? Kerem mi? Zeynep mi?

“Who said it better? Kerem or Zeynep?”

4.4 The TT

A TT is usually not employed when investigating children bilingualism, though it was found to be suitable to serve the scope of this study. Malakoff and Hakuta (1991) pointed out that a correct translation requires an ability to reformulate a message from the source language to the target language and this requires the application of appropriate metalinguistic skills. Rothman (2009) used a TT with adult L2 learners to investigate the distribution of pronominal subjects at the interface. It seemed a good choice to include a TT in which a participant needs to integrate the information from different sources (visual and auditory) and to give an appropriate answer (translating the sentence). This will help in investigating whether the necessity of continuously inhibiting one language and releasing the other may have any effect on the efficiency of processing the structures at the interface as proposed by Sorace (2011).

The task consisted of ten 10-s animated movies – eight were experimental items (sentences containing unaccusative/ergative verbs) and two were fillers (sentences with accusative verbs).

4.5 Turkish

In the animation, there were represented a small boy and an old lady. The participants were told that the boy in the animation was their cousin, visiting them in their Turkish grandmother’s home, the cousin could speak only Italian and grandmother only Turkish, so the participants had to translate for the grandmother what the cousin said. This format was chosen as it was like a real-life situation, as the participants often function as translators for visiting family members and relatives, those who do not speak other languages.

4.6 Experimental item

In the animation, a dog arrives and the boy is very happy:

*Cousin*: E' venuto un cane!

Arrived a dog

“a dog has come”

“ne dedi?”

“What did he said?”

*Turkish grandmother:*

and the participant had to translate in Turkish the Italian sentence
4.7 Italian

In the Turkish experiment, the children were presented with the same situation, but this time the participants were asked to suppose to be in Italy and they had to translate for the Turkish cousin hosted by her/his family in Italy.

4.8 Experimental item

In the animation, a dog arrives and the boy is very happy:

| Cousin: köpek geldi! | the dog arrived |
| "A dog has come" | |
| Italian grandmother: che cosa ha detto? | "What did he say?" |

And the participant had to translate in Italian the Turkish sentence.

4.8.1 Differences between the Italian and the Turkish tasks

As already mentioned that the pragmatic constructions of Turkish and Italian are different regarding the postverbal subject (cfr. Chapter 4), thus the nature of the tasks was not the same in the two languages. The Turkish AJT presented only the sentences in which the most felicitous choice was an SV structure, while in the Italian AJT alongside with unaccusative verbs, whose more natural structure is VS, four accusative verbs were also included, for which the most natural word order is SV. The Turkish TT included five VS Italian sentences and five SV Italian sentences, all in a pragmatically appropriate setting for which the most felicitous choice in Turkish would have been SV sentences. In the Italian TT, the Turkish sentences were presented in a more mixed way. According to the Turkish discourse constraints, all the 10 sentences should have been SV but still five sentences were presented as VS sentences. On the other hand, according to the Italian discourse constraints, the most appropriate translation should have consisted of eight SV (with unaccusative verbs) and two VS (with accusative verbs) sentences. The Turkish TT was cognitively less demanding and could induce a routine in the children, as in Turkish, the most appropriate sentences will always be SV. This is the most common structure in Turkish as discussed in Section 3. The Italian tasks were more demanding, as, in the AJT, the children had to integrate visual information (the situation presented in the movie) to audio information (sentences spoken by the two characters) and to inhibit the sentence that was not sounding appropriate. The Italian TT offered a mismatch between word order and the situation presented in the Turkish stimulus, allowing understanding whether children were relying more on the word order of the stimuli or they were able to produce pragmatically appropriate sentences.

5 Results

5.1 Italian

5.1.1 Subject position preferences in AJT

The average amounts of postponed pronouns accepted by the experimental and control groups were compared. Given the small number of participants in the study, the data were analyzed by a nonparametric
analysis, the Mann–Whitney $U$ test, with the groups as an independent variable and the items’ mean percentage of accepted sentences with an unaccusative verb and postponed subject as a dependent variable. The test indicated that the two groups differed significantly in the way they accept sentences with postponed subject, $\chi^2(2, N = 28) = 13.77, p = 0.001$, with unaccusative verbs. In other words, the monolinguals judged the sentences with an unaccusative verb–subject structure significantly more felicitous than their bilingual counterparts. The monolingual children seem to have better overall command of this particular structure at the interface when compared to bilinguals. To get a better understanding of the data, the experimental group was divided into two subgroups according to their age ($7$–$9$ years old and $10$–$12$ years old)¹ and the curriculum of the school attended (Italian or Turkish). The Kruskal–Wallis test was conducted, considering the age groups and monolinguals as the independent variables and the mean of accepted sentences with VS structure as a dependent variable to understand whether there was an effect of the age on the way children accepted postponed subject. A significant difference was observed between these three groups (control group and $7$–$9$ and $10$–$12$ experimental groups). The pairwise comparison explains how the younger bilinguals accept a significantly more preverbal subject with an unaccusative verb compared to their monolingual counterparts.

Figure 1 shows how the groups are related to each other. The monolingual (control) group has a higher rate of acceptance for the sentences with unaccusative and postponed verbs, while the younger group shows a lower rate. Both the groups show a statistically significant difference, but there is no statistically significant difference between older participants in the experiment group and monolinguals; the level of significance is shown in Table 2.

The Kruskal–Wallis test was also conducted among the school groups and monolinguals and significant differences were obtained, $\chi^2(2, N = 28) = −10.06, p = 0.006$.

The pairwise comparison revealed that the children enrolled in the Turkish schools were more prone to accept pragmatically nonfelicitous sentences and the performance of the children enrolled in the Italian schools was not significantly different from the performance of monolinguals. In Figure 2, a node shows the

1 Age of 9 was chosen arbitrarily, as it was the average age of the participants.
average rank, and the nonsignificant average ranks are linked with a black line, while the significant average ranks are shown by a gray line. In Table 3, the results of the pairwise comparison are reported in detail.

### 5.2 Subject position preferences in TT

The data collected with the TT task were divided into two groups. In the first group, the Turkish stimulus contained a preverbal subject and in the second one, the Turkish stimulus contained a postverbal subject (in this case, only for Turkish, there was a mismatch between the situations introduced in the film and the spoken sentence). In other words, the same participants in the experimental group (bilingual children) were tested for two different conditions: VS stimulus and SV stimulus. The coding for this task took into account the amount of pragmatically adequate sentences produced in each group. The data were analyzed using a mixed model linear analysis, which gives the possibility of considering the contribution that every single individual makes to the overall result. The results of the fixed effect estimates clearly show that when the Turkish stimulus contained a postverbal subject, the bilingual children as a group produced in Italian several pragmatically adequate sentences, which were statistically significantly higher than when the Turkish stimulus contained a preverbal subject \((t = -3.358, p < 0.004)\). Thus, the children were sensible to the Turkish stimuli and failed to integrate the visual information in the video giving a pragmatic cue. Wald’s Z test was employed to check whether the random effect of individuals on the experimental group needs to be taken into account, though the outcome was not significant (Wald’s Z = 0.946, \(p = 0.344\)). The school attended and the age of students were taken into account to assess whether there was a fixed effect for the groups on the way they processed translated sentences; however, no effect was assessed for the age-group (age groups \(t = -1.41, p < 0.171\) and school groups \(t = -0.949, p < 0.421\)).

### Table 3: Case summary

Each row tests the null hypothesis, that is, the distribution of samples 1 and 2 is the same. The asymptotic significance (two-sided tests) is displayed. The significance level is set at 0.05.

| Samples 1–2                  | Test statistic | Std error | Std test statistic | Sig. | Adj. sig. |
|------------------------------|----------------|-----------|--------------------|------|-----------|
| Turkish school–Italian school| −2.625          | 3.675     | −0.714             | 0.475| 1.000     |
| Turkish school–monolingual   | −9.450          | 2.940     | −3.214             | 0.001| 0.004     |
| Italian school–monolingual   | −6.825          | 3.369     | −2.026             | 0.043| 0.128     |

**Figure 2:** The results of pairwise post hoc tests for the school attended.
It is relevant here to recall Section 3, where it was shown how the Turkish postverbal subject is not affected by the verb semantics, and it focuses on the information shared. As shown in Figure 3, it is possible to appreciate the fact that all the children in the experimental group, but one, tried to encode the Turkish VS structure, not adequate to express the discourse constraint implied in the situation showed by the movie in the word order of the Italian sentence producing an SV sentence with an unaccusative verb. Similarly, all children, except two, captured the information contained in the verbal stimulus, but they ignored the contradictory information coming from the visual stimulus (video). We can, therefore, conclude that there was no priming effect of the Turkish stimulus on the word order of the Italian sentence; but the children favored to encode, in the translated sentence, the focus information from the audio stimulus rather than integrating the audio stimulus with the situation explained in the video. The effort of inhibiting a language during the translation might have ended in avoiding or continuously inhibiting the information coming from the source, namely, the video.

5.3 Turkish

5.3.1 Subject position preferences in AJT

The situation showed in the 20 animations in Turkish elicited an SV structure.

The average amount of the preverbal pronouns produced by the experimental and control groups was compared by the Mann–Whitney U test, with groups as an independent variable and the items’ mean percentage of accepted sentences with an unaccusative verb and preverbal subject as a dependent variable. The test indicated that the two groups do not differ significantly in the way they accept sentences with preverbal subject, \( W(18) = 45, Z = -0.34017, p = 0.72 \), with unaccusative verbs.

The bilingual and monolingual participants showed a constant preference for the preverbal subject in Turkish, which was a more felicitous choice (Figure 4).

5.4 Subject position preferences in TT in Turkish

In the 10-s animation in Italian, the depicted situation always offered a condition for the subject to be translated as preverbal one in the Turkish sentence, the sentences in Italian were pragmatically
appropriated and there were five stimuli with the subject in a preverbal position and five in a postverbal position. The data collected with the TT task were divided into two groups. In the first group, the Italian stimulus contained a preverbal subject and, in the other group, the Italian stimulus contained a postverbal subject. Nearly no variability was observed between the subjects (Figure 4). The Wilcoxon Signed-Rank test was considered an appropriate test, as it is designed to test the two different sets of data produced by the same children. The coding for this test took into account the amount of pragmatically adequate sentences produced in each group ($Z = 0.0378, p < 0.96$). The results of the analysis clearly showed that there was no effect of the stimulus in the production of the translated sentences. The children always produced pragmatically felicitous sentences in Turkish, showing no sign of crosslinguistic priming effect.

6 Discussion

Following the IH (Sorace and Filiaci 2006), this study aimed to answer the question whether the structures at the interface between syntax and discourse are still vulnerable when they share the same parametric setting and also in the case when vulnerability is assessed. The other aim was to get a better understanding of the role that age and quantity and quality of input plays in the mastery of such structures. The prediction that the structures at the interface are also vulnerable when languages share the same parametric setting and that the sensitivity to the distribution of postverbal subjects by bilinguals is significantly different from that of monolinguals and that simultaneous processing of two languages plays some role in bilinguals’ language production mastery is true only for Italian but not for Turkish.

6.1 Acceptability and production of the postponed subject

The study confirmed the hypothesis that the structures at the syntax–discourse interface are vulnerable even when they share the same parametric setting (Bini, 1993; Margaza and Bel, 2006; Roberts et al., 2008; Sorace et al., 2009). However, vulnerability is present only in Italian, and in particular, there is an
overextension of the use of the preverbal subjects. The results of the AJT evidence that the children in the experimental group understand the postponed subjects differently compared to the Italian monolingual children. The findings indicate a directionality in the crosslinguistic influence as only Italian seems to be vulnerable to the crosslinguistic effect; the same directionality is also assessed in a more cognitively demanding task as the TT. In Turkish, the bilingual children always judged and produced pragmatically appropriate sentences. It should be noted that in Turkish, the subject appears in the postverbal position only in limited situations, which were not tested in the items offered. The use of postverbal subjects in Turkish, in such cases, would have been an open violation of the information system encoded in the Turkish word position. Thus, in this case, we have two pro-drop languages, both of them regulate the distribution of pronouns at the interface between syntax and discourse, but they are vulnerable at different degrees to the crosslinguistic influence.

6.2 The quantity and quality of input

The fine-grained statistical elaboration of the data confirmed the previous findings for the same age of the children and that the quality of input plays a definite role in bilingual acquisition only in the AJT (Chonrogianni and Marinis, 2011; Kupisch et al., 2013; Kupisch et al., 2014; Unsworth et al., 2014; Granfeldt 2016; Unsworth, 2016). The older the children are, the more input in Italian they receive (in terms of the length of exposure both to other bilinguals and to monolinguals during their frequent visits to Italy), the more close to monolingual they performed in this task. Further, the school attended seems to exert some effect on AJT results in Italian, and this can be ascribed to the fact that the Italian school in Istanbul provides children with daily linguistic stimuli mostly coming from short-term Italian monolingual teachers, assigned to this school by the Italian government for just one academic year. However, neither the quality of input in Italian nor the age seems to have any role in the performance in the TT. The children here seem to suffer a crosslinguistic priming effect, relying on the audio stimuli without being always able to integrate the pragmatic situation shown in the video.

6.3 Processing cost and bilingual performance

The data seem to confirm the hypothesis that the structures with an external interface are more difficult to master when the processing cost is higher (Wilson et al., 2009; Rothman and Slabakova, 2011; Sorace, 2016). The data were collected using two different tasks. AJT was designed to give an insight of children’s competence; it was administered only in the tested language and requested only to inhibit the less felicitous sentence and, in this regard, this study evidences that children can acquire native-like competence with the right amount of exposure to quality input. TT was designed to test the performance in a high cognitive demanding environment: children need to continuously inhibit one of their languages to translate into the other and integrate the word order in the stimulus with the pragmatic requirements of the tested language. In this task, the data revealed that, regarding the performance in Italian, the children failed to integrate the visual and audio information and mostly relied on the pragmatic cue encoded in the Turkish word order. Italian to Turkish TT was less demanding as the information given in the audio and visual cues was concordant and the children constantly produced pragmatically accurate sentences. In a cognitively more demanding task, where performance rather than competence was tested, age and school attended by the children seemed to have no effect. However, the amount of data is still not large enough to affirm that directionality in language interference is only due to the nature of the task or rather the fact that bilingual children are not yet aware of the fact that Turkish allows postverbal subject (Section 3). The fact that two children (both of them enrolled in the Italian school) used a postverbal subject in Turkish in this task, even though not at a statistically significant level, sheds some light on the idea that some children have acquired
this particular aspect of the language in Turkish and that they produce more pragmatically appropriate sentences in Turkish than in Italian is due to a less heavy processing load in the Turkish tasks.

7 Conclusion

This is a small-scale study, but it is relevant to the field of language acquisition to enlighten how “successful heritage language speakers” Kupisch and Rothman (2018). The participants in this study, those who have received sufficient stimuli in terms of both quantity and quality, understand and master structures at the discourse–syntax interface both in the language of the community (Turkish) and in the minority language (Italian). The two age groups (7–9 and 10–12 years) and two groups according to the language of formal education (Italian or Turkish) helped shed some light on how the minority and majority languages are understood and produced in less and higher demanding tasks.

The collected data indicated that only Italian, the HL of the children involved in the study, shows the sign of vulnerability but Turkish, the language of the community, does not and that the language of formal education and age plays a role in AJT but processing load has a major effect in TT. Further research is necessary to understand how HL speakers process the postponed subject with different categories of verbs.

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Appendix

Script of the two tasks

Judgment task

Introductory cartoon (script)

Cat: Ciao, oggi voglio provare a fare un gioco con te: questi sono Luca e Giulia. Quando parleranno dovrai dirmi chi pensi che abbia ragione, Giulia o Luca. Vogliamo fare una prova? Dai!

Cat: Che cosa è successo?
Luca: la luce è mancata
Giulia: è mancata la luce
Cat: Chi lo dice meglio, Luca o Giulia?

List of the sentences
1. Una nave è affondata/é affondata una nave
2. È apparso un fantasma/un fantasma é apparso
3. Mia figlia ha suonato/ha suonato mia figlia
4. Ha risposto Andrea/Andrea ha risposto
5. Un bicchiere è caduto/é caduto un bicchiere
6. Maria è andata via/é andata via Maria
7. È spuntato il sole/il sole é spuntato
8. Il cane ha vomitato/ha vomitato il cane
9. È decollato un UFO/Un UFO é decollato
10. Maria ha bevuto/ha bevuto Maria
11. Sono sbarcati gli alieni/gli alieni sono sbarcati
12. È evaso un prigioniero/un prigioniero é evaso
13. È scappato il cane/il cane é scappato
14. Una bomba è scoppiata/é scoppiata una bomba
15. Sono fiorite le rose/Le rose sono fiorite
16. È tornata Maria/Maria é tornata
17. Il concerto è cominciato/e’ cominciato il concerto
18. È tornata Maria/Maria é tornata
19. La lezione è finita/é finita la lezione
20. È venuta Maria/Maria é venuta

Translation task:
Introductory cartoon (script)

Cat: Ciao, adesso facciamo un altro gioco, tuo cugino italiano è venuto a trovarvi in Turchia, puoi tradurre quello che dice a tua nonna? Proviamo!

Cusin: Mario ha portato i bicchieri!

Grandmother: Ne diyor?

List of sentence to translate
1. Mamma ha telefonato
2. Il bicchiere è caduto
3. È caduto il bicchiere
4. È venuto il cane
5. É scappato il gatto
6. Ha telefonato mamma
7. Il cane é venuto
8. Il cane ha mangiao
9. Il gatto é scappato
10. Ha mangiato il cane

_Processing task_ (Turkish)
Introductory cartoon (script)

Cat: Merhaba bugün seninle bir oyun oynamak istiyorum, bunlar Kerem ve Zeynep, konuşma başladıklarında hangisinin ifadesi daha doğru bana söyleyeceksin, Kerem'in mi yoksa Zeynep'in mi?

Cat: Ne oldu?
Kerem: elektrik kesildi
Zeynep: kesilir elektrik
Cat: Kinin ifadesi daha doğru? Kerem'in mi? Zeynep'in mi?

List of sentence to judge:
1. Konser bașladı/Bașladı konser
2. Belirledi hayalet/Hayalet belirledi
3. bir gemi battı/Batti bir gemi
4. Kızımız çaldı/Çaldi kızımız
5. Cevap erdi Ahmet/Ahmet cevap verdi
6. Bir bardak düştü/Düştü bir bardak
7. Ayşe gitti/Gitti Ayşe
8. Çıktı güneş/Güneş çıktı
9. Köpek hasta oldu/Hasta oldu köpek
10. Havalandı bir UFO/Bir UFO havalandı
11. İçti Ayşe/Ayşe içti
12. Bir uzayı indi/İndi bir uzaylı
13. Kaçtı bir tutuklu/Bir tutuklu kaçtı
14. Kayboldu Köpek/Köpek kayboldu
15. Bomba patladi/Patladi bomba
16. çiçek açtı/Açtı çiçek
17. Döndü Ayşe/Ayşe döndü
18. geldi Ayşe/Ayşe geldi
19. Karaya çıktı uzaylılar/Uzaylılar karaya çıktı
20. Vardi Ayşe/Ayşe vardı

_Translation Task:_
Introductory cartoon (script)

Cat: Merhaba şimdi bir oyun daha oynayacağız: Türkiye’den kuzeni İtalya'ya geldi. Annannen için dediklerin çevirebilir misin? Haydi bakalım, deneyelim

Cusin: Mario bardakları getirdi!

Grandmother: Che cosa ha detto?
List of sentences to translate
1. Aradı annem
2. bardak düştü
3. Düştü bardak
4. Geldi köpek
5. Kaçtı kedi
6. Annem aradı
7. Köpek geldi
8. Köpek yedi
9. Kedi kaçtı
10. Yedi köpek