

# Restrictions on definiteness in the grammars of German-Turkish heritage speakers

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This paper reports on a study investigating restrictions on definiteness (the Definiteness Effect) in existential constructions in the two languages of Turkish heritage speakers in Germany. Turkish and German differ in how the Definiteness Effect plays out. Definite expressions in German may not occur in affirmative or negative existentials, whereas in Turkish the restriction applies only to affirmative existentials. Participants were adults and fell into two groups: simultaneous bilinguals (2L1) who acquired German before age 3 and early sequential bilinguals (2L1) who acquired German after age 4; there were also monolingual controls. The tasks involved acceptability judgments. Subjects were presented with contexts, each followed by a sentence to be judged, including grammatical and ungrammatical existentials. Results show that the bilinguals, regardless of age of acquisition, make judgments appropriate for each language. They reject definite expressions in negative existentials in German and accept them in Turkish, suggesting distinct grammars.

**Keywords:** definiteness effect, heritage speakers, Turkish-German bilingualism

## 1. Introduction

In the present paper, we investigate the so-called Definiteness Effect, which restricts the use of definite expressions in existentials. We explore whether Turkish heritage speakers in Germany observe these restrictions in their Turkish and German. The two languages show a clear contrast in certain aspects of the Definiteness Effect; hence, this situation provides the means to investigate the extent to which the two languages are represented separately by bilinguals (De Houwer, 1990; Genesee, 1989; Meisel, 1986; Paradis & Genesee, 1996, among others), as well as the question

of whether there is transfer from either language to the other, and to what extent (Müller & Hulk, 2001). In addition, Meisel and colleagues (e.g., Meisel, 2011) have shown for various phenomena that bilinguals with an age of onset below age 3 show different developmental patterns from bilinguals with an age of onset after age 4. This raises the issue of whether heritage speakers of Turkish could be disadvantaged when acquiring the majority language (German) after age 4. Conversely, for the heritage language, Montrul (2008: 193) claims that simultaneous bilingual children from immigrant families run a higher risk of developing incomplete linguistic knowledge of the family language than children whose exposure to the majority language starts during later childhood. This would mean that an early age of onset for German could be disadvantageous for the development of Turkish. In order to investigate these issues, the present study compares adult German-Turkish bilinguals who acquired German as children, either before the age of 3 or after age 4.

In this contribution, we suggest that, at least with respect to the Definiteness Effect, heritage speakers of Turkish living in Germany treat their two languages separately, behaving like monolingual Turkish speakers when functioning in Turkish, and like monolingual German speakers in German. Furthermore, heritage speakers who learn German sequentially behave like heritage speakers who acquire the two languages simultaneously or near simultaneously. In other words, there is no disadvantage for speakers who acquired the majority language early.

## 2. Turkish heritage speakers in Germany and age of onset

According to a 2012 census of the Bundesamt für Migration und Flüchtlinge (Federal Office for Migration and Refugees), people of Turkish descent made up 18.5% of the German population. Turkish is the most frequently used native language besides German at primary schools in Hamburg (Fürstenau, Gogolin, & Yağmur, 2003). Turkish-speaking bilinguals in Germany typically grow up with two Turkish-speaking parents, which means that Turkish is chronologically the first language; nevertheless, they tend to become dominant in German at some point in their development (Rothweiler, 2007).

Studies on the language development of German-Turkish bilinguals have focussed on either the development of German or the development of Turkish, rather than making comparisons between their two grammars with respect to the same linguistic phenomena, which is what we do in the present study. It has been shown that, when speaking Turkish, bilinguals avoid constructions that do not have German equivalents (Rothweiler, 2007) and that they also use constructions that are not found in monolingual Turkish speakers (see Chilla & Babur, 2010,

for an overview). In their German, German-Turkish early successive bilinguals (age of arrival between 2;9–4,2) have been shown to pattern with monolinguals in the acquisition of case marking (Schönenberger, Sterner, & Ruberg, 2011) and V2 and finiteness marking (Rothweiler, 2006). However, Schönenberger (2011) found differences between monolinguals and German-Turkish successive bilinguals in their use of German articles, with omission rates showing a plateau effect. Summarizing, in terms of their linguistic development, German-Turkish bilinguals have been shown to differ from monolingual speakers of both languages with respect to certain grammatical domains. Up to now, there have been no studies of the grammar of early bilingual German-Turkish speakers in adulthood, for either German or Turkish, and no comparison between their grammars, so that it is not clear whether any differences in development ultimately result in grammars that remain divergent from those of monolinguals.

The population of German-Turkish bilinguals provides a good testing ground for the potential impact of different ages of onset in German. Most Turkish children in Germany grow up in monolingual Turkish families and start kindergarten at different ages, which means that the first intensive contact with German differs from one case to another. As mentioned previously, in recent research on sensitive periods, the age between 3 and 4 years has been identified as a cut-off point between L1 and L2 acquisition, at least for some aspects of language (Meisel, 2007, 2009, 2011; Rothweiler, 2007). The fact that monolingual children acquire central grammatical structures by the age of 3 years has served to motivate the assumption that the ability to acquire a language akin to monolinguals declines after the third year (e.g., Rothweiler, 2007). In consequence, Rothweiler (2007) distinguishes between simultaneous bilinguals (2L1s) with an age of onset for both languages within the first three years of life from early second language acquisition (eL2) with the age of onset in the second language beginning at age 4 or later. As far as eL2 is concerned, some studies suggest that, with regard to certain grammatical phenomena, such as gender, child L2 acquisition resembles adult L2 acquisition (Meisel, 2007; Rothweiler, 2007). Given potential differences in outcomes depending on age of onset, it is important to investigate the nature of the grammars of adult heritage speakers whose acquisition of the dominant language started at different ages.

In this paper, we will use the term *2L1* if the age of onset of both languages occurred between ages 0–3 and the term *eL2* if one of the two languages was acquired after age 4. The German-Turkish population studied here falls into both groups. Whenever we refer to both groups jointly we will use the term (*early*) *bilinguals*.

### 3. The Definiteness Effect

The Definiteness Effect has been described in relation to existentials. Much of the literature on this phenomenon has focused on English, particularly the so-called *there*-insertion construction, following Milsark (1977). We start by presenting the facts for English and then turn to German and Turkish.

#### 3.1 Definiteness effects in English

Typically, English existentials can be followed by indefinite noun phrases, but not by definite ones. This generalization holds for affirmative as well as negative existentials, as shown in (1) for articles and in (2) for DPs containing determiners other than articles.

- (1) a. There seems to be a dog in my garden.  
 b. There isn't a dog in my garden.  
 c. \*There seems to be the dog in my garden.  
 d. \*There isn't the dog in my garden.
- (2) a. There seem to be some dogs in my garden.  
 b. There aren't any dogs in my garden.  
 c. \*There seems to be every dog in my garden  
 d. \*There isn't every dog in my garden

Existential *there*-constructions alternate with predicate locatives (Freeze, 1992). In a predicate locative, the subject of 'be' can be definite or indefinite, as shown in (3).

- (3) a. The man is at the door.  
 b. A man is at the door.

These facts point to a preference for definites to appear in subject position, which is related to requirements of information structure, namely the tendency for definites to be topics, which are found in subject position. *There is/there are* constructions have been referred to as the "central" existential construction (Lyons, 1999). There are other constructions with presentational verbs, e.g. *appear, occur, arrive, come, remain*, which can take *there* as subject and which also show an effect of definiteness, as shown in (4):

- (4) a. The captain appeared at the door.  
 b. ??There appeared the captain at the door. (Lyons, 1999: 237)

Further constructions involving *there is* superficially look like existentials, but are not subject to the Definiteness Effect. These include so-called deictic (5a) and list (5b) readings.

- (5) a. Look! There's the bus!  
 b. What's left to do? Well, there's the kitchen.

In short, the relevant generalization for English is that indefinite DPs (also known as weak) may appear in existentials, definites (also known as strong) may not (Milsark, 1977); this holds for affirmative and negative existentials.

### 3.2 Definiteness effects in German

German shows effects of definiteness which are similar to English. The verb in German existentials can be either *sein* 'be', as in *es ist/es sind* (literally: 'it is/it are'), or *geben* 'give', as in *es gibt* (literally: 'it gives') (Lyons, 1999). Both constructions are subject to the Definiteness Effect in affirmative and negative existentials,<sup>1</sup> as can be seen in (6).

- (6) a. **Es ist ein Hund /es gibt einen Hund** in meinem Garten.  
 it is a dog /it gives a dog in my garden  
 'There is a dog in my garden.'
- b. **Es ist kein/ es gibt keinen Hund** in meinem Garten.  
 it is no/ it gives no dog in my garden  
 'There is no dog in my garden.'
- c. \***Es ist der Hund/ \*es gibt den Hund** in meinem Garten.  
 it is the dog/ it gives the dog in my garden  
 'There is the dog in my garden.'
- d. \***Es ist nicht der Hund/ \*es gibt nicht den Hund** in meinem Garten.  
 it is not the dog/ it gives not the dog in my garden  
 'There is not the dog in my garden.'

According to Czinglar (2002), existential constructions involving the copula *sein* are locative while those involving *geben* are "pure existentials". The latter express existence in a stricter sense, while the former express temporary presence of an object at a certain location. These constructions behave differently in several respects. First, the 3rd person neuter pronoun *es* 'it' is obligatory in the pure existential construction with *geben* (see (a–b)), regardless of its position in the sentence, while the locative existential construction with the verb *sein* allows *es* only sentence-initially (see (7c–d)).

1. The German negation *nicht* 'not' in combination with the indefinite article *ein* (*eine/einen*, etc.) becomes *kein* (*keine/keinen*, etc.) if the sentence (and not the determiner alone) is negated. Similarly, negated quantifiers, e.g., *einige* 'some', turn into *keine* 'no' if the sentence is negated.

- (7) a. Es gibt viele Gänseblümchen in meinem Garten.  
 it gives many daisies in my garden  
 ‘There are many daisies in my garden.’
- b. In meinem Garten gibt \*(es) viele Gänseblümchen.  
 in my garden gives it many daisies  
 ‘In my garden there are many daisies.’
- c. Es sind viele Gänseblümchen in meinem Garten.  
 it are many daisies in my garden  
 ‘There are many daisies in my garden.’
- d. In meinem Garten sind \*(es) viele Gänseblümchen.  
 in my garden are it many daisies  
 ‘In my garden there are many daisies.’

Second, *es gibt* selects accusative case, as in (8a), while *es ist* selects nominative case, as in (8b).

- (8) a. Es gibt einen Mann im Raum.  
 it gives a.ACC man in.the room  
 ‘There is a man in the room.’
- b. Es ist ein Mann im Raum.  
 it is a.NOM man in-the room  
 ‘There is a man in the room.’

Moreover, in the pure existential construction it is not possible to replace *es* by a more referential pronoun, such as the demonstrative *das* (see (9a)), whereas with *sein* this is marginally acceptable (see (9b)), perhaps because a deictic reading is possible in the latter case.

- (9) a. \*Das gibt einen Mann im Raum.  
 it gives a.ACC man in.the room  
 ‘That is a man in the room.’
- b. ?Das ist ein Mann im Raum.  
 it is a.NOM man in-the room  
 ‘That is a man in the room.’

The two constructions also differ in another respect. Unlike English *there is* and German *es ist*, German *es gibt* can be followed by a proper name, although proper names are definite. This is illustrated by (10a), which means that a person with the name of Michael Ballack exists. If the same construction is combined with a coda, as in (10b), *es gibt* und *es sind* both become ungrammatical, although the locative

sounds somewhat better. The locative is acceptable with the DP in sentence-initial position, as in (10c), while the *es gibt* construction remains ungrammatical.<sup>2</sup>

- (10) a. Es gibt/ \*es ist Michael Ballack.  
 it gives/ it is Michael Ballack  
 ‘There is Michael Ballack.’  
 b. \*Es gibt/ \*es ist Michael Ballack auf dem Spielfeld.  
 it gives/ it is Michael Ballack on the playing field  
 ‘There is Michael Ballack on the playing field.’  
 c. Michael Ballack ist/ \*Michael Ballack gibt (es) auf dem Spielfeld.  
 Michael Ballack is/ Michael Ballack gives it on the playing field  
 ‘There is Michael Ballack on the playing field.’

In summary, German shows the Definiteness Effect in affirmative and negative existentials. The locative construction (with *sein*) appears to bear closer resemblance to the English *there-is* construction than does the pure existential construction (with *geben*). Both types of existentials were included in our task.

### 3.3 Definiteness effects in Turkish

Turkish is a language that has an (optional) indefinite article (unstressed *bir*) but no definite article, although definiteness can be expressed in other ways, such as through the use of word order or by use of strong quantifiers (Enç, 1991; Kornfilt 1997) or via prosody (Özçelik, 2011). Turkish has an existential predicate *var* ‘exist’ used in affirmative cases; negative existentials are expressed by means of *yok* ‘not exist’. Affirmative existentials in Turkish, as in German and English, are subject to a definiteness restriction (Enç, 1991), as can be seen by comparing (11a) and (11b).<sup>3</sup>

- (11) a. Bahçe-de birkaç çocuk var.  
 garden-LOC some child exist  
 ‘There are some children in the garden.’  
 b. \*Her çocuk bahçe-de var.  
 every child garden-LOC exist  
 ‘There is every child in the garden.’

2. We have no explanation for these observations, but we suspect that the pure existential in (10b and c) combines a semantic and syntactic violation, while the locative only involves defective syntax.

3. Examples here are adapted from Enç (1991). For Enç, the restriction in Turkish is a part of a more general restriction on specificity rather than definiteness. Since all our definite expressions were also specific, we put this issue aside.

- c. \*Bahçe-de her çocuk var.  
 garden-LOC every child exist  
 ‘There is every child in the garden.’

Expressions like *birkaç* ‘some’ are weak in Turkish, and are thus indefinite, which leads them to be attracted to the preverbal position, the typical position for indefinite subjects in Turkish (Kornfilt, 1984, 1997; Öztürk, 2005). Expressions like *her* ‘every’, on the other hand, are strong, and are, therefore, located in sentence-initial position, which is the canonical position for definite expressions in Turkish (Kornfilt, 1997). Other types of weak quantifiers in Turkish include *birçok* ‘several’, *çok* ‘many’, *hiç* ‘none/any’, *kimse* ‘noone’, numerals and indefinite *bir*. Strong quantifiers include proper nouns, *çoğu* ‘most of’ *hepsi* ‘all of’, *tümü* ‘all of’ and *bazı* ‘some’.

Sentences like (11b) are ungrammatical irrespective of word order, as (11c) illustrates. The only way to make this sentence acceptable is on a focused interpretation of the noun phrase, in which case the meaning is that every type of child can be found in the garden.<sup>4</sup>

In short, indefinite noun phrases can occur in affirmative existentials in Turkish, while their definite counterparts cannot. In this respect, Turkish patterns like English and German. In contrast, Turkish negative existentials show no restriction against definite expressions, as can be seen in (12). Both indefinite (12a) and definite subjects (12b, c) (regardless of their position) are grammatical in negative existentials.

- (12) a. Bahçe-de çok ağaç yok.  
 garden-LOC many tree not-exist  
 ‘There aren’t many trees in the garden.’  
 b. Ali bahçe-de yok.  
 Ali garden-LOC not-exist  
 ‘There isn’t Ali in the garden.’  
 c. Bahçe-de Ali yok.  
 garden-LOC Ali not-exist  
 ‘There isn’t Ali in the garden.’

It should also be noted that negative sentences with strong DPs are indeed existential in Turkish (e.g., ‘There isn’t Ali in the garden’), and are not, for example, locative constructions (‘Ali isn’t in the garden’). This is not only evidenced by the fact that a different predicate is used for non-existential sentences with locatives, i.e. *değil*, as opposed to *yok* (which is specific to existentials), but also by the fact

4. Such exceptions to Definiteness Effect can also be found in English, as with the phrase ‘There is every reason to believe...’



that *yok* cannot be substituted by *değil* in sentences like (12c). Further, although a sentence like (11c) requires focus in order to be acceptable, no such requirement is placed on (12c), despite the similar word order. In other words, whereas (11c) has to appear with focus prominence on the DP (and with the focused constituent in the immediately preverbal focus position) in order to be rendered grammatical, (12c) is grammatical with prominence on the final phonological phrase, i.e. *yok*, as is usual with prosodic structure of sentences without focus in Turkish (Özçelik, 2011). The fact that (12b and c) can occur in both orders without a focus requirement, and that (11c) can only occur with the DP in the focus position and with higher prominence, provides further evidence that the Definiteness Effect targets only affirmative existentials in Turkish.

To summarize, Turkish affirmative existentials pattern with English and German affirmative existentials with respect to the Definiteness Effect, whereas negative existentials contrast with English and German. These possibilities are presented in Table 1.

**Table 1.** Occurrence of weak and strong expressions in existentials

|                    | English   | German    | Turkish         |
|--------------------|-----------|-----------|-----------------|
| <b>Affirmative</b> | Weak only | Weak only | Weak only       |
| <b>Negative</b>    | Weak only | Weak only | Weak and strong |

#### 4. Previous research on definiteness in L2 and bilingual acquisition

It is well known that second language speakers (L2ers) have problems in acquiring article systems, particularly if their native language (L1) lacks articles (see, for example, papers in Garcia-Mayo & Hawkins, 2009). Typical errors include the omission of determiners in obligatory contexts, inappropriate suppliance (definite for indefinite or vice versa) and oversuppliance in contexts where no determiner is required. Various explanations have been offered, some of which assume a problem in the acquisition or realization of definiteness features, including: (i) fluctuation between features determining article choice (definiteness versus specificity) (e.g., Ionin, Ko & Wexler, 2004); or (ii) permanent morpho-syntactic deficits in the L2 grammar relating to the impossibility of acquiring a new uninterpretable definiteness feature (e.g., Tsimpli & Mastropavlou, 2007).

In the case of bilingual acquisition, comparatively little is known about the acquisition of the definiteness feature when one language has two articles and the other only one, as is the case for German-Turkish bilinguals, German having both definite and indefinite articles, whereas Turkish has only an indefinite

article. There are two relevant studies reporting errors of omission and inappropriate article use in the German of German-Turkish bilingual children. While monolingual German-speaking children cease to omit articles between 2;6 and 3 years (Eisenbeiss, 2000), German-Turkish bilinguals show longer periods of article omission (Pfaff, 1992). Schönenberger (2011) reports that around age 5, after 24 months of exposure to German, German-Turkish bilinguals still have problems using articles, resulting in omissions or inappropriate use. Previous work has further reported problems with articles in adult bilinguals, including heritage speakers (e.g., Kupisch, 2012; Montrul & Ionin 2010), but it is unclear whether they reflect problems with a semantic definiteness feature, with particular kinds of tasks, or simply transfer.

Indeed, problems with production of articles do not necessarily imply failure to acquire a definiteness feature; rather this might reflect a 'missing inflection' or mapping problem attributable to difficulties in accessing the lexicon during spoken production (Lardiere, 2000; Prévost & White, 2000) or difficulties in building appropriate prosodic structure (Goad & White, 2004, 2009). To successfully master restrictions on definiteness captured by the Definiteness Effect, it must be the case that bilinguals and L2ers can in fact encode definiteness in their grammars, even if they sometimes fail to supply articles.

As far as production is concerned, a number of studies have reported that L2ers observe the Definiteness Effect. Turkish speakers and Chinese speakers appropriately produce English existentials only with weak determiners (Lardiere, 2004; White, 2003, 2008). In other words, no violations of the Definiteness Effect are found, suggesting appropriate representation of a definiteness feature.

Extending these findings beyond production, White et al. (2012) report on a series of experiments investigating knowledge of the Definiteness Effect, conducted with adult learners of English whose L1s are Turkish and Russian. The task was a contextualized acceptability judgment task, testing affirmative and negative existentials. Results show that both intermediate and advanced L2ers reject definite DPs in English negative existentials, even though the L1s in question permit this construction. In the present paper, we adopt and adapt the methodology used by White et al. (2012), using it to explore the unconscious knowledge of the Definiteness Effect on the part of German-Turkish simultaneous (2L1) and successive bilinguals (eL2), adults at the time of testing. We assume that bilingual grammars are subject to the same grammatical constraints as monolingual grammars and hypothesize that early bilinguals, whether simultaneous or successive, will observe the Definiteness Effect as it applies in each of their languages. Our hypotheses are:

- i. Bilingual German-Turkish speakers will treat each of their languages distinctly, and will observe definiteness restrictions in accordance with monolingual native speakers of each language.
- ii. Acquisition outcomes will not be affected by the age of first intensive exposure to German.

## 5. Experiment

### 5.1 Participants

Participants in our experiment were 21 adult German-Turkish bilingual speakers, residing in Hamburg, Germany, at the time of testing. The majority ( $n = 17$ ) were born in Northern Germany, one in Southern Germany and three in Turkey. All spoke Standard varieties of German and Turkish. Their average age was 28 years (range 20–42 years).

We also included monolingual German and Turkish native speaker control groups. The German group consisted of 15 speakers of Standard German from Hamburg (mean age: 27 years). Monolingual Turkish data from a previous study (White et al. 2012) were used, collected from 17 speakers in Istanbul.

The predominant language in the bilingual speakers' homes when they were growing up was Turkish. Their parents were all native speakers of Turkish. Interaction between the participants and their parents was mostly in Turkish; five of them also spoke German with their parents. For the majority of the bilinguals, the first (intensive) contact with German happened at a daycare center, for some only when starting German school (age 6 or later). According to self-reports, 11 participants had their first intensive contact with German between 0–3 years, six between 4–5 years, and four between 6–9 years. All attended German schools as children, some had additional schooling in Turkish; all have German high school diplomas. When asked about changes in language use over time, eight bilinguals reported using more German at home and outside of home after school entry, only one reported using more Turkish over the years, while the remainder reported no change.

At the time of data collection, most participants were studying at German universities. According to self-reports, the majority ( $n = 11$ ) used more German than Turkish, 7 used both languages with equal frequency, one used more Turkish, and two used only German.<sup>5</sup> Some of the participants had Turkish-speaking partners. They generally felt at ease using both German and Turkish, while considering

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5. All reported being fluent in English.

themselves to be more proficient in German (see Figures 1 and 2). Figure 1 shows that only about 20% of the speakers considered themselves to be “native-like” in Turkish, with a tendency for speaking and comprehension skills to be rated higher than reading and writing skills. In German, by contrast, the majority of speakers reported native-like skills (see Figure 2).

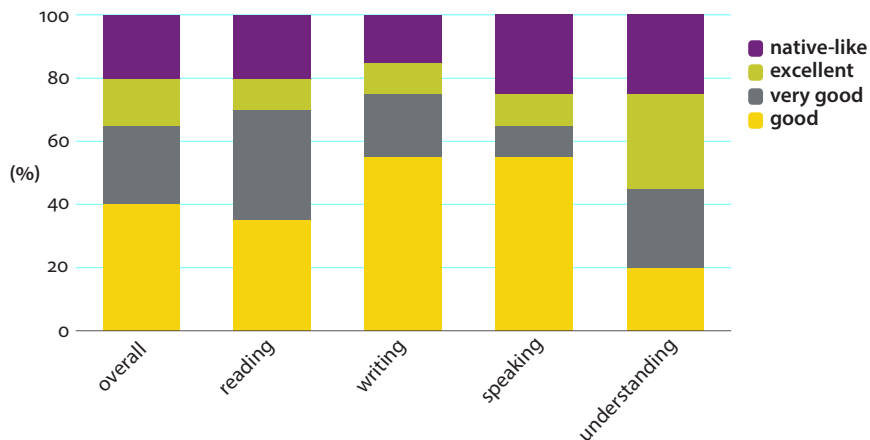


Figure 1. Self-rated proficiency in Turkish (% of speakers in each category).

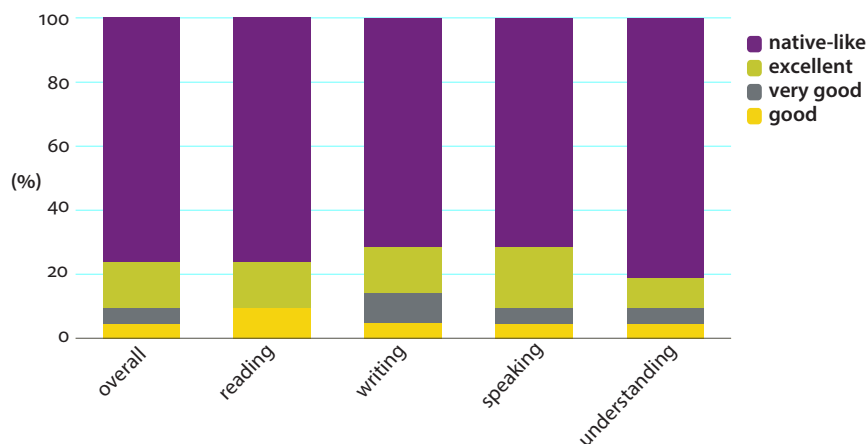


Figure 2. Self-ratings of proficiency in German (% of speakers in each category).

For the purpose of analysis we divided bilingual participants into two groups: 2L1 speakers whose exposure to German started before age 3 ( $n = 11$ ) and eL2 speakers whose exposure to German started after age 4 ( $n = 10$ ).

## 5.2 Task

The task was a bi-modal acceptability judgment task. Test items in the Turkish version are identical to those in White et al. (2012); those in the German version were adapted from the English sentences tested in White et al. (2012) and were extensively piloted with monolingual German speakers before being finalized.<sup>6</sup>

The methodology was based on White et al. (2012), with some changes, mostly relating to the inclusion of oral presentation of stimuli, as well as oral responses, in order to avoid potential disadvantages for heritage speakers with less exposure to written Turkish. Each test sentence was preceded by a short context, to ensure that participants would consider the relevant interpretation, since some test items were grammatical but infelicitous in a given context. Test items (contexts and test sentences) were presented on a computer screen, automatically randomized for each participant. Participants were instructed to read and listen to the stimuli (read by a native speaker), and to repeat the sentence if it sounded fine in the given context or to provide a spoken correction if they thought it did not sound right. The response time allowed to them corresponded to twice the length of each stimulus sentence.

## 5.3 Sentence types: German version

The German task included 70 items. Fourteen sentence types were tested, with 5 test items per type, including grammatical and ungrammatical existentials with *es ist/sind* and *es gibt*,<sup>7</sup> exceptions to definiteness restrictions (namely, list readings), and sentences controlling for other aspects of (in)definiteness. There were 8 ungrammatical types (for a total of 40 ungrammatical items) and 6 grammatical types (30 grammatical items).

The examples in (13) illustrate grammatical and ungrammatical affirmative existentials with articles and other determiners (*ein/e* ‘a’, *kein/e* ‘no’, *der/die/das* ‘the’, *mein/e* ‘my’ and proper names).<sup>8</sup> These items test whether bilinguals are

6. The complete tests are available on request.

7. The choice between the two was based on responses during the pilot testing, which revealed that *es ist* sounded more natural in most contexts. Note that, for the same reason, two items included unaccusative verbs (*es liegt* ‘it lies’, *es steht* ‘it stands’) instead of *es ist/es gibt*. The reason for making these adjustments was to ensure that participants did not reject sentences for reasons unrelated to the Definiteness Effect.

8. Unlike the English and Turkish versions of the test, we did not include quantifiers because they provoked corrections potentially unrelated to the Definiteness Effect during the pilot. For example, *Es sind nicht wenige Kinder im Raum* ‘There are not a few children in the room’ was corrected to *Es sind keine Kinder im Raum* ‘There are no children in the room’ or *Es sind viele Kinder im Raum* ‘There are many children in the room’. The original negative sentence was,

sensitive to the Definiteness Effect in situations where strong and weak determiners behave similarly in German and Turkish.

- (13) Weak affirmative (grammatical)<sup>9</sup>  
 Es ist eine passende Schüssel im Schrank.  
 it is a suitable bowl in.the cupboard  
 ‘There is a suitable bowl in the cupboard.’
- (14) Strong affirmative (ungrammatical)
- a. Es ist das Buch schon da.  
 it is the book already there  
 ‘There is the book already there.’
  - b. Es ist dein Hund in meinem Haus.  
 it is your dog in my house  
 ‘There is your dog in my house.’
  - c. Es ist Michael Ballack schon in der Stadt.  
 it is Michael Ballack already in the city  
 ‘There is Michael Ballack already in the city.’

The items in (15) and (16) illustrate the equivalent sentence types for negative existentials, where the L1 and L2 behave differently with respect to strong DPs; (16) are ungrammatical in German but their equivalents in Turkish are grammatical.

- (15) Weak negative (grammatical)
- a. Tut mir Leid, es ist hier keine Telefonzelle in der Nähe.  
 sorry there is here no phone booth in the near  
 ‘Sorry there is no phone booth close by.’
- (16) Strong negative (ungrammatical)
- a. Es ist das Buch noch nicht hier.  
 it is the book yet not here  
 ‘There’s the book not here yet.’
  - b. Es ist mein Lieblingsspieler nicht dabei heute.  
 it is my favourite player not part today  
 ‘It is my favourite player not taking part today.’

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in fact, ambiguous. The corrections do not allow us to distinguish between the possibility that participants disprefer weak quantifiers in negative existentials and the possibility that they are trying to avoid ambiguity. Other problems were related to the fact that some strong quantifiers appear to be more acceptable in German than in English, e.g., *Es sind alle Kinder im Garten* seems to be more acceptable than its English counterpart \**There are all children in the garden*.

9. *Es gibt* was not used in ungrammatical stimuli because *es gibt*+definite sounded even more unnatural than *es ist*+definite.

- c. Es ist Max Berger gerade nicht hier.  
 it is Mr. Berger now not here  
 'It is Mr. Berger not here right now.'

A number of items were also included to control for the possibility that participants had learned *es ist* or *es gibt* followed by the indefinite article as a chunk.<sup>10</sup> For example, if participants accept list sentences like (17), rejection of *es ist*+definite is unlikely to be a result of chunk-based learning.

- (17) a. Es ist noch die Weinflasche von gestern da.  
 it is still the wine bottle of yesterday there  
 'There is still the wine bottle from yesterday.'

In addition, a variety of sentences were included as fillers to ensure that participants were not biased towards rejecting all sentences with definite subjects and accepting all sentences with indefinites. In other words, these sentences contrast in their behavior with the existential items.

#### 5.4 Sentence types: Turkish version

The Turkish test items are parallel to the German items and were taken from White et al. (2012).<sup>11</sup> They included grammatical and ungrammatical existentials, as well as fillers. There were four ungrammatical sentence types, for a total of 25 ungrammatical items, and seven grammatical sentence types (35 items), resulting in a total of 60 test items.<sup>12</sup>

Examples of the different test item types are given below. The items in (16) illustrate grammatical and ungrammatical affirmative existentials, where German and Turkish behave similarly, observing the Definiteness Effect. The grammatical cases ( $n = 15$ ) included indefinite articles (unstressed *bir*), numerals (*iki* 'two', *üç* 'three') and weak quantifiers (*birkaç* 'some', *birçok* 'several', *hiç* 'no/any', *çok* 'many', *biraz* 'a little'); the ungrammatical cases ( $n = 15$ ) included strong quantifiers (*tümü* 'all of', *her* 'every', *-In çoğu* 'most of', *her üçü* 'all three'), possessives and proper names.

- (18) Weak affirmative (grammatical)  
 San-ır-ım, burada uygun bir tabak var.  
 Think.pres.1s here suitable a plate exist  
 'I think, there's a suitable plate here.'

10. For the same reason, White et al. (2012) included items to control against the use of *there is+a* as a chunk.

11. In some cases, the contexts were shortened.

12. The Turkish test included fewer items than the German one because Turkish has no definiteness contrast with articles.

(19) Strong affirmative (ungrammatical)

\*Mazhar Alanson zaten şehir-de var.

Mazhar Alanson already city.Loc exist

‘There is already Mazhar Alanson in the city.’

The items in (20) and (21) illustrate negative existentials with weak and strong DPs ( $n = 20$ ). Negative existentials with strong DPs are grammatical. These items test whether participants’ judgments are influenced by German, where definite expressions are not permitted.

(20) Weak negative (grammatical)

Her zamanki gibi, bugün de ders-te çok öğrenci yok.

as.always today also class.Loc many student not.exist

‘As always, there aren’t many students in class today.’

(21) Strong negative (grammatical)

Üzgün-üm, Hayrettin ev-de yok.

sorry.1sg Hayrettin home.Loc not.exist

‘I’m sorry, there isn’t Hayrettin at home.’

Fillers ( $n = 10$ ) were all infelicitous, to compensate for the fact that the Turkish test had more grammatical items involving existentials than ungrammatical ones.

## 5.5 Data analysis

Participants were tested individually; responses were recorded and subsequently transcribed for coding and further analyses. As mentioned above, participants were asked to provide a spoken correction if they thought that a sentence sounded unnatural in the given context, and to repeat the sentence if they thought it sounded good. The corrections and repetitions are used to examine whether subjects are responding relevantly. For example, if the sentence *Es ist dein Hund in meinem Haus* ‘There is your dog in my house’ is corrected to *Dein Hund ist in meinem Haus* ‘Your dog is in my house’, the correction counts as relevant, because removal of *es* while retaining a definite subject DP suggests sensitivity to the Definiteness Effect, as would a correction like *Es ist ein Hund in meinem Haus* ‘There is a dog in my house’, where the DP has been rendered indefinite. Corrections which fail to eliminate Definiteness Effect violations, such as *Es ist der Hund in meinem Haus* ‘There is the dog in my house’, where one definite DP is substituted for another, are taken to indicate lack of sensitivity to the Definiteness Effect. Irrelevant corrections, e.g. *Es ist dein Hund hier* ‘There is the dog here’, are treated as if no correction had been made.



Corrections were examined and classified as relevant or irrelevant according to these criteria. Any items where participants failed to make a correction in the given time were removed from the analysis.

## 6. Results

We conducted two factor and three factor mixed ANOVAs followed by post hoc tests (Scheffé, Tamhane's T2 or paired t-tests with a Bonferroni correction, as appropriate), and one factor ANOVAs, to determine the source of any differences (PASW Statistics 19).

To gain an overall impression we conducted a two factor mixed ANOVA on four data sets (monolingual German, monolingual Turkish, bilinguals judging German and bilinguals judging Turkish), comparing mean acceptances of weak and strong DPs in affirmative and negative existentials. A significant main effect is found for data set ( $f(3, 70) = 79.6, p < 0.001$ ) and for sentence type ( $f(3, 210) = 1461.4, p < 0.001$ ), as well as a significant interaction ( $f(9, 210) = 99.3, p < 0.001$ ).<sup>13</sup>

Post hoc Tamhane's T2 tests show that the two monolingual data sets differ from each other ( $p < 0.001$ ); the same is true of the bilingual data sets ( $p < 0.001$ ). By contrast, there is no significant difference between the bilingual German and the monolingual German data ( $p = 0.9$ ) or between the bilingual Turkish and the monolingual Turkish data ( $p = 0.25$ ).

### 6.1 Monolingual German vs. monolingual Turkish

We first compare the data from the monolingual German and the monolingual Turkish groups, to confirm that the two languages differ as expected with respect to the Definiteness Effect. In Figure 3, we present overall results, reporting mean acceptances of the sentence types involving weak determiners compared to strong determiners in affirmative and negative existentials.

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13. We use degrees of freedom that reflect corrected values, where applicable (necessary when Mauchly's test of sphericity indicates the violation of the assumption of sphericity). The effect of correcting degrees of freedom is a change in the significance of the value of F.

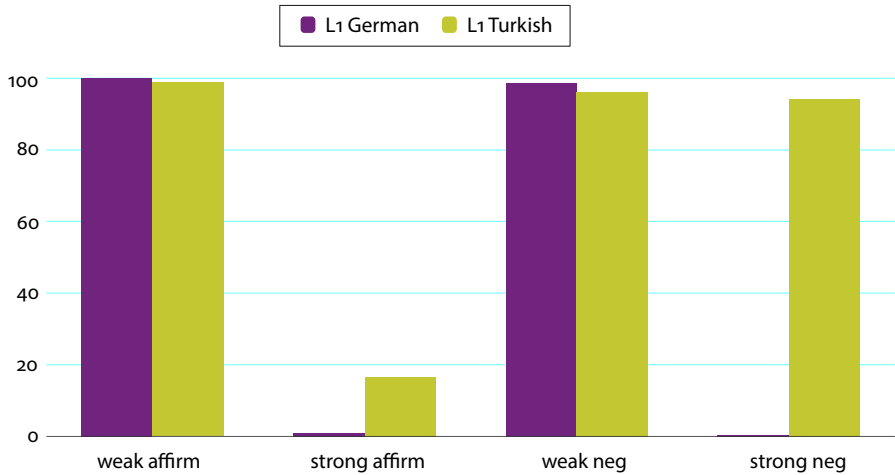
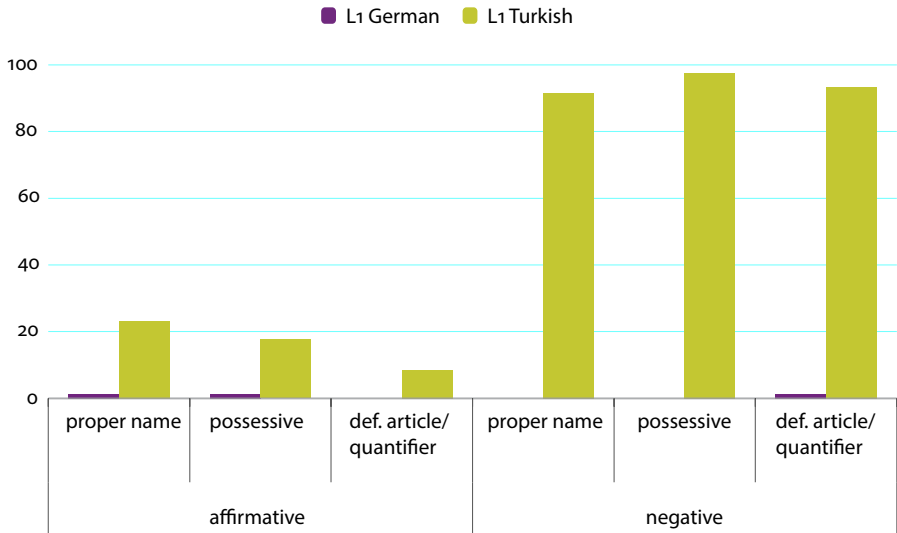


Figure 3. Acceptance of existential sentences (%) by monolingual German and Turkish speakers.

A two factor mixed ANOVA shows a significant main effect for group ( $f(1, 30) = 134.7$ ,  $p < 0.001$ ), a significant main effect for sentence type ( $f(3, 90) = 695.5$ ,  $p < 0.001$ ) and a significant interaction ( $f(3, 90) = 190.1$ ,  $p < 0.001$ ). Paired t-tests show a significant difference in acceptance of strong affirmatives (ungrammatical in both languages) and strong negatives (ungrammatical in German, but grammatical in Turkish) ( $p < 0.001$ ), which is due to the performance of the Turkish group and contributes to the significant interaction effect. Likewise, participants show a significant difference in acceptance of weak negatives (grammatical in both languages) vs. strong negatives (ungrammatical in German, but grammatical in Turkish) ( $p < 0.001$ ), which is due to the performance of the German group and also contributes to the significant interaction effect.<sup>14</sup>

14. Paired t-tests also show a significant difference in accepting weak affirmatives existentials (grammatical in both German and Turkish) vs. strong affirmatives (ungrammatical in both German and Turkish) ( $p < 0.001$ ), while there is no significant difference in acceptance of weak affirmatives (grammatical in both languages) vs. weak negatives (grammatical in both languages) ( $p = 1$ ).



**Figure 4.** Acceptance of strong affirmatives and negatives by subtype (%) by monolingual German and Turkish speakers.

Figure 4 presents the results for strong affirmative and strong negative existentials by subtypes. For strong affirmative existentials (ungrammatical in both languages), a two factor mixed ANOVA shows a significant effect for group ( $f(1, 30) = 9.6$ ,  $p < 0.005$ ), a significant main effect for sentence type ( $f(2, 60) = 3.3$ ,  $p < 0.05$ ) and no interaction ( $f(2, 60) = 2.2$ ,  $p = 0.12$ ). The significant main effect for sentence type is marginal ( $p = 0.044$ ) and merely cumulative, as paired t-tests revealed no further significant differences between the subtypes. The significant main effect for group results from the fact that monolingual Turkish speakers reject strong affirmative existentials to a lesser extent than monolingual German speakers.

For strong negative existentials (ungrammatical in German, grammatical in Turkish), a two factor mixed ANOVA shows a significant effect for group ( $f(1, 30) = 1137.2$ ,  $p < 0.001$ ), no effect for sentence type ( $f(2, 60) = 1.1$ ,  $p = 0.33$ ) and no interaction ( $f(2, 60) = 1.4$ ,  $p = 0.26$ ). Comparing each subtype of strong existentials across the two conditions (affirmative vs. negative), a one factor repeated measures ANOVA shows no significant difference in acceptance of strong affirmative existentials (ungrammatical) vs. strong negatives (ungrammatical) across the three subtypes by monolingual German speakers ( $p = 1$ ). By contrast, monolingual Turkish speakers showed a significant difference in acceptance of strong affirmative (ungrammatical) vs. strong negative (grammatical) existentials across all the three subtypes of strong DPs ( $p < 0.001$ ), as expected.

Summarizing, the two monolingual groups behave differently: strong negatives are rejected by German speakers but accepted by Turkish speakers. One

unanticipated finding is that German speakers reject strong affirmatives to a greater extent than Turkish speakers, but otherwise the two groups observe all the relevant contrasts as expected.

## 6.2 Monolingual vs. bilingual German

For the purpose of this analysis, we compare three groups: monolingual German speakers, 2L1 bilinguals and eL2 bilinguals. Again, we begin by reporting overall results on existential sentences, collapsing the sentence types involving articles and other determiners.

Comparing mean acceptance of grammatical (weak) and ungrammatical (strong) cases in affirmative and negative existentials (see Figure 5), a two factor mixed ANOVA shows no effect for group ( $f(2, 33) = 1.4, p = 0.27$ ), a significant main effect for sentence type ( $f(1.3, 41.7) = 3801, p < 0.001$ ) and no interaction ( $f(2.5, 41.7) = 1.9, p = 0.15$ ). According to paired t-tests, participants show a significant difference in acceptance of grammatical vs. ungrammatical existentials, whether affirmative or negative ( $p < 0.001$ ). There is no difference in acceptance of ungrammatical negative vs. ungrammatical affirmative existentials ( $p = 1$ ), suggesting no influence from Turkish.<sup>15</sup> In other words, all participants reject strong DPs in negative and affirmative existentials to the same degree.

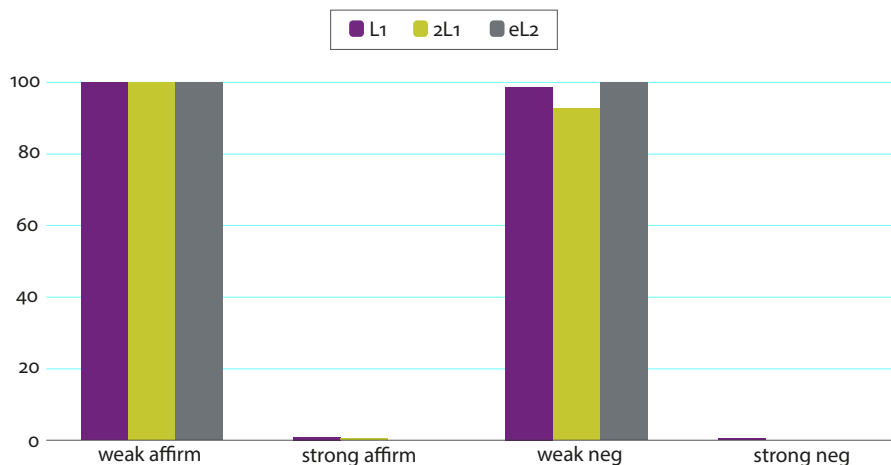


Figure 5. Acceptance of German existential sentences (%).

15. There is also no significant difference in acceptance of grammatical negative vs. grammatical affirmative existentials which involve weak DPs ( $p = 1$ ).

Comparison of the results for ungrammatical affirmative and negative existentials divided into subtypes yielded no significant contrast; these stimuli are almost totally rejected by all groups.

Finally, we turn to the sentences which were included to ensure that *es ist/es gibt* were not rejected when followed by a definite expression in a non-existential context, as well as the sentences included to establish that participants do not adopt a strategy of accepting all indefinites and rejecting all definites in our task. All participants accepted deictic and list items involving strong DPs as being natural. Likewise, all participants accepted grammatical definite and indefinite subjects almost at ceiling and rejected ungrammatical indefinites. These results suggest that the bilinguals were not behaving in accordance with formulaic learning or general strategies which might otherwise account for their accuracy with existentials.

In summary, the performance of the two bilingual groups (2L1 and eL2) and native speakers of German showed no significant differences at all, suggesting no influence from Turkish and no effect for age of acquisition of the dominant language, issues we will return to in the discussion.

### 6.3 Monolingual vs. bilingual Turkish

Here, we compare three groups: monolingual Turkish speakers, 2L1 and eL2 bilinguals in their judgments on Turkish. As before, we begin with the overall results on existential sentences.

Figure 6 compares mean acceptance of weak and strong cases, in both affirmative and negative existentials. A two factor mixed ANOVA shows no effect for group ( $f(2, 35) = 2.5, p = 0.1$ ), a significant main effect for sentence type ( $f(2.9, 101.8) = 340.9, p < 0.001$ ) and a significant interaction ( $f(5.8, 101.8) = 3.8, p < 0.005$ ). According to paired t-tests, participants show a significant difference in acceptance of strong affirmative (ungrammatical in Turkish) vs. strong negative (grammatical in Turkish) existentials ( $p < 0.001$ ).<sup>16</sup> As it turned out, there is also a significant difference in acceptance of weak negatives (grammatical) vs. strong negatives (grammatical) ( $p < 0.001$ ); this is due to the two bilingual groups accepting the strong negative condition somewhat less readily than monolingual Turkish speakers, which also results in the significant interaction effect. We return to this point in the discussion.

16. Participants also show a significant difference in acceptance of weak affirmative (grammatical) vs. strong affirmative (ungrammatical) existentials ( $p < 0.001$ ), while there is no difference in acceptance of weak affirmatives (grammatical) vs. weak negatives (grammatical) ( $p = 1$ ).

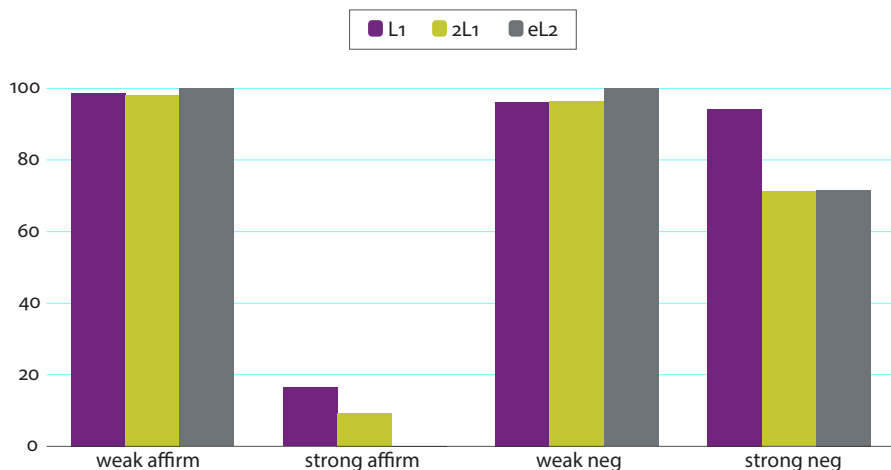


Figure 6. Acceptance of Turkish existential sentences (%).

We now turn to the strong affirmative (ungrammatical) and strong negative (grammatical) existentials, divided into subtypes (see Figure 7). For strong affirmative existentials (ungrammatical), a two factor mixed ANOVA shows no effect for group ( $f(2, 35) = 0.7, p = 0.52$ ), no effect for sentence type ( $f(2, 70) = 1.9, p = 0.16$ ) and no interaction ( $f(4, 70) = 0.7, p = 0.57$ ). For strong negative existentials (grammatical), a two factor mixed ANOVA shows a significant effect for group ( $f(2, 35) = 7.1, p < 0.005$ ), a significant effect for sentence type ( $f(2, 70) = 8.5, p < 0.005$ ) and a significant interaction ( $f(4, 70) = 3, p < 0.05$ ). Post hoc Tamhane's T2 tests show that the two bilingual groups do not differ from each other ( $p = 1$ ); however, the monolingual Turkish group differs from the 2L1 group ( $p < 0.05$ ), and the results also approach significance for the monolingual vs. the early L2 group ( $p = 0.06$ ).<sup>17</sup> According to one factor repeated measures ANOVAs, each group shows a significant difference in acceptance of strong affirmative (ungrammatical) vs. strong negative (grammatical) across the three subtypes of strong DPs, except for early L2ers in the quantifier subtype ( $p = 0.14$ ).

17. According to paired t-tests, there is no difference in acceptance of proper names and possessives in the negative condition ( $p = 1$ ), however the acceptance of strong quantifiers differs from both proper names and possessives ( $p < 0.01$ ). To interpret the significant interaction effect, a one factor repeated measures ANOVA was conducted for each group of participants, which revealed that eL2ers show a significant difference in acceptance of strong quantifiers and possessive DPs ( $p < 0.05$ ), while there was no other significant difference in acceptance of the three subtypes in any of the groups.

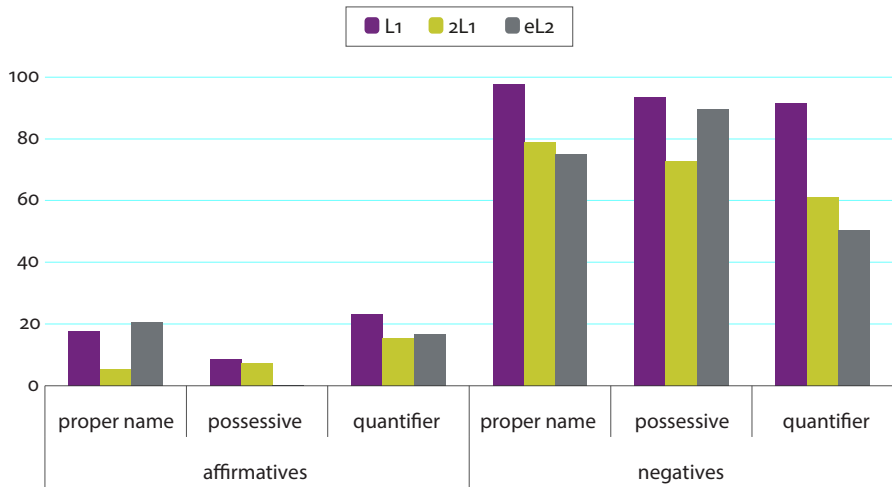


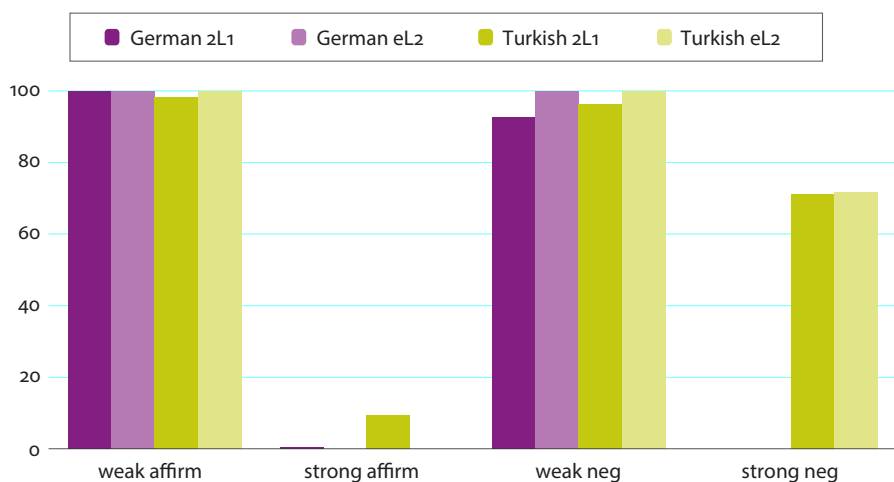
Figure 7. Acceptance of Turkish strong affirmatives and negatives by subtype (%).

In summary, the two bilingual groups (2L1 and eL2) accept most definite expressions in negative existentials while rejecting them in affirmatives, suggesting little influence from German on the heritage language in this regard. One exception is found in the performance by the eL2 group who, for one subtype only, namely strong quantifiers, fail to distinguish significantly between their use in affirmative and negative existentials. We address this point in the discussion.

#### 6.4 Bilingual German vs. bilingual Turkish

Here we compare performance of the bilinguals on each of their languages. Figure 8 reports mean acceptance of all weak and strong existentials, both affirmative and negative. A three factor mixed ANOVA shows no effect for group (2L1 vs. early L2) ( $f(1, 19) = 1.7, p = 0.21$ ), a significant main effect for language ( $f(1, 19) = 89.1, p < 0.001$ ), a significant main effect for sentence type ( $f(2, 38.4) = 771.8, p < 0.001$ ), a significant interaction between language and sentence type ( $f(3, 57) = 113.5, p < 0.001$ ), and no other interactions. According to paired t-tests, participants show a significant difference in acceptance of strong affirmatives (ungrammatical in both languages) vs. strong negatives (ungrammatical in German, but grammatical in Turkish) ( $p < 0.001$ ), which is due to their performance in Turkish and contributes to the significant interaction effect. Likewise, participants show a significant difference in acceptance of weak negatives (grammatical in both languages) vs. strong negatives (ungrammatical in German, but

grammatical in Turkish) ( $p < 0.001$ ), mainly due to their performance in German, contributing to the significant interaction effect.<sup>18</sup>



**Figure 8.** Acceptance of existential sentences (%), German and Turkish bilinguals compared.

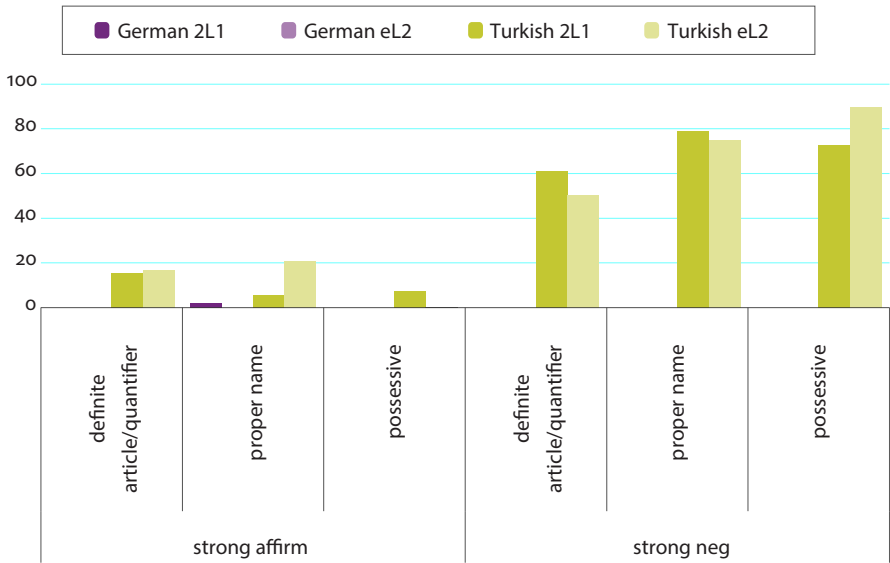
As far as the subtypes are concerned (see Figure 9), for strong affirmative existentials (ungrammatical in both languages),<sup>19</sup> a three factor mixed ANOVA shows no effect for group ( $f(1, 19) = 1, p = 0.33$ ), a significant main effect for language ( $f(1, 19) = 12.5, p < 0.005$ ), no effect for sentence type ( $f(2, 38) = 0.4, p = 0.69$ ) and no interaction. For strong negative existentials (ungrammatical in German, grammatical in Turkish), a three factor mixed ANOVA shows no effect for group ( $f(1, 19) = 0.002, p = 0.96$ ), a significant main effect for language ( $f(1, 19) = 200.2, p < 0.001$ ), a significant main effect for sentence type ( $f(2, 38) = 6, p < 0.01$ ), a significant interaction between language and sentence type ( $f(2, 38) = 6, p < 0.01$ ), and no other interactions. According to one factor repeated measures ANOVAs, bilinguals show no significant difference in acceptance of strong affirmatives vs. strong negatives across the three subtypes of DPs in German ( $p = 1$ ), while they do show a significant difference in acceptance of strong affirmatives vs. strong nega-

18. Participants also show a significant difference in acceptance of weak affirmative existentials (grammatical in both German and Turkish) vs. strong affirmatives (ungrammatical in both German and Turkish) ( $p < 0.001$ ), while there is no significant difference in acceptance of weak affirmatives (grammatical in both languages) vs. weak negatives (grammatical in both languages) ( $p = 1$ ).

19. For the purposes of this comparison, German sentences contained the definite article, whereas Turkish sentences contained strong quantifiers, since Turkish has no definite article.



tives across the three subtypes in Turkish, except for eL2 bilinguals in the quantifier subtype ( $p = 0.14$ ), as mentioned in the previous section.



**Figure 9.** Acceptance of strong affirmatives and negatives by subtype (%): German and Turkish bilinguals compared.

## 6.5 Summary

We have found that bilinguals' performance in German does not differ from monolinguals; they make the relevant contrasts between grammatical and ungrammatical existentials. Furthermore, there is no difference in the performance of 2L1 vs. early L2 bilinguals in German. The patterns are largely similar in the bilingual and monolingual Turkish data, in that both bilingual groups observe the contrasts relevant in Turkish, although they accept the strong negative condition to a somewhat lesser extent than monolingual Turkish speakers. One unexpected finding is that the eL2 group is accepting strong quantifiers in the negative condition in Turkish less often and fails to observe the affirmative vs. negative contrast for this DP subtype. There are no other differences between the two groups of bilinguals in Turkish.

Crucially, bilinguals treat German and Turkish existentials differently, showing the expected difference in the strong negative condition, where sentences are rejected in German and accepted in Turkish. The bilinguals also reject ungrammatical strong affirmatives in German more readily than in Turkish, but the same difference is found in the monolingual judgments for German vs. Turkish (see Figure 4).

## 7. Discussion

As discussed above, White et al. (2012) have shown that monolingual English speakers reject strong DPs in both affirmative and negative existentials. Our results from monolingual German speakers confirm these findings for German as well. White et al. (2012) have further shown that adult learners of L2 English observe the Definiteness Effect in English, even if the L1 shows no restriction in negative existentials, as is the case for Turkish, with no evidence of language transfer at the proficiency levels that they tested.

Since it has already been shown that adult L2 learners at advanced levels of proficiency do not exhibit problems with this construction, one might ask why there is a need to investigate the same phenomenon in heritage speakers. In some work, heritage language acquisition has been associated with incomplete acquisition or attrition, such that certain properties either are not acquired or are acquired and subsequently lost (e.g. Montrul, 2008, 2011; Polinsky, 1997). In the present study, we have shown that our hypotheses were supported: early bilinguals who speak two languages which differ in terms of how the Definiteness Effect plays out treat their two languages differently: in German, these bilinguals observe the Definiteness Effect in both affirmative and negative existentials, whereas in Turkish, they observe it only in affirmative existentials. In other words, restrictions on definiteness provide another example of a case where incompleteness or attrition in the heritage language is not observed, in line with proposals advanced by Rothman (2009), Pascual y Cabo & Rothman (2012), and Putnam & Sánchez (2013) for other linguistic phenomena. Furthermore, age of acquisition of the dominant language ( $\pm 4$  years of age) has little effect on either language: both the 2L1 group and the eL2 group distinguished between the two languages in the relevant respects.

There are nevertheless two aspects of our data which require further discussion. While the bilinguals did not differ from monolingual speakers when judging sentences in German, there were some differences between them and the Turkish monolinguals when judging Turkish. Like monolinguals, they accepted strong DPs in negative existentials, but to a lesser extent than the monolingual Turkish speakers (see Figure 6).

We suggest that this difference does not reflect any kind of incomplete acquisition or attrition. The important issue is not, in fact, whether bilinguals respond exactly like monolingual native speakers. As a number of researchers have pointed out over the years, L2 grammars and bilingual grammars need to be considered in their own right rather than in comparison to monolinguals (e.g. Bley-Vroman, 1983; Cook, 1997). Concerning the phenomenon that we are interested in, namely differences in restrictions on definiteness in existentials, the issue is whether

bilingual groups show the crucial contrasts in both their languages, treating grammatical sentences differently from ungrammatical sentences. In other words, the fact that participants treated strong DPs in Turkish negative existentials significantly differently from strong DPs in affirmative existentials, accepting them in the former but not the latter, suggests that the relevant properties of Turkish are represented in the grammar. While it is possible that their somewhat lower acceptance of strong DPs in negative existentials might reflect an influence from German (where such existentials are ungrammatical), this influence is not sufficient to override the basic contrast, which they have clearly retained.

However, there is one exception where one of the bilingual groups fails to manifest a contrast relevant for Turkish. As shown in Figure 7, the eL2 group did not show a significant difference between acceptance of strong quantifiers in affirmative and negative existentials, in contrast to the monolinguals and the 2L1 group. However, the eL2ers did show the relevant contrast for the other types of strong DPs that were tested, so the failure cannot relate to strong DPs as a whole. It is possible that this behavior reflects the influence of German, though it remains to be explained why only quantifiers were affected. Under the assumption of influence from German it is also puzzling why the 2L1s performed better in Turkish than the eL2s, because the former had been in contact with German for a longer period of time, i.e. their input space was divided between German and Turkish from birth. At present, we have no convincing explanation for this outcome.<sup>20</sup> In

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20. One potential explanation is that the bilinguals try to be overly correct. As illustrated in (i–ii), the correction pattern typical for eL2ers' with quantifiers in the negative condition involved changing *yok* in the stimulus (i) to *değil* in the correction (ii).

- (i) Hayır, davetlilerin çoğu henüz salonda yok.  
 no guests' most yet in the hallway not.exist  
 'No, there aren't most of the guests in the hallway yet.'
- (ii) Hayır, davetlilerin çoğu henüz salonda değil.  
 no guests' most yet in the hallway not  
 'No, most of the guests aren't in the hallway yet.'

Turkish *yok* has a second meaning besides 'not exist', namely 'no'. However, using *yok* to mean 'no' is considered less standard than using its quasi-synonym *hayır*. In fact, children are often told to use *hayır* instead of *yok*. We suspect that participants may have avoided *yok* because they tried to be as 'correct' as possible. They also occasionally stated that both *yok* and *değil* are acceptable, suggesting that their *yok-to-değil* conversions do not necessarily imply that they consider the *yok* version to be ungrammatical. As pointed out by a reviewer, the question arises why a similar strategy of *yok-to-değil* conversion was not used with weak existentials. This dichotomy presumably arises because with weak existentials such conversions would lead to ungrammaticality, as exemplified in (iii) (compare with (ii) above). In other words, only with strong determiners there is a non-existential alternative construction.

summary, the failure of the eL2ers to distinguish between strong quantifiers in affirmative and negative existentials is puzzling. However, the fact remains that participants accepted many instances of strong DPs in negative existentials in Turkish, and accepted them to a significantly greater extent than in affirmative existentials, while rejecting them systematically in German, suggesting that the relevant properties of Turkish are present in the grammar.

Finally, we can consider our results from the perspective of recent discussion on linguistic interfaces (e.g. Montrul, 2011; Sorace, 2011; White, 2011). Although we have not considered the Definiteness Effect in terms of linguistic interfaces, it is, presumably, a phenomenon relating to multiple interfaces (syntax-semantics-discourse). Montrul (2011) considers the extent to which acquisition of linguistic properties lying at different interfaces is problematic for heritage speakers, resulting in incompleteness. Sorace (2011) considers whether properties pertaining to certain interfaces (particularly, syntax-discourse) are likely to lead to optionality in L1 attrition. Our results suggest that the interfaces involved do not result in problems: there is no evidence of incomplete acquisition of the heritage language and no evidence of attrition or loss of the heritage language as far as the Definiteness Effect is concerned.

In conclusion, our study has shown that adult bilingual speakers of Turkish/German adhere to restrictions on definiteness in each of their languages, largely observing the relevant contrasts and treating the two languages differently. Furthermore, our results suggest that the relevant properties are acquired and maintained in both languages, independently of the age of exposure to German. Of course, our results do not invalidate the claim for a cut-off point between 3 and 4 per se. But they do suggest that any such cut-off, if it exists, does not extend to all linguistic phenomena. In the case of the Definiteness Effect, 2L1, eL2 and adult L2 groups all demonstrate restrictions on definiteness which are appropriate to the languages under investigation.

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- (iii)a. Hayır, masada üç kalem yok.  
 no, on the table three pen not.exist  
 b.\*\*Hayır, masada üç kalem değil.  
 no, on the table three pen not  
 'No, there aren't three pens on the table.'

A closer look at the speakers with the most *yok-to-değil* conversions further shows that they were highly proficient, literate speakers of Turkish with balanced exposure to both languages and a native-like accent, lending further support to the over-correction hypothesis.

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