Role of Structural Priming in Contact-Induced Change: Subject Pronoun Expression
in L1 Turkish by Turkish-Dutch Bilinguals

Hande Sodacı

*Centre for Language Studies,
Radboud University Nijmegen, the Netherlands*

Ad Backus

*Department of Culture Studies,
Tilburg University, the Netherlands*

Gerrit Jan Kootstra

*Centre for Language Studies,
Radboud University Nijmegen, the Netherlands*

Hande Sodacı (corresponding)

sodaci92@gmail.com

Abstract

Subject pronoun expression has been extensively studied for effects of language contact, but it is fairly recent that these studies started including cross-language structural priming paradigms. The earlier studies on subject pronoun use in Turkish spoken by Turkish-Dutch bilinguals did not find any difference from monolingual speakers of Turkish but reported a few instances of unconventional use of subject pronouns, indicating the influence of Dutch on Turkish. This study aimed to determine whether structural priming may have a part in the unconventional variation observed in subject pronoun use in Turkish in contact with Dutch. Twenty-eight Turkish-Dutch bilinguals listened to short stories and responded to subsequently presented instructive sentences. These sentences were prime sentences, which contained either an overt or a null subject pronoun. Priming effects were investigated in monolingual and bilingual settings by presenting the stories in Turkish in the former and in Dutch in the latter. Results yielded a higher likelihood of using overt subject pronouns in the bilingual than in the monolingual setting following a prime sentence with an overt rather than a null pronoun. Our findings, which are based on a structure and a language that have not yet been studied much in relation to structural priming (i.e., subject pronoun use in Turkish), strengthen the empirical basis of how structural priming influences syntactic choices in language contact settings.

Keywords: structural priming; bilingualism; cross-linguistic priming; language production; subject pronoun use; Turkish

Role of Structural Priming in Contact-Induced Change: Subject Pronoun Expression in L1 Turkish by Turkish-Dutch bilinguals

Structural priming paradigms have been used extensively to examine syntactic representations and processing in both monolinguals and bilinguals. The discovery that structures can be primed independent of the lexical and functional elements that constitute structures in actual speech established that structures are represented independent of their elements in the mind, suggesting the independence of syntax from other levels of the processing system (e.g., Branigan and Pickering 2017). It has also played a vital role establishing that bilinguals' syntactic choices in one language are primed by previous exposure to constructions in the other language. It is regarded as providing unequivocal evidence of cross-language activation at the syntactic level of processing during sentence production - a finding that was long only investigated at the lexical level (see e.g., Hartsuiker et al. 2004).

Structural priming is not only a methodological tool to tap into linguistic representations but also a real-life mechanism of language use with multiple functions (Ferreira and Bock 2006). It has been argued to drive fluency in communication (e.g., Pickering and Garrod 2004), implicit language learning (e.g., Chang et al. 2006; Dell and Chang 2014), and even language change (e.g., Loebell and Bock 2003; Jaeger and Rosenbach 2008; Pickering and Garrod 2017). Based on these functions, structural priming has recently been proposed to be a possible driving mechanism of contact-induced language change in bilinguals (e.g., Fernández et al. 2017; Kootstra and Muysken 2017; Kootstra and Şahin in press).

One type of bilinguals in which contact-induced change is frequently explored is heritage language speakers. They are bilinguals raised in a home where a non-majority language (i.e., a heritage language) was spoken, which have led them to be able to communicate both in the heritage language and in the majority language (Valdés 2000, p.1). Heritage speakers of Turkish in the Netherlands are one example; this community has been extensively studied with respect to how their L1 Turkish language use has changed compared to Turkish spoken in Turkey as a function of their experience with Dutch (e.g., Demirçay 2017; Doğruöz and Backus 2009, 2010; Onar Valk 2014; Şahin 2015). Most of these studies, however, adopted a sociolinguistic perspective, comparing the linguistic output of different groups of speakers (e.g., different

generations) in either spontaneous interaction or in constructed tasks that elicited narrative speech. There has been some attempt to use structural priming to investigate heritage Turkish in contact with another language from a psycholinguistic perspective, notably Spanish as spoken by Hispanic communities in the US; however, few of these studies used priming as their method. The present study aims to investigate language change in heritage Turkish using structural priming as its method. This also allows us to test the general applicability of structural priming as a method to study Turkish, a language that is not Indo-European and that has received little attention in the structural priming literature so far, and to study the selection of subject pronouns, a structure that has not yet been explored much in structural priming experiments.

Introduction

Structural priming (also ‘structural persistence’ or ‘syntactic priming’) refers to speakers’ tendency to reuse the structures they have recently produced or comprehended (e.g., Levelt and Kelter 1982; Bock 1986; see Pickering and Ferreira 2008, for a review). It was first introduced as a phenomenon in performance (i.e., production). In a classical study, Bock (1986) had people describe pictures of transitive events immediately after they were exposed to prime sentences and demonstrated that participants’ structural choices were influenced by the structure of the prime sentence. For instance, in trials where active sentences were used as primes, participants tended to repeat the structure and use an active sentence rather than a full passive in their utterance. What is more, the priming effect even occurred in the absence of shared lexical content between the prime sentences and the stimulus pictures. This discovery helped to establish that syntactic structures, like lexical characteristics such as phonology and semantics, could be primed, and that the priming effect is independent of meaning, individual words, or sounds that instantiate the structures in a sentence (Branigan and Gibb 2017).

Since Bock’s initial study, the structural priming effect has been replicated many times with different syntactic structures (though mostly with dative and active/passive constructions), in different languages, with different experimental paradigms (speech corpora as well as behavioral and neural measurements) and with a wide range of language users including aphasics, children, and L2 learners (for a review, see Pickering and Ferreira 2008). Today, structural priming is established as a valid measure that

reveals a detailed picture of how humans process and represent syntax (Branigan and Pickering 2017). It became much more than simply a phenomenon; it became a reliable measure in explorations of syntax (Dell and Ferreira 2016).

Structural priming has also been observed in multilingual speakers. Cross-language structural priming was demonstrated for many language pairs such as German-English (e.g., Loebell and Bock 2003), Dutch-English (e.g., Kootstra and Doedens 2016; Schoonbaert et al. 2007), and Spanish-English (e.g., Meijer and Fox Tree 2003; Travis et al. 2017) with different constructions including active/passives (e.g., Hartsuiker et al. 2004), PO/DO alternations (e.g., Cai et al. 2011; Salamoura and Williams 2007), and information structure (e.g., Fleisher et al. 2012). The implication of cross-language priming for bilingual language processing is that a structure in one language can activate a similar structure in the other language (Hartsuiker and Pickering, 2008; Kootstra and Muysken 2017), indicating interactivity between languages at the syntactic level. Therefore, findings about structural priming can inform theoretical models of bilingual language processing and of how languages may influence each other. Structural convergence is a well-documented effect of language contact (e.g., Backus 2004; Montrul 2004), but there is little consensus about the cognitive mechanisms by which it comes about. Providing evidence for cross-language syntactic interaction, cross-language priming points to a possible cognitive mechanism that is implicated in contact-induced language change. It has also been shown to be related to cross-linguistic transfer in second language acquisition (e.g., Flett et al. 2013; Jackson and Ruf 2017; Nitschke et al. 2014; see Jackson, 2017, for a review), and to code-switching (Kootstra et al. 2010, 2012; Fricke and Kootstra 2016).

That structural priming may be a mechanism of language change has been suggested before. Although Loebell and Bock (2003) were the first to mention a potential link between cross-language priming and contact-induced language change, Jäger and Rosenbach (2008) took this one step further and explicitly connected the effects observed in historical linguistics to the mechanisms explored in psycholinguistics by assigning a pivotal role to priming in language change. They suggested that priming could help us to understand the development of a particular preference in performance occurs; people preserve their own choices and repeat them (via priming), strengthening their representations even in the long term (Pickering and Garrod 2017). The ability to retain such choices presupposes the usage-based

perspective that implicit learning is a constant by-product of behavior (Chang et al. 2006; Pickering and Ferreira 2008). Linguistic behavior which is the result of priming may become encoded in grammar over time through the mechanism of implicit learning (Jäger and Rosenbach 2008).

Contact-induced change occurs in contexts in which more than one language is spoken. To the best of our knowledge, only a handful of studies has investigated cross-language structural priming in relation to contact-induced change (e.g., Fernández et al. 2017; Kootstra and Şahin in press; Torres Cacoullos and Travis 2011, 2016). Particularly relevant to our study, Torres Cacoullos and Travis (2011, 2016) investigated subject pronoun expression in a New Mexico variety of Spanish, which has been in contact with English for almost 200 years. Spanish, like Turkish and many other languages, demonstrates *variable subject expression* (also known as ‘pro-drop’). In these languages, the default option in a neutral declarative utterance is to not use an overt pronoun, relying on person-number inflection on the verb for identification of the subject. Often, the use of overt (pronominal) subjects is not exactly optional or redundant but rather motivated by certain pragmatic functions in discourse (Öztürk 2002). Due to this sensitivity to pragmatics, subject pronoun expression has often been considered vulnerable to outside influence in situations of language contact (e.g., Sorace 2011; Sorace and Filiaci 2006).

Effects of language contact on subject pronoun expression have been studied quite extensively in the context of Spanish-English bilingualism in the US. The expected result has often been an increase in the use of Spanish overt subject pronouns, as a result of influence from English, a language in which subjects are always expressed (i.e., overt). However, in many studies this expected increase was not found; at most, they found a loosening of the pragmatic constraints that govern the selection of an overt or a null subject (e.g., Flores-Ferrán 2004; Silva-Corvalán 1994). Interestingly, increases in the frequency of overt subject use *were* reported for other immigrant languages in the US, such as Hungarian and Russian (e.g., Bolonyai 2000; Schmitt 2000), although the more pronounced effects of language contact in these communities might be because they were much more isolated communities than the Spanish speakers in the US.

Torres Cacoullos and Travis (2011, 2016) also looked at Spanish subject pronoun expression in contact with English. Using a corpus of spontaneous bilingual speech of Spanish-English bilinguals in New Mexico, containing frequent code-switching between Spanish and English, they investigated variable subject expression and specifically looked at the role of structural priming. They did not find much evidence for convergence; variable subject expression in New Mexico Spanish was quite similar to that in other Spanish varieties, including ones that are not in contact with English. However, they did observe both within- and cross-language priming effects on subject pronoun expression: Null subjects tended to be followed by null subjects, and overt subjects by overt subjects. Across languages, this was reflected in the observation that the likelihood of using ‘yo’ (meaning ‘I’ in Spanish) after an English utterance that contained ‘I’ was significantly higher than that of using a null subject, pointing to an instantiation of contact-induced change. This finding was refined in a recent study by Travis et al. (2017) in which they controlled for subject continuity in the discourse, which leads to the selection of a null subject across utterances. They still observed a priming effect.

The studies by Torres Cacoullos and Travis (2011, 2016) and Travis et al. (2017) demonstrated cross-language structural priming may play a critical role in subject pronoun selection in bilingual language use. Their findings are informative in at least two ways. First, the reported cross-language priming effect nonetheless points out a degree of association between the languages with regard to the activation of a structure shared between them. Second, knowledge about the pragmatic constraints (e.g., subject continuity) on Spanish subject pronoun expression was well preserved in the sample, which accounts for the result that the rate of subject pronoun expression was similar to that in typical of non-contact varieties of Spanish. If a bilingual community starts to lose such pragmatic constraints on subject pronoun expression, one might expect an even more significant role to cross-language priming as this would increase the similarity with subject pronoun expression in the non-pro-drop language, in which it is pragmatically unmarked. It so happens that, in the case of the Turkish-Dutch community in the Netherlands, this idea can be further tested.

The Turkish-Dutch community in the Netherlands has been well studied for its lexical and grammatical effects of language contact (e.g., Backus 1992; Backus et al. 2013). Although there is no consensus as to whether there *is* an on-going change in

subject pronoun expression in the Turkish spoken in this community, some recent studies suggest some loosening of the pragmatic constraints. In Turkish, the immediate context determines the form the subject of an utterance will take (i.e., expressed or unexpressed). Doğruöz and Backus (2007, 2009, 2010) reported isolated instances of the redundant use of overt subject pronouns, for example when there was no topic change. Doğruöz (2014) did not find a difference in the rates of overt subject use between Turkish spoken in Turkey and in the Netherlands but did observe some instances of *unconventional subject pronoun use* in the latter. She argued that copying a full construction or a fixed expression from Dutch likely caused the unconventionality, the ‘unconventional’ pronouns being found within larger chunks that could well be translations from Dutch. The data used in these studies do not allow an analysis in terms of cross-language priming, as they were taken from conversations entirely in Turkish. However, since code-switching is extremely frequent in in-group conversations in this community (e.g., Demirçay 2016), speakers may well produce such unconventional pronouns in many cases because of cross-language priming from Dutch, resulting in what at a more abstract level looks like the copying of phrase structure from Dutch. To date, no study has directly tested this hypothesis. In this article, we report on a study in which the structural priming paradigm was used to test the hypothesis that exposure to Dutch can prime overt subject pronouns and therefore may contribute to on-going structural change in Turkish spoken in the Netherlands.

This study

Although the number of its explorations and the possible domains to which it can be applied have dramatically increased in the last decade, the current state of structural priming research has yet to reflect syntactic processing in a great variety of languages and the variety of their syntactic structures. The meta-analysis of Mahowald et al. (2016) revealed that the majority of the studies on structural priming has been conducted on English, Dutch, and German. Moreover, most of these studies investigated only a limited set of constructions, primarily including PO/DO alternations (e.g., Kantola and van Gompel 2011; Schoonbaert et al. 2007; Shin and Christianson 2009), and active/passive voice (e.g., Branigan and McLean 2016; Hartsuiker et al. 2004; Vasilyeva et al. 2010).

With regard to the studies on cross-language structural priming in bilinguals, the most often explored language pairs were Dutch-English (e.g., Bernolet et al. 2012; Kootstra and Doedens 2016; Salamoura and Williams 2006; Schoonbaert et al. 2007), German-English (e.g., Loebell and Bock 2003), and Greek-English (e.g., Salamoura and Williams 2007), with recent work starting to explore other pairs such as Spanish-English (e.g., Torres Cacoullos and Travis 2011, 2016), Chinese-English (e.g., Carol and Conklin 2017; Chen et al. 2013) and Korean-English (e.g., Hwang et al. 2017; Shin and Christianson 2009). In order to arrive at a detailed, complete account of syntactic processing, it is important to get contributions on a variety of languages and data from different types of multilinguals.

Although cross-language structural priming provides insights into the mechanisms involved in bilingual language processing, it is not clear to what extent priming effects vary as a function of what the experimental setting demands from speakers. Bilinguals generally only keep their languages separate if the situation demands it. Rather, they make use of a *language mode continuum* with monolingual and bilingual modes at its extremes (Grosjean 1998, 2001). They can position themselves at any point along this continuum as the communicative context demands. For instance, communicating with a monolingual family member would typically require monolingual language use (i.e., a monolingual language mode) whereas talking to a friend who shares both of your languages would easily take you to a bilingual language mode, as long as the community does not frown upon language mixing. The linguistic demands of the discourse context (which can be imposed by the experimental stimulus list composition) have been shown to influence participants' language processing and production (e.g., Marian and Spivey 2003; Wu and Thierry 2010), thus revealing the dynamic and adaptive nature of (bilingual) language use (cf., Green 2011; Green and Abutalebi 2013). Our study also stimulated adaptation to the linguistic demands of the discourse context. For instance, observing a larger priming effect in a bilingual than in a monolingual setting would suggest that priming in bilingual settings may be a factor driving contact-induced language change. We therefore manipulated the language mode invoked in participants in our experimental setting.

The strength of cross-language priming effects may also depend on language dominance. Many early studies with adult bilinguals failed to find an association between cross-linguistic priming and language dominance (e.g., Loebell and Bock 2003;

Meijer and Fox Tree 2003). Yet, some more recent studies have reported stronger cross-language structural priming effects from the dominant to the nondominant language (e.g., Kootstra and Doedens 2016) and from the higher proficiency to the lower proficiency language (e.g., Bernolet et al. 2013; Kootstra et al. 2012). Once bilinguals reach a certain level of proficiency in an L2, they are likely to have formed abstract representations of L2 structures, a precondition for cross-language structural priming (Hartsuiker and Bernolet 2017). Similarly, bilinguals immersed in their L2 may show more cross-language priming effects than those who have not (van Hell and Tanner 2012). Immersion in the L2 often results in speakers becoming more dominant in that language, and this is likely to apply to most of the Turkish-Dutch bilingual individuals in our study. Given the possible modulatory effects of proficiency, dominance and immersion, it is important to understand to what extent the syntactic choices made by Turkish-Dutch bilinguals (i.e., priming effects) may have been influenced by these person-related characteristics.

The Turkish-Dutch community presents a unique opportunity for testing hypotheses about the potential link between structural priming and language change. While it is unclear whether there is on-going change in subject pronoun use in the Turkish of the Turkish-Dutch community, our study allows simulating the micro-processes that could underlie this change in a controlled setting, in the form of a cross-language priming manipulation. If cross-language priming occurs, that would predict that change towards a more Dutch-like convention of subject pronoun use is on-going or imminent. If evidence of such changes continues to be absent, on the other hand, the hypothesis that cross-language priming can lead to contact-induced change needs rethinking. If, on the other hand, we do not find any cross-language priming, that would be consistent with both the idea that cross-language priming may cause structural borrowing and with the current state of the art regarding Turkish as spoken in the immigrant community not having undergone much change in its use of subject pronouns. Thus, we seek to elucidate the potential link between contact-induced change and structural priming. We also aim to explore to what extent the linguistic demands on participants (i.e., what the immediate context demands) and their daily linguistic reality (i.e., being dominant in a certain language) can interfere with priming effects.

Specifically, we wanted to investigate (1) whether structural priming can be used as an experimental method to explore the determinants of subject pronoun use, (2)

whether what has been observed so far about subject pronoun use in Turkish spoken by Turkish-Dutch bilinguals is consistent with data we obtain in the structural priming experiment, (3) whether subject pronoun use varies as a function of the language setting of the experiment, and (4) whether participants' language dominance modulates the priming effects. To investigate these questions, we designed a novel structural priming task in which Turkish-Dutch bilinguals, with varying patterns of language dominance, listened to short audiotaped stories about daily-life events. The stories ended with a sentence that instructed the participants to verbally respond to an imagined interlocutor who was a character in the story. This final sentence served as the prime sentence, and was manipulated in terms of whether the subject pronoun was overt or dropped. This method in which participants are asked to respond to a question/instruction that is manipulated in terms of sentence structure can be related to one of the earliest studies on syntactic priming, by Levelt and Kelter (1982), who asked participants to listen to a question and answer it based on a picture they saw. These questions functioned as prime sentences, and they sometimes started with a proposition and sometimes did not. For instance, the only difference between the pair of questions, *Wie zoekt Paul?* 'Who does Paul search?' and *Naar wie zoekt Paul?* 'Who does Paul search for?', was the preposition 'naar' (for). Both questions could be answered by either using a preposition (e.g., *Naar Toos* 'For Toos') or omitting the preposition and simply saying 'Toos'. Just as the set of questions and answers in Levelt and Kevelt (1982), our set of prime and target sentences differed in terms of whether they contained a particular structure or not (prepositions in their study and subject pronouns here). Neither in their study nor in ours was there a semantic or pragmatic difference between the two versions of the questions (or the prime sentences). Our dependent measure was whether the participants' response had an overt subject or not. To make an analysis of the impact of language mode possible, the stories were in Turkish in one block (creating a monolingual mode) and in Dutch in the other block ('bilingual mode'). The prime sentence and participants' responses were always in Turkish.

By priming the use of overt or null subjects in Turkish, we first of all expected to induce a within-language priming effect on overt subject use. In other words, participants were predicted to use an overt subject after being primed with an overt subject than a null subject. We predicted that participants would perform differently in the monolingual and the bilingual settings, based on the assumption that the

experimental items provided in Dutch would activate syntactic representations in Dutch, resulting in cross-language activation. Although the experimental task would always require participants to respond in Turkish, the cross-language activation was predicted to increase participants' subject pronoun use, resulting in higher rates of overt subject use in the bilingual than in the monolingual condition. Finally, we predicted that speakers who were more dominant in Dutch would have a higher tendency to produce overt subjects rather than null subjects. Overall, finding a cross-language structural priming effect would (1) lead to novel findings of structural priming with a new method in a community of language users in which structural priming has not yet been studied, (2) provide input for theory development regarding the role of priming in contact-induced change, and (3) demonstrate the value of structural priming as a method to investigate a so far underexplored structural domain, i.e. subject pronoun selection.

Method¹

Participants

28 Turkish-Dutch bilinguals (10 males), aged between 18 and 49 ($M = 33.64$, $SD = 11.87$), participated in the experiment. They were recruited via brochures and poster advertisements, visits to neighborhoods where inhabitants with a Turkish origin formed the majority, and through personal contacts. All had acquired Turkish as their native language, had acquired Dutch as L2, and were able to communicate both in Turkish and in Dutch. These criteria allowed a sample that would include various types of bilinguals, such as early or late bilinguals, or bilinguals who were dominant in Turkish or in Dutch. All participants were residents of the Netherlands, and they were recruited in the cities of Nijmegen, Rotterdam and Schiedam. They had normal or corrected vision and hearing, and no history of language impairments. They gave their written informed consent prior to the experiment and were compensated for their involvement with a €10 gift card.

Possible sources of individual variation were measured using the Bilingual Language Profile (BLP; Birdsong Gertken and Amengual 2012), a self-report questionnaire developed to assess functional language abilities of bilingual populations. This instrument consisted of 19 questions about the language history, use, proficiency, and

¹ The dataset and the code used to conduct the analyses and generate the figures will be made publicly available with the final version of this article.

attitudes of the bilinguals, and aimed to provide a general bilingual profile based on these linguistic variables. The questionnaire was translated from English into Turkish and Dutch, since it was not yet available for this language pair. Participants were free to fill out the questionnaire in whichever language they felt most comfortable with. A set of questions regarding demographic characteristics were added to the BLP measure to have a better understanding of the individual variation within the sample. Table 1 demonstrates the background information obtained through the BLP measure from the sample of our study.

Design and Materials

Design. The current study employed a 2x2 within-subjects factorial design with the factors *language mode* (monolingual versus bilingual setting) and *primed structure* (overt subject pronoun versus null). This design resulted in four experimental conditions, which are illustrated in Table 2. Every participant received all four experimental conditions. The dependent variable was the form of the subject pronoun participants used in their responses. This was a dichotomous variable; overt pronoun or null. Participants' language dominance scores, which were obtained through the BLP measure, was a continuous variable which served as a covariate. Dominance in Turkish was represented with negative scores and dominance in Dutch with positive scores. A score of zero would mean being equally dominant in both languages.

Stimuli. Given the strong interdependence between pro-drop and pragmatic contexts, we intended to prime the use of subject pronouns within a pragmatic context that allowed for pro-drop. Accordingly, we created a set of stimuli that provided this particular pragmatic context, consisting of sentences that could grammatically contain an overt or a null subject pronoun. We also intended to investigate whether a bilingual speech environment would have an effect on subject pronoun use. Therefore, we created both Turkish and Dutch versions of the stimuli set. 12 items per experimental condition were targeted, which resulted in a total of 48 items.

The stimuli consisted of 48 short stories and their prime sentence. The stories contained 2 or 3 sentences each, with an average word count of 13.62 in Turkish and of 20.21 in Dutch². The stories were about typical, daily-life events, such as planning a

² The difference in word count between Turkish and Dutch can be explained by the fact that Turkish is an agglutinative language, in which multiple meaning elements are combined into single words. In

vacation, or meeting up with friends (see Appendix for a complete list). In these events, there were always two or more characters that were interacting, and the stories were told as if the participant was one of the characters. At some point in this interaction, the participant was asked to say something to the fictional character(s) from the story. This request was conveyed to the participant in the form of an instruction sentence, which immediately followed the story. This instruction was *the prime sentence*, and it was manipulated in terms of whether it contained a subject pronoun or not.

The variety of events and characters across the stories allowed some variation in the pronominal subject that the participants could use in their responses. The prime sentences aimed to elicit 4 out of the 6 possible subject pronouns from participants; 1st person singular *ben*, 2nd person singular *sen*, 1st person plural *biz*, and 2nd person plural *siz*. The third person subject pronouns do not encode gender and animacy in Turkish. In cases of more than one same-sex character in a story, this situation may lead to the use of a nominal instead of a pronominal subject to avoid ambiguity of the referent. Since we wanted to facilitate the use of subject pronouns as much as possible, the prime sentences never elicited third person pronouns.

By making the prime sentence an integrated part of the story we hoped the priming manipulation would go unnoticed for the participants, increasing the ecological validity of the experiment. In addition, the prime sentences contained all the lexical items that the participants needed to formulate their response. For instance, with a prime sentence such as *Arkadaşına sinemaya gelemeyeceğini söyle* ‘Tell your friend you cannot come to the cinema’, the intended target sentence is *Sinemaya gelemeyeceğim* ‘I cannot come to the cinema’. This way, we controlled for the degree of lexical variability in the participant’s target responses as much as possible, and made sure that the participant would only need to decide on the syntactic structure of his/her response.

We wanted participants to imagine themselves as one of the characters in the stories. One way to accomplish this was to use the 2nd person singular pronoun *sen* as the subject of the sentences in the short stories so that they would directly address the listener (i.e., the participant). However, it was also important that participants would not be exposed to subject pronouns apart from the priming manipulation (i.e., the prime

Dutch, these multiple meaning elements tend to be expressed in separate words, thus leading to more words per sentence.

sentence). Therefore, we used a nominal phrase (e.g., *your mother*) or a relative clause (e.g., *the clothes you bought online*) as the syntactic subject in the stories.

Given that pronoun use is pragmatically-conditioned in Turkish, it was essential to make sure the pragmatic context created in the stimulus items did not require the use of the overt subject pronoun in the response. We therefore constructed the stories to create a pragmatic context that would allow pro-drop. This way, participants would be free to use the subject pronouns in either form (null or overt), because both forms are grammatical in such neutral pragmatic contexts in Turkish.

The stories were first created in Turkish, and then translated into Dutch to be used to invoke a bilingual mode (see Procedure section for how the items in Dutch and Turkish were counterbalanced across participants). Two additional stories were created and used in a practice session preceding the actual experiment. Digital audio recordings of the stories were made with a female speaker of each language reading the stories out loud, using the audio editing and recording software Audacity (v2.2.2) in a soundproof recording booth. The audio files (sampled at 44100 Hz; two channels; with an average duration of 6.39s in Turkish and of 7.81s in Dutch) were processed and normalized in Audacity to make sure that all files would have the same peak amplitude.

Procedure

To provide an automated and identical experimentation experience for each participant, the experiment was programmed in OpenSesame v3.2.5 (Mathôt, Schreij and Theeuwes 2012). Instead of the default audio player of OpenSesame, we used an external plugin to play the audio files with minimal delay (https://github.com/dev-jam/opensesame_plugin_-_audio_low_latency).

To create monolingual and bilingual settings, the experiment was conducted in two blocks. In the first (monolingual) block, both the stories and prime sentences were in Turkish. In the second (bilingual) block, the stories were in Dutch but the prime sentences were in Turkish (see Table 2 again). Each block consisted of 24 items, and the monolingual block always came first. Having this fixed block order eliminated the possibility that language co-activation induced by a bilingual trial did not fade away in time before it could influence activation in a subsequent monolingual trial (see e.g., Misra et al. 2012, and Kootstra and Doedens 2016, for evidence of cross-language

activation across experimental blocks). With a fixed order of blocks, a 4x4 Latin Square was used to counterbalance the presentation of the stories and prime sentences in each condition across participants. The Latin Square resulted in four variants of the experiment. Within each block, the experimental items were presented in a random order that was unique for each participant.

Each participant was individually tested and randomly assigned to one of the four variants of the experiment. They received an informed consent form that briefly explained the purpose of the study and the requirements for each task. The experimenter repeated the information given in the informed consent form in oral form. Participants were told that the study intended to explore how people complete stories. They would be listening to a set of stories through headphones, and each story would end by asking them to say something. They were instructed to listen to the stories carefully and formulate a one-sentence response in Turkish. They would need to say this response out loud because it would be recorded by an audio recorder. To minimize the danger that this experimental paradigm would elicit responses that would not be comparable across different individuals, the participants were cautioned about what they should not do. Participants should not summarize the stories or be creative in shaping the content or the style of their responses. They should simply provide a suitable one-sentence response, and its content should contain the information they were asked to convey.

After the instructions were conveyed, participants were invited to work on a practice block together with the experimenter. The practice block consisted of two monolingual trials (i.e., two practice stories in Turkish) and simulated the experimental task. At the end of each trial, the target response of that trial appeared on the screen and functioned as feedback. This target response always featured a null subject pronoun, as the null subject can be considered the default option in Turkish. If we had used an overt subject here, participants could become aware of the fact that we aimed to investigate subject pronoun use (for this reason, the null subject was considered as the baseline throughout the study). The experimenter told the participant that this sentence was a prototypical answer to show what was expected from them. The practice block was also a last opportunity for participants to ask questions if they needed clarification. After the practice block was over, the experimenter left the room and the participant went through the experimental blocks unsupervised. When the experimental blocks were completed, the participant was asked to fill out the language dominance questionnaire on the

computer. The experimental blocks (including the practice block) took approximately 30 to 40 minutes to complete whereas the questionnaire took 10 to 15 minutes. Participants were thanked for their involvement, handed a gift card, and informed that no deception took place in the study.

Coding of responses

The current study aimed to investigate the subject pronoun use in L1 Turkish. Therefore, the essential coding category was the form of the subject pronoun used in them. However, it was also possible that participants could provide responses that did not contain a subject pronoun. Yet, the total exclusion of all the responses without a subject pronoun would be a mistake. In cases the use of non-pronominal subjects varied systematically across conditions, the use of different types of subject would be informative and need to be included in the analyses. We therefore coded responses for two variables; the type of the syntactic subject of the response, and (in cases a response had a subject pronoun) the form of the subject pronoun. We defined the levels for each variable as following: A syntactic subject could be a nominal phrase, a personal pronoun, or else (e.g., dummy subjects). If the subject is a personal pronoun, it could either be null or overt.

Results

The participants produced a total of 1344 responses (for 48 items and 28 participants; $48 \times 28 = 1344$), of which only 8 were null responses (i.e., missing data points) due to participants' occasional loss of interest or failure to provide a response.

Data preprocessing

Of the remaining responses, 60 responses were excluded due to being *not eligible* for coding. As the experimental task was a free production task, the obtained responses could vary across participants, for example in the syntactic structure they instantiated, or participants could use a subject pronoun for a pragmatic reason that not invoked by the experimental stimuli. Therefore, a response was considered to be *not eligible* and excluded from further analyses if it met at least one of the following conditions; 1) being an incomplete sentence (i.e., having no predicate), 2) having a subject pronoun due to topic change in discourse, 3) having the form of a relative clause, 4) having no semantic relation to the target sentence because the participant did not listen to or

misunderstood the story, 5) having a subject pronoun that was part of a false start (a change of thought in the middle of the utterance), and 6) consisting of more than two sentences because, with every syntactic subject used, the pragmatic context in which the response was given became more complicated.

Another source of variation was the length of the responses. Although the instructions conveyed to the participants repeated that they should provide one-sentence responses, some individuals produced longer responses anyway. As previously stated, the responses which consisted of more than two sentences were automatically excluded. However, if the first sentence of a given response 1) had a syntactic subject and 2) was semantically related to the target sentence, that sentence was kept in the data set while the rest of the response was excluded. If the first sentence did not meet the criteria, the second sentence was examined. If it did not meet the criteria either, the whole response was excluded from further analyses. The motivation behind these criteria was that we intended to make sure that all syntactic subjects (pronominal or not) in the responses were produced within the pragmatic context induced by our stimuli. After data preprocessing, a total of 1175 responses remained in the dataset to be used in further analyses.

Mixed-effects logistic regression analysis

Fig. 1 presents the percentages of using an overt subject pronoun per experimental condition (see Table 4 for descriptive statistics). A glance at the percentages suggests that subject pronoun use seemed to stay the same regardless of the priming manipulation but that it slightly varied across monolingual and bilingual settings.

A mixed logit model was fitted to assess whether the subject pronoun use varied as a function of language mode, primed structure, and language dominance using the lme4 package (v1.1.19) (Bates et al. 2015) in R v3.4.4 (R Core Team 2018). Mixed logit models are suitable for analyses of binomially distributed outcomes while accounting for subject and item variance in the model (see e.g., Baayen et al. 2008). The outcome variable was whether the response contained a null (coded as 0) or an overt subject pronoun (coded as 1). The random effects for subjects ($n = 28$) and items ($n = 48$) were added to the model. The categorical variables *language mode* and *primed structure* were coded as taking the levels ‘monolingual mode’ and ‘null pronoun priming’ as baseline conditions, respectively. By doing so, we made sure the coefficients in the

model output reflected each predictor's contribution on the log odds that the target response would contain an overt subject pronoun.

The final model was reached through a number of model comparisons. The first model was fitted including the fixed factors language mode, primed structure and dominance, and all possible random effect structures. Then, the model comparisons were used to check whether the included variables and random effect structures contributed to the model fit, and the model was simplified accordingly. When the model with the fully specified random effect structures failed to converge or led to singular fit, the random effect structures that explained least variance were left out one by one until the model converged again. The only random effect structures included in the final model at the end of this process were random intercepts for participants and items. The statistics of beta coefficients and their z and p values for the models were obtained by using the lmerTest package (v3.0.1) in R (Kuznetsova et al. 2017). Each of the main effects and interaction effects obtained from the mixed-effects logistic regression analysis were plotted by using the effects package (v4.0.2) in R (Fox 2003). Table 3 demonstrates the results of the mixed-effects logistic regression analysis on the participants' likelihood to use an overt subject pronoun.

Language mode was a significant predictor in this model; the likelihood of using an overt subject pronoun was higher in a monolingual than a bilingual setting. Although primed structure, i.e., previous exposure to a null or an overt subject pronoun, did not predict overt subject use, its interaction with language mode did: Participants were more likely to use an overt subject pronoun after being primed with an overt subject pronoun in the bilingual than in the monolingual condition, indicating a larger priming effect in the former. There was a marginally significant interaction between primed structure and participants' language, revealing a trend of stronger priming effects in Dutch-dominant participants than in Turkish-dominant participants.

Discussion

The present study explored the potential role of structural priming in changing the way subject pronouns are used in Turkish by Turkish-Dutch bilinguals. Specifically, we used a language production experiment to see whether an increase in the use of overt subject pronouns could be induced as a function of cross-language structural priming. This study was innovative for having studied structural priming in the form of question-

answer pairs embedded in a story context. In daily life people often encounter questions that they need to respond to, and simulating such contexts in our experiment adds to the ecological validity of the present study. This is also the very first study that used experimentally induced structural priming as a method to explore an issue relevant for the study of contact-induced change, in this case, in the Turkish spoken by Turkish-Dutch bilinguals. To be sure, previous studies have not reported any systematic differences between monolingual speakers of Turkish and Turkish-Dutch bilinguals in terms of how frequently they used null and overt subject pronouns although they have sometimes pointed out that there is some degree of unconventionality in the use of subject pronouns by bilinguals (e.g., Doğruöz 2014). This study aimed to find out whether this unconventionality in subject pronoun use can (at least in part) be driven by cross-language structural priming.

The current study had four aims; (1) to simulate the contact-induced change that has been claimed to be going on in Turkish spoken by Turkish-Dutch bilinguals by inducing cross-language structural priming, (2) to revisit the issue of applicability of structural priming to subject pronouns in a controlled experiment, differently from the recent works by Torres Cacoullos and Travis (2011, 2016) and Travis et al. (2017) that used speech corpora, (3) to see whether subject pronoun use varies in monolingual and bilingual settings, and (4) to understand to what extent language dominance could modulate priming effects in bilinguals. To tackle these issues, we designed a language production experiment in which we used structural priming as our method. Turkish-Dutch bilinguals were presented with a set of audiotaped stories in Turkish or Dutch, and then primed with a sentence in Turkish containing either a null or an overt subject pronoun. The stories were constructed to elicit a particular pragmatic context in which it would be grammatical to use either a null or an overt subject pronoun. Each story ended with a prime sentence that instructed participants to prepare a response in Turkish to be said to an interlocutor from the story. Prime sentences were integrated into the stories both structurally and semantically, which in turn helped keep the priming manipulation unnoticed. We investigated these priming effects both in a monolingual and a bilingual setting by having participants listen to half of the stories in Dutch (creating a bilingual mode). Participants' language dominance was measured with a questionnaire and checked for whether it could modulate the priming effects.

Our results revealed a main effect of language mode (i.e., higher likelihood of using an overt subject in the monolingual than in the bilingual setting) and an interaction between language mode and primed structure (i.e., higher likelihood of using an overt subject in the bilingual setting than in the monolingual setting after being primed with an overt rather than a null subject). Dominance was found to marginally interact with primed structure, resulting in a stronger priming effect in Dutch-dominant participants than Turkish-dominant participants. There was no significant three-way interaction between language mode, primed structure and dominance.

We expected to find a cross-language priming effect in the bilingual condition following the priming of overt subjects, and this expectation was confirmed by the significant interaction between language mode and primed structure yielded by the analysis. This result indicates that cross-language interactions (in our case, bilingual priming effects) are particularly likely to occur in a discourse setting in which both languages are actively used. This is consistent with the language mode hypothesis (Grosjean 2001), as well as with work by Green and Abutalebi (2013), who argue that language use patterns are tightly connected to the presence of multiple languages in the interactional context. Relating the observed results to real-life language use of Turkish-Dutch bilinguals in the Netherlands, it can be assumed that using more than one language on a regular basis can lead to similar forms of cross-language priming, with potential implications for language change. Regular use of and exposure to two languages can influence (and even transform) the linguistic competence of bilinguals in the long term. This relationship between bilingualism and language change can be linked to the implicit learning account of structural priming, in which priming is regarded as involving a persistent and cumulative effect (e.g., Bock and Griffin 2000; Hartsuiker and Bernolet 2017). We share the implicit learning account's view of structural priming as a mechanism of bilingual language use and interpret the cross-language priming effect we observed as a potential factor driving language change. Thus, from this perspective, the results obtained in the current study are consistent with recently formulated accounts that view (cross-language) structural priming as a potential mechanism underlying (contact-induced) language change (Fernández et al. 2017; Jäger and Rosenbach 2008; Kootstra and Doedens 2016; Kootstra and Şahin in press; Pickering and Garrod 2017; Travis et al. 2017). As a psycholinguistic mechanism, structural priming may be increasing the chance with which structural change in contact

settings occurs. In our study, this means that cross-language priming from Dutch to Turkish induced by the bilingual setting was successful in simulating a potentially on-going change in subject pronoun use in Turkish spoken by Turkish-Dutch bilinguals.

The current study did not directly investigate the influence of Dutch on Turkish subject pronoun use. Rather, it made use of the fact that there is unconventional variation in the use of subject pronouns by Turkish-Dutch bilinguals (although not always easily observable; see Doğruöz 2014), which is likely to be caused by the contact between Dutch and Turkish in these speakers. Thus, the unconventional variation of subject pronoun use as observed in corpora of Turkish-Dutch bilingual language use can be explained as a form of contact-induced language change in process. Our simulation of this contact-induced variation in subject pronoun use by inducing cross-language structural priming in Turkish-Dutch bilinguals can be considered as providing support for the link between contact-induced change and cross-language priming. It also shows the potential value of integrating psycholinguistics into the field of contact-induced change in explaining the mechanisms involved in the conventionalization of changes within the individuals of a speech community (cf. Jäger and Rosenbach 2008). Acknowledging the cognitive component involved in language change by adopting structural priming as our method, we showed which cognitive mechanisms are potentially involved in the on-going change in subject pronoun use in Turkish spoken by Turkish-Dutch bilinguals.

Whereas the interaction between primed structure and language mode confirmed our prediction on the factors that may be involved in contact-induced variation in subject pronoun use, we also observed some unexpected patterns of results. One such result was that, when focusing on the manipulation of language mode as a main effect, participants' likelihood of using an overt object was in fact lower if they were in the bilingual than in the monolingual condition – we had expected it to be the other way around. This reverse pattern may be due to the participants' conscious efforts to speak 'proper' Turkish, meaning to speak Turkish like a monolingual speaker of Turkish would. With regard to the bilingual condition, many participants reported that they found it difficult to give their responses in Turkish after hearing the stories in Dutch. That they found it difficult to switch languages may have led them to speak more 'proper' Turkish, resulting in the pattern that we would expect to see in monolingual

speakers of Turkish (i.e., favoring null subjects when their use is grammatical). The difficulty with switching from Dutch to Turkish may also have been caused by inhibition processes (e.g., Abutalebi and Green 2008; Green 1998; Green and Abutalebi 2013). The participants also reported insecurity about their level of Turkish, which may have been worsened because of communicating with a Turkish-speaking experimenter who was not immersed in an L2 as they had been. Altogether these factors may account for the lower likelihood of overt pronoun use in the bilingual condition.

Another unexpected finding was that unlike in the earlier experiments on structural priming in production (e.g., Bernolet et al. 2013; Schoonbaert et al. 2007) and corpus studies on structural priming of subject pronouns in bilingual speech (e.g., Torres Cacoullos and Travis 2011, 2016; Travis et al. 2017) that reported priming effects both within the same language and across languages, we did not observe a within-language priming effect for overt subject use in Turkish. The absence of a within-language priming effect is surprising, especially given the high amount of lexical overlap between the prime and the target sentences in our study. Lexical overlap between primes and targets has been shown to modulate the priming effects in production studies (e.g., Segaert et al. 2011). In our study, the target sentences we expected the participants to produce in their responses had a maximal lexical overlap with the prime sentences. However, whether or not there is a lexical boost effect is unclear in our study because our design did not have a control condition which did not involve lexical overlap.

The absence of an effect of within-language priming even in the presence of a maximal lexical overlap between prime and target sentences may be due either to (1) the failure of the priming manipulation, or to (2) the frequent use of subject pronouns in daily speech insulating this structure from priming effects. We may assume that in daily speech speakers produce or encounter many utterances that contain a subject pronoun (overt or null), because most of the conversations we have during the day is about 'people', either ourselves or others. This high frequency of use of subject pronouns in daily speech may have helped to maintain this grammatical structure even in a language contact context (Bybee 2006). On the other hand, the cross-language priming effect found in our study points out that the presence of another language (i.e., the bilingual mode) can penetrate into this well-preserved system. Moreover, the cross-language priming effect demonstrates that the priming manipulation in the condition where the effect was found was successful. The cross-language priming effect cannot

be only an extension of the effect of language mode; the effect of language mode predicted the use of overt pronouns to be higher in the monolingual mode whereas the cross-language priming effect predicted it to be higher in the bilingual mode.

The absence of an effect of within-language priming even in the presence of a maximal lexical overlap between prime and target sentences may be due to that subject pronouns may not be a "structure" as much as other structures that were typically investigated in relation to structural priming, such as grammatical voice or dative constructions, because their presence is determined by their surrounding pragmatic context. Therefore, they may not be suitable for structural priming in experimental settings (although they have been reported to be subject to priming in the corpus studies of Torres Cacoullos and Travis (2011, 2016) and Travis et al. (2017)). We do not agree with this possibility, because in our study the priming manipulation did make a difference when the participants were in the bilingual mode. It is exactly this bilingual contact setting that was assumed to cause unconventionalities in previous studies on subject pronoun use in Turkish-Dutch bilinguals. Therefore, it can be assumed that the bilingual setting leads to more variation and flexibility in subject pronoun use, as reflected in the fact that priming *did* occur in the bilingual setting. This differentiation in linguistic choices as a function of the interactional context can be related to, for example, Green and Abutalebi (2013), who have proposed that bilinguals' linguistic choices (and the control processes guiding these choices) are likely to differ in single-language contexts compared to dual-language contexts. It may very well have been the case that the participants in our study used a more flexible form of control in the bilingual mode (i.e., dual-language context) compared to in the monolingual mode (i.e., single-language context).

A closer look at the characteristics of our sample and of the language contact situation that our sample has been experiencing reveals further support for our argument that subject pronouns in Turkish are still well-maintained in Turkish-Dutch bilinguals but nonetheless prone to change in the presence of other language(s). Our hypotheses regarding the effects of language mode, priming, and their interaction were mostly based on the study by Travis et al. (2017), who reported significant effects of both within-language (i.e., Spanish to Spanish) priming and cross-language priming (i.e., Spanish to English) in overt subject pronoun use. The differences in characteristics of the sample in their study and our sample can also explain the absence of a within-

language priming effect in our data. Travis et al. (2017) investigated priming effects in a bilingual speech corpus collected from northern New Mexican Hispanic Spanish-English bilinguals, who were at least third-generation immigrants living in New Mexico. The contact between Spanish and English has existed for almost 200 years whereas Turkish and Dutch have a history of contact for just over 50 years. Due to the relatively short history of contact and the continuous influx of new migrants, bilingual speakers that formed our sample consisted of first- and second-generation immigrants. The bilingual speakers in the corpus used by Travis et al. (2017) were also reported to regularly use both Spanish and English in their daily lives, and to use both languages with the same interlocutors. The priming effects they observed might be due to the intensive and regular bilingual language use in the daily life of that particular bilingual community. The contexts and interlocutors of daily speech in the case of Turkish-Dutch bilingualism have been repeatedly reported to show great variation across speakers, both in first- and second-generation immigrants (e.g., Sevinç 2014). Since our sample consisted of first- and second-generation immigrants, our sample can be assumed to have a greater variance in terms of the contexts in and the interlocutors with which they use Dutch and Turkish compared to the sample in Travis et al. (2017). The large variation observed among individuals, the relatively short history of contact between Turkish and Dutch, and the considerable preservation of subject pronoun expression in our sample altogether may have led the speakers to be less vulnerable to the priming manipulation in our study.

With regard to language dominance, a recent study from Kootstra and Doedens (2016) reported cross-language structural priming effects from the dominant to the non-dominant language. Accordingly, we hypothesized that participants' dominant language would modulate the priming effects. We did not find an effect of the within-language priming but we observed that language dominance had a slight influence on the within-language priming effects. In particular, Turkish-dominant participants were more likely to use an overt subject if primed with an overt subject, and use a null subject if primed with a null subject. The pattern was reversed in Dutch-dominant participants; they were more likely to use overt subjects after null subjects, and null subjects after overt subjects. One should not overinterpret this interaction effect found between within-language priming and language dominance, given that the effect was very small and only marginally significant (see Table 3 again). More data should be collected in

future studies in order to be able to draw firm conclusions on this point. In addition, it may well be that in our specific population of bilinguals; language dominance is a more complex and multi-faceted phenomenon than in other studies in which it has been found to predict linguistic choices.

The speakers tested in the study of Kootstra and Doedens (2016), for example, were native speakers of Dutch, residing in the Netherlands, who learned English as a second language and had been moderately proficient in English based on the self-ratings collected from them. All participants were dominant in Dutch. On the other hand, our sample consisted of immersed bilinguals, who were born into a Turkish-speaking family (regardless of the country they were born in) and started learning Dutch in a full immersion context. It can be assumed that the concept and role of language dominance is less straightforward in the context of immigration/immersion than in the context of second language learning. Future studies in which these different populations of bilinguals are directly compared may shed

Conclusion

Using a structural priming experiment, we found a cross-language structural priming effect on the use of overt subject pronouns in Turkish spoken by Turkish-Dutch bilinguals. Contrary to our expectation, the participants were less likely to use an overt subject pronoun in the bilingual than the monolingual mode. These findings together show how different interactional contexts can influence linguistic choices and how structural priming as a cognitive mechanism may play a role in the unconventional variation in subject pronoun expression in Turkish spoken in the Netherlands, and they are in line with the usage-based approaches to language change (e.g., Backus 2014) and with the accounts which emphasized the role of cognition besides other factors in contact-induced language change (e.g., Fernández et al. 2017; Kootstra and Şahin in press; Pickering and Garrod 2017). Our study contributes to the field of contact-induced change by being the very first study which adopted structural priming to experimentally investigate the change in subject pronoun expression, and to the field of structural priming in general by providing data from a language (i.e., Turkish) that has not been investigated in relation to structural priming before. The results presented here lend support to the argument that cross-language priming may be a cognitive mechanism of implicit learning which drives language change in the

long run and can thus lead to language contact phenomena, such as contact-induced language change.

References

- Abutalebi, J., & Green, D. W. (2008). Control mechanisms in bilingual language production: Neural evidence from language switching studies, *Language and Cognitive Processes*, 23(4), 557–582, doi:10.1080/01690960801920602
- Backus, A. (1992). Patterns of language mixing: A study in Turkish-Dutch bilingualism. Wiesbaden, Germany: Harrassowitz.
- Backus, A. (2004). Convergence as a mechanism of language change. *Bilingualism: Language and Cognition*, 7(2), 179–181. doi:10.1017/S1366728904001567
- Backus, A. (2014). Towards a usage-based account of language change: Implications of contact linguistics for linguistic theory. In R. Nicolaï (Ed.), *Questioning language contact*. (Chap. 3). Leiden, Boston: Brill.
doi:10.1163/9789004279056_005
- Backus, A., Demirçay, D. & Sevinç, Y. (2013). Converging evidence on contact effects on second and third generation immigrant Turkish. *Tilburg Papers in Culture Studies*, 51. Retrieved from
https://www.tilburguniversity.edu/research/institutes-and-research-groups/babylon/tpcs/download-TPCS_51_BackusDemircaySevinc.pdf.htm
- Baayen, R., Davidson, D. & Bates, D. (2008). Mixed-effects modeling with crossed random effects for subjects and items. *Journal of Memory and Language*, 59(4), 390–412. doi:10.1016/j.jml.2007.12.005
- Bates, D., Mächler, M., Bolker, B. & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1), 1–48.
doi:10.18637/jss.v067.i01
- Bernolet, S., Hartsuiker, R. J., & Pickering, M. J. (2012). Effects of phonological feedback on the selection of syntax: Evidence from between-language syntactic priming. *Bilingualism: Language and Cognition*, 15(3), 503–516.
doi:10.1017/S1366728911000162
- Bernolet, S., Hartsuiker, R. J. & Pickering, M. J. (2013). From language-specific to shared syntactic representations: The influence of second language proficiency

- on syntactic sharing in bilinguals. *Cognition*, 127(3), 287–306.
doi:10.1016/j.cognition.2013.02.005
- Birdsong, D., Gertken, L. M. & Amengual, M. (2012). Bilingual language profile: An easy-to-use instrument to assess bilingualism. *COERLL, University of Texas at Austin*.
- Bock, K. (1986). Syntactic persistence in language production. *Cognitive Psychology*, 18(3), 355–387. doi:10.1016/0010-0285(86)90004-6
- Bock, K. & Griffin, Z. M. (2000). The persistence of structural priming: Transient activation or implicit learning? *Journal of Experimental Psychology: General*, 129(2), 177–192. doi:10.1037/0096-3445.129.2.177
- Bolonyai, A. (2000). *The hidden dimensions of language contact: The case of Hungarian-English bilingual children*. University of South Carolina.
- Branigan, H. P., & Gibb, C. L. (2017). Structural Priming. In A. M. B. de Groot & P. Hagoort (Eds.), *Research Methods in Psycholinguistics and the Neurobiology of Language: A Practical Guide* (pp. 130–150). Oxford: Wiley.
- Branigan, H. P., & McLean, J. F. (2016). What children learn from adults' utterances: An ephemeral lexical boost and persistent syntactic priming in adult–child dialogue. *Journal of Memory and Language*, 91, 141–157.
doi:10.1016/j.jml.2016.02.002
- Branigan, H. P. & Pickering, M. J. (2017). An experimental approach to linguistic representation. *Behavioral and Brain Sciences*, 40(e282), 1–18.
doi:10.1017/S0140525X16002028
- Bybee, J. (2006). From usage to grammar: The mind's response to repetition. *Language*, 82(4), 711–733. doi:10.1353/lan.2006.0186
- Cai, Z. G., Pickering, M. J., Yan, H., & Branigan, H. P. (2011). Lexical and syntactic representations in closely related languages: Evidence from Cantonese–Mandarin bilinguals. *Journal of Memory and Language*, 65(4), 431–445.
doi:10.1016/j.jml.2011.05.003

- Carrol, G., & Conklin, K. (2017). Cross language lexical priming extends to formulaic units: Evidence from eye-tracking suggests that this idea ‘has legs’. *Bilingualism: Language and Cognition*, 20(2), 299-317. doi:10.1017/S1366728915000103
- Chang, F., Dell, G. S. & Bock, K. (2006). Becoming syntactic. *Psychological Review*, 113(2), 234–272. doi:10.1037/0033-295X.113.2.234
- Chen, B., Jia, Y., Wang, Z., Dunlap, S., & Shin, J. A. (2013). Is word-order similarity necessary for cross-linguistic structural priming?. *Second Language Research*, 29(4), 375-389. doi:10.1177/0267658313491962
- Dell, G. S. & Chang, F. (2014) The P-chain: Relating sentence production and its disorders to comprehension and acquisition. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 369(1634), 20120394. doi:10.1098/RSTB.2012.0394
- Dell, G. & Ferreira, V. (2016). Thirty years of structural priming: An introduction to the special issue. *Journal of Memory and Language*, 91, 1–4. doi:10.1016/j.jml.2016.05.005
- Demirçay, D. (2017). *Connected languages: Effects of intensifying contact between Turkish and Dutch*. Utrecht: LOT.
- Doğruöz, A. S. (2014). On the borrowability of subject pronoun constructions in Turkish–Dutch contact. *Constructions and Frames*, 6(2), 143–169. doi:10.1075/cf.6.2.02dog
- Doğruöz, A. S. & Backus, A. (2007). Postverbal elements in immigrant Turkish: Evidence of change? *International Journal of Bilingualism*, 11(2), 185–220. doi:10.1177/13670069070110020301
- Doğruöz, A. S. & Backus, A. (2009). Innovative constructions in Dutch Turkish: An assessment of ongoing contact-induced change. *Bilingualism: Language and Cognition*, 12(1), 41–63. doi:10.1017/S1366728908003441
- Doğruöz, A. S. & Backus, A. (2010). Turkish in the Netherlands: Development of a new variety. In M. Norde, B. de Jonge & C. Hasselblatt (Eds.), *Language*

- contact. New perspectives* (pp. 87–102). Amsterdam: John Benjamins Publishing.
- Fernández, E. M., De Souza, R. A. & Carando, A. (2017). Bilingual innovations: Experimental evidence offers clues regarding the psycholinguistics of language change. *Bilingualism: Language and Cognition*, 20(2), 251–268. doi:10.1017/S1366728916000924
- Ferreira, V. S., & Bock, J. K. (2006). The functions of structural priming. *Language and Cognitive Processes*, 21(7-8), 1011–1029. doi:10.1080/01690960600824609
- Fleischer, Z., Pickering, M. J., & McLean, J. F. (2012). Shared information structure: Evidence from cross-linguistic priming. *Bilingualism: Language and Cognition*, 15(3), 568-579. doi:10.1017/S1366728911000551
- Flett, S., Branigan, H. P., & Pickering, M. J. (2013). Are non-native structural preferences affected by native language preferences?. *Bilingualism: Language and Cognition*, 16(4), 751-760. doi:10.1017/S1366728912000594
- Flores-Ferrán, N. (2004). Spanish subject pronoun use in New York City Puerto Ricans: Can we rest the case of English contact? *Language Variation and Change*, 16(1), 49–73. doi:10.1017/S0954394504161048
- Fox, J. (2003). Effect displays in R for generalised linear models. *Journal of Statistical Software*, 8(15), 1–27. doi:10.18637/jss.v008.i15
- Fricke, M. & Kootstra, G. J. (2016). Primed code-switching in spontaneous bilingual dialogue. *Journal of Memory and Language*, 91, 181–201. doi:10.1016/j.jml.2016.04.003
- Green, D. W. (1998). Mental control of the bilingual lexico-semantic system. *Bilingualism: Language and Cognition*, 1(2), 67-81. doi:10.1017/S1366728998000133
- Green, D. W. (2011). Language control in different contexts: The behavioral ecology of bilingual speakers. *Frontiers in Psychology*, 2(103), 1-4. doi:10.3389/fpsyg.2011.00103

- Green, D. W., & Abutalebi, J. (2013). Language control in bilinguals: The adaptive control hypothesis, *Journal of Cognitive Psychology*, 25(5), 515-530, doi:10.1080/20445911.2013.796377
- Grosjean, F. (1998). Studying bilinguals: Methodological and conceptual issues. *Bilingualism: Language and Cognition*, 1(2), 131–149. doi:10.1017/S136672899800025X
- Grosjean, F. (2001). The bilingual's language modes. In J. L. Nicol (Ed.), *One mind, two languages: Bilingual language processing* (pp. 1–22). Malden: Blackwell Publishing.
- Hartsuiker, R. J. & Bernolet, S. (2017). The development of shared syntax in second language learning. *Bilingualism: Language and Cognition*, 20(2), 219–234. doi:10.1017/S1366728915000164
- Hartsuiker, R. J., & Pickering, M. J. (2008). Language integration in bilingual sentence production. *Acta Psychologica*, 128(3), 479-489. doi:10.1016/j.actpsy.2007.08.005
- Hartsuiker, R. J., Pickering, M. J., & Veltkamp, E. (2004). Is syntax separate or shared between languages?: Cross-linguistic syntactic priming in Spanish-English bilinguals. *Psychological Science*, 15(6), 409–414. doi:10.1111/j.0956-7976.2004.00693.x
- Hwang, H., Shin, J. A., & Hartsuiker, R. J. (2018). Late bilinguals share syntax unsparingly between L1 and L2: Evidence from crosslinguistically similar and different constructions. *Language Learning*, 68(1), 177-205. doi:10.1111/lang.12272
- Jackson, C. N. (2017). Second language structural priming: A critical review and directions for future research. *Second Language Research*, 34(4), 539-552. doi:10.1177/0267658317746207
- Jackson, C. N. & Ruf, H. T. (2017). The priming of word order in second language German. *Applied Psycholinguistics*, 38(2), 315–345. doi:10.1017/S0142716416000205
- ferJäger, G. & Rosenbach, A. (2008). Priming and unidirectional language change. *Theoretical Linguistics*, 34(2), 85–113. doi:10.1515/THLI.2008.008

- Kantola, L., & van Gompel, R. P. (2011). Between-and within-language priming is the same: Evidence for shared bilingual syntactic representations. *Memory & Cognition*, 39(2), 276-290. doi:10.3758/s13421-010-0016-5
- Kootstra, G. J. & Doedens, W. J. (2016). How multiple sources of experience influence bilingual syntactic choice: Immediate and cumulative cross-language effects of structural priming, verb bias, and language dominance. *Bilingualism: Language and Cognition*, 19(4), 710–732. doi:10.1017/S1366728916000420
- Kootstra, G. J. & Muysken, P. (2017). Cross-linguistic priming in bilinguals: Multidisciplinary perspectives on language processing, acquisition, and change. *Bilingualism: Language and Cognition*, 20(2), 215–218. doi:10.1017/S1366728916001127
- Kootstra, G. J., & Şahin, H. (in press). Crosslinguistic structural priming as a mechanism of contact-induced language change: Evidence from Papiamentto-Dutch bilinguals in Aruba and the Netherlands. *Language*.
- Kootstra, G. J., van Hell, J. G. & Dijkstra, T. (2010). Syntactic alignment and shared word order in code-switched sentence production: Evidence from bilingual monologue and dialogue. *Journal of Memory and Language*, 63(2), 210–231. doi:10.1016/j.jml.2010.03.006
- Kootstra, G. J., van Hell, J. G. & Dijkstra, T. (2012). Priming of code-switches in sentences: The role of lexical repetition, cognates, and language proficiency. *Bilingualism: Language and Cognition*, 15(4), 797–819. doi:10.1017/S136672891100068X
- Kuznetsova, A., Brockhoff, P. & Christensen, R. (2017). Lmertest package: Tests in linear mixed effects models. *Journal of Statistical Software*, 82(13). This work is licensed under the licenses Paper: Creative Commons Attribution 3.0 Unported License. doi:10.18637/jss.v082.i13
- Levelt, W. J., & Kelter, S. (1982). Surface form and memory in question answering. *Cognitive Psychology*, 14(1), 78-106. doi:10.1016/0010-0285(82)90005-6
- Loebell, H. & Bock, K. (2003). Structural priming across languages. *Linguistics*, 41(5), 791–824. doi:10.1515/ling.2003.026
- Mahowald, K., James, A., Futrell, R. & Gibson, E. (2016). A meta-analysis of syntactic priming in language production. *Journal of Memory and Language*, 91, 5–27. doi:10.1016/j.jml.2016.03.009

- Marian, V., & Spivey, M. (2003). Competing activation in bilingual language processing: Within- and between-language competition. *Bilingualism: Language and Cognition*, 6(2), 97-115. doi:10.1017/S1366728903001068
- Mathôt, S., Schreij, D., & Theeuwes, J. (2012). OpenSesame: An open-source, graphical experiment builder for the social sciences. *Behavior Research Methods*, 44(2), 314–324. doi:10.3758/s13428-011-0168-7
- Meijer, P. J. A. & Fox Tree, J. E. (2003). Building syntactic structures in speaking: A bilingual exploration. *Experimental Psychology*, 50(3), 184–195. doi:10.1026//1617-3169.50.3.184
- Misra, M., Guo, T., Bobb, S. C., & Kroll, J. F. (2012). When bilinguals choose a single word to speak: Electrophysiological evidence for inhibition of the native language. *Journal of Memory and Language*, 67(1), 224–237. Doi:10.1016/j.jml.2012.05.001
- Montrul, S. (2004). Subject and object expression in Spanish heritage speakers: A case of morphosyntactic convergence. *Bilingualism: Language and Cognition*, 7(2), 125– 142. doi:10.1017/S1366728904001464
- Nitschke, S., Serratrice, L. & Kidd, E. (2014). The effect of linguistic nativeness on structural priming in comprehension. *Language, Cognition and Neuroscience*, 29(5), 525–542. doi:10.1080/01690965.2013.766355
- Onar Valk, P. (2014). Convergent developments in Dutch Turkish word order – A comparative study using ‘elicited production’ and ‘judgment’ data: Converging evidence?. *Applied Linguistics Review*, 5(2), 353-374. doi:10.1515/applirev-2014-0016
- Öztürk, B. (2002). Turkish as a non-pro-drop language. In E. E. Taylan (Ed.), *The Verb in Turkish*. Amsterdam, The Netherlands: John Benjamins. doi:10.1075/la.44.10ozt
- Pickering, M. & Ferreira, V. S. (2008). Structural priming: A critical review. *Psychological Bulletin*, 134(3), 427–459. doi:10.1037/0033-2909.134.3.427
- Pickering, M. J., & Garrod, S. (2004). Toward a mechanistic psychology of dialogue. *Behavioral and Brain Sciences*, 27(2), 169-190. doi:10.1017/S0140525X04000056
- Pickering, M., & Garrod, S. (2017). Priming and Language Change. In M. Hundt, S. Mollin, & S. Pfenninger (Eds.), *The Changing English Language*:

- Psycholinguistic Perspectives* (Studies in English Language, pp. 173–190). Cambridge: Cambridge University Press. doi:10.1017/9781316091746.008
- R Core Team. (2018). R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria. Retrieved from <https://www.R-project.org/>
- Salamoura, A., & Williams, J. N. (2006). Lexical activation of cross-language syntactic priming. *Bilingualism: Language and Cognition*, 9(3), 299–307. doi:10.1017/S0142716407070348
- Salamoura, A., & Williams, J. N. (2007). Processing verb argument structure across languages: Evidence for shared representations in the bilingual lexicon. *Applied Psycholinguistics*, 28(4), 627–660. doi:10.1017/S1366728906002641
- Schmitt, E. (2000). Overt and covert code-switching in immigrant children from Russia. *International Journal of Bilingualism*, 4(1), 9–28. doi:10.1177/13670069000040010201
- Schoonbaert, S., Hartsuiker, R. J. & Pickering, M. J. (2007). The representation of lexical and syntactic information in bilinguals: Evidence from syntactic priming. *Journal of Memory and Language*, 56(2), 153–171. doi:10.1016/j.jml.2006.10.002
- Segaert, K., Menenti, L., Weber, K. & Hagoort, P. (2011). A paradox of syntactic priming: Why response tendencies show priming for passives, and response latencies show priming for actives. *PLOS ONE*, 6(10), 1–14. doi:10.1371/journal.pone.0024209
- Segaert, K., Wheeldon, L. & Hagoort, P. (2016). Unifying structural priming effects on syntactic choices and timing of sentence generation. *Journal of Memory and Language*, 91, 59–80. doi:10.1016/j.jml.2016.03.011
- Sevinç, Y. (2014). Linguistic and social factors in Turkish-Dutch contact across generations. *Dutch Journal of Applied Linguistics*, 3(1), 82–100. doi:10.1075/dujal.3.1.05sev
- Shin, J. A., & Christianson, K. (2009). Syntactic processing in Korean–English bilingual production: Evidence from cross-linguistic structural priming. *Cognition*, 112(1), 175–180. doi:10.1016/j.cognition.2009.03.011

- Silva-Corvalán, C. (1994). *Language contact and change: Spanish in Los Angeles*. Oxford University Press.
- Sorace, A. (2011). Pinning down the concept of “interface” in bilingualism. *Linguistic Approaches to Bilingualism*, 1(1), 1–33. doi:10.1075/lab.1.1.01sor
- Sorace, A., & Filiaci, F. (2006). Anaphora resolution in near-native speakers of Italian. *Second Language Research*, 22(3), 339–368. doi:10.1191/0267658306sr271oa
- Şahin, H. (2015). *Cross-linguistic influences: Dutch in contact with Papiamentu and Turkish*. Utrecht: LOT.
- Torres Cacoullos, R. & Travis, C. E. (2011). Testing convergence via code-switching: Priming and the structure of variable subject expression. *International Journal of Bilingualism*, 15(3), 241–267. doi:10.1177/1367006910371025
- Torres Cacoullos, R. & Travis, C. E. (2016). Two languages, one effect: Structural priming in spontaneous code-switching. *Bilingualism: Language and Cognition*, 19(4), 733–753. doi:10.1017/S1366728914000406
- Travis, C. E., Torres Cacoullos, R. & Kidd, E. (2017). Cross-language priming: A view from bilingual speech. *Bilingualism: Language and Cognition*, 20(2), 283–298. doi:10.1017/S1366728915000127
- Valdés, G. (2000). *Spanish for native speakers: AATSP professional development series handbook for teachers K16* (vol. 1). New York: Harcourt College Publishers.
- van Hell, J. G. & Tanner, D. (2012). Second language proficiency and cross-language lexical activation. *Language Learning*, 62(s2), 148–171. doi:10.1111/j.1467-9922.2012.00710.x
- Vasilyeva, M., Waterfall, H., Gámez, P. B., Gómez, L. E., Bowers, E., & Shimpi, P. (2010). Cross-linguistic syntactic priming in bilingual children. *Journal of Child Language*, 37(5), 1047–1064. doi:10.1017/S0305000909990213

Wu, Y. J., and Thierry, G. (2010). Investigating bilingual processing: The neglected role of language processing contexts. *Frontiers in Psychology, 1*(178), 1-6.
doi:10.3389/fpsyg.2010.00178

Table 1

Background information for the sample of this study

Background variable	
<i>n</i> total (<i>n</i> female)	28 (18 female)
Median age (SD)	31.5 (11.88)
Level of education	
- Primary school	18%
- High school	25%
- Higher education	57%
Median language dominance (SD)	-21.07 (49.92)
Language dominance range	[-125.05, 95.71]

Note. Negative values in language dominance represent dominance in Dutch, and positive values dominance in Turkish.

Table 2

Example items of each experimental condition

Language Mode	Primed Structure	
	Null	Overt
Monolingual setting	Two of your friends invite you to go to the cinema this evening. But there is a task to be finished by tomorrow morning. [null] Tell your friends that you cannot go to the cinema with them.	Two of your friends invite you to go to the cinema this evening. But there is a task to be finished by tomorrow morning. <i>You</i> tell your friends that you cannot go to the cinema with them.
	Two of your friends invite you to go to the cinema this evening. But there is a task to be finished by tomorrow morning. [null] Tell your friends that you cannot go to the cinema with them.	Two of your friends invite you to go to the cinema this evening. But there is a task to be finished by tomorrow morning. <i>You</i> tell your friends that you cannot go to the cinema with them.

Note. In the actual experiment, the sentences in bold were in Dutch, and the rest was in Turkish. The subject pronouns of prime sentences are italicized for the readers' convenience. See Appendix for the original Turkish and/or Dutch versions of the items used in the experiment.

Table 3

Summary of the mixed-effects logistic regression analysis to predict the use of overt subjects

Predictor	β	$SE \beta$	z	p
(Intercept)	-1.981	0.385	-5.144	< .001
Language mode	-1.040	0.285	-3.649	< .001
Primed structure	-0.217	0.253	-0.859	0.390
Dominance	-0.009	0.007	-1.283	0.199
Language mode * primed structure	1.283	0.378	3.389	< .01
Language mode * dominance	0.006	0.005	1.258	0.208
Primed structure * dominance	0.009	0.005	1.896	0.058
Language mode * primed structure * dominance	-0.002	0.007	-0.238	0.461

Table 4

Mean percentages of overt subject use as a function of language mode and primed structure

		Language mode	
		Monolingual mode	Bilingual mode
Primed structure	Null subject	.220 (.262)	.116 (.196)
	Overt subject	.195 (.258)	.225 (.242)

Numbers in parentheses represent standard deviations.

Fig. 1 Violin plots showing the average use of overt subjects in percentages as a function of language mode and primed structure. Each point plotted over the violins represent a participant.

Appendix

Complete list of the stories and prime sentences

ID	Story in Turkish	Story in Dutch	Prime Sentence
Practice1	Bu sabah müdürünle bir toplantın var. Radyoda işe gitmek için kullandığın yolda bir kaza olduğunu söylüyorlar.	[Not used in Dutch]	Müdürüne toplantıya yetişemeyeceğini söyle.
Practice2	İnternette satın aldığın ürünler kargoyla gelecek. Ama kargonun geleceği gün başka bir yerde olman gerekıyor.	[Not used in Dutch]	Komşuna senin yerine paketi alıp alamayacağını sor.
1	İki arkadaşın seni akşam sinemaya davet ediyor. Ancak yarın sabaha kadar bitirmen gerekten bir iş var.	Twee van je vrienden nodigen je vanavond uit om naar de bioscoop te gaan. Maar er is een taak die morgenochtend moet zijn afgerond.	(Sen) arkadaşlarına onlarla sinemaya gidemeyeceğini söyle.
2	Kız kardeşin öğle yemeği için bir restorana gidecek. Ama oranın yemekleri çok kötü.	Je zus gaat om te lunchen naar een restaurant. Maar het eten is er verschrikkelijk.	(Sen) kız kardeşine o restoranın yemeklerini beğenmediğini söyle.
3	Bisikletinin zinciri koptu. Tamircinin yakınlarında komşun	De ketting van je fiets is gebroken. In de reparatiewerkplaats	(Sen) komşuna bisikleti tamirciye getirdiğini söyle.

	seni gördü ve ne olduğunu sordu.	zag je buurman je en vroeg je wat er gebeurd was.	
4	Kütüphanede yanında oturan insanlar yüksek sesle konuşuyor. Çok gürültü var.	Mensen die naast je in de bibliotheek zitten praten luid. Er is zoveel lawaai.	(Sen) onlara yaptıkları gürültüden rahatsız olduğunu söyle.
5	Yarınki proje toplantısına herkes kendi bilgisayarını getirecek. Ama bugün sırtın çok ağrıyor.	Iedereen neemt morgen zijn eigen computer mee naar de vergadering met je groepsgenoten. Maar vandaag doet je rug pijn.	(Sen) arkadaşlarına toplantıya bilgisayarını getiremeyeceğini söyle.
6	Yakın zamanda bitmesi gereken bir grup projesi var. Ama grup arkadaşın şu an şehir dışında.	Er is een groepsproject dat binnenkort moet worden afgerond. Maar je groepsgenoot is nu de stad uit.	(Sen) arkadaşına buluşmak için ondan haber beklediğini söyle.
7	Eşin marketten yumurta almanı istemişti. Markette her şey vardı ama yumurta yoktu.	Je partner wilde dat je eieren zou kopen bij de supermarkt. Alles was er in de supermarkt maar geen eieren.	(Sen) eşine hiç yumurta bulamadığını söyle.
8	Kuzenin bu yaz seni ziyaret etmek istiyor. Bu ziyareti planlayabilmek için uygun zaman bulmak gerek.	Je neef wil je deze zomer bezoeken. Om dit bezoek te kunnen plannen, moet er een beschikbare periode zijn.	(Sen) kuzenine temmuz ayında uygun olacağını söyle.

9	Arkadaşın yarın hava güzel olacağı için piknik yapmayı öneriyor. Fakat yarın tek boş günün.	Omdat het weer morgen leuk wordt, stelt een vriend van je voor om te gaan picknicken. Maar morgen is je enige vrije dag.	(Sen) arkadaşına yarın evi temizlemek zorunda olduğunu söyle.
10	Markette bir müşteri sana farklı markalardan iki ürün gösteriyor ve hangisinin daha iyi olduğunu soruyor.	Een klant in de supermarkt toont twee producten van verschillende merken en vraagt je welke van de twee beter is.	(Sen) ona soldakini tercih ettiğini söyle.
11	Annen seni cepten aradı ve bugünkü toplantının nasıl geçtiğini sordu.	Je moeder belde je op je mobiele telefoon en vroeg je hoe je vergadering vandaag is gegaan.	(Sen) annene bugün işe gitmediğini söyle.
12	Eşin mutfak dolabını tamir etmek istiyor ve sana alet kutusunun nerede olduğunu soruyor.	Je man wil het keukenkastje repareren en vraagt je waar de gereedschapskist is.	(Sen) eşine alet kutusunun yerini bilmediğini söyle.
13	Bugün en yakın arkadaşının doğum günü. Annesi ona hediye olarak mor renkte bir gömlek almış.	Vandaag is de verjaardag van je beste vriend. Zijn moeder gaf hem een paars shirt als cadeau.	(Sen) arkadaşına hediye beğenip beğenmediğini sor.

14	Mutfaktaki musluk bozuldu. Tamircinin gelebileceği zamanda ise bir toplantın var.	De kraan in je keuken is kapot. Er is een vergadering die je bij moet wonen op het tijdstip dat de monteur zou kunnen komen.	(Sen) ev arkadaşına yarın evde olup olmayacağını sor.
15	Arkadaşın seni bir ödev yapmak için kütüphaneye çağırdı. Uzun bir çalışmadan sonra akşam yemeği saati geldi.	Een vriend van je heeft je gevraagd om naar de bibliotheek te komen om aan het groepsproject te werken. Na vele uren studeren is het tijd voor het avondeten.	(Sen) arkadaşına ne zaman yemek yiyeceğini sor.
16	Evde kirli çamaşırlar birikmiş. Ev arkadaşının bugün boş günü ve çamaşırları yıkama sırası onda.	De wasmand bij je thuis is vol. Vandaag is het de vrije dag van je huisgenote, en het is haar beurt om de was te doen.	(Sen) ev arkadaşından bugün çamaşırları yıkamasını iste.
17	Bir arkadaşın uzun zamandır iş arıyor. Internette ona çok uygun bir ilan yayınlanmış.	Een vriend van jou is al lang op zoek naar een baan. Een advertentie die zeer geschikt is voor hem is zojuist gepubliceerd.	(Sen) arkadaşına bu ilanı görüp görmediğini sor.
18	Ünlü bir müzik grubu yaşadığın şehirde konser verecek. Biletler yarın sabah satışa çıkacak.	Een beroemde band gaat optreden in jouw stad. De kaartjes zijn morgen te koop.	(Sen) kardeşine yarın bilet almaya gidip gidemeyeceğini sor.

- 19 Ödevin için bir kitap gerekli, ama bu kitap hiçbir kitapçıda bulunmuyor. Bugün bir arkadaşın aynı kitabı sınıfa getirdi.
- 20 Bu akşam tüm çalışanlar için bir şirket yemeği var. Ancak öğleden sonra birdenbire kar yağmaya başladı.
- 21 Çok sigara içen bir kuzenin var. Geçenlerde doktoru ona sigarayı bırakmasını söylemiş.
- 22 Tüm gün boyunca kardeşin telefonunu açmadı, ama geceyarısı eve geldi.
- 23 Eşinin doğum günü için planlanan bir parti var. Eşinin ablası sana yardım etmek için davetlileri aramaya başlamış.
- Er is een boek nodig voor je huiswerk, maar het is niet verkrijgbaar in boekwinkels. Vandaag bracht je klasgenoot het boek mee naar de klas.
- Vanavond is er een bedrijfsdiner voor alle medewerkers. Maar in de middag is het plotseling gaan sneeuwen.
- Je neef is een zware roker. Onlangs zei zijn arts dat hij moest stoppen met roken.
- Je broer heeft de hele dag zijn telefoon niet opgenomen maar kwam om middernacht thuis.
- Er is een feestje gepland voor de verjaardag van je man. Om je te helpen is de zus van je man begonnen de gasten te bellen.
- (Sen) bu arkadaşına kitabı nereden bulduğunu sor.
- (Sen) iş arkadaşına akşam yemeğine gidip gitmeyeceğini sor.
- (Sen) kuzenine sigarayı bırakıp bırakmadığını sor.
- (Sen) kardeşine tüm gün nerede olduğunu sor.
- (Sen) ona partiye kimleri davet ettiğini sor.

24	Bu sabah çocuğun hastalandı. Bakıcının gelmesine daha iki saat var. Toplantınsa bir saat sonra başlıyor.	Afgelopen maandag is je kind ziek geworden. Het duurt nog twee uur voordat haar babysitter komt. Je vergadering begint over een uur.	(Sen) ona bugün biraz erken gelip gelemeyeceğini sor.
25	Okul ücretini ödemek için tanınan süre bitti. Ancak ailen şu an ödeme yapabilecek durumda değil.	De termijn voor het betalen van het collegegeld is voorbij. Maar het is voor uw gezin niet mogelijk om nu te betalen.	(Sen) okula ödemeyi bir hafta sonra yapacağınızı söyle.
26	Kardeşin yarın sabah senin yaşadığın şehre gelecek ve seninle en yakın zamanda görüşmek istiyor.	Je broer komt naar jouw stad en wil je zo snel mogelijk zien.	(Sen) ona yarın akşam görüşebileceğinizi söyle.
27	Arkadaşın ailesini götürmek için bir restoran önermeni istedi. Ailenin çok sevdiği bir yer var.	Je vriend vroeg je om hem een restaurant aan te bevelen om zijn gezin mee naar toe te nemen. Er is een plek waar je familie erg van houdt.	(Sen) arkadaşına o restorani ailecek çok sevdiğinizi söyle.
28	Yarın buluşmak isteyen arkadaşın bisikleti bozulmuş. Arabanızda bir kişilik yer var.	De fiets van de vriend die morgen met je wil afspreken is kapot. Er is nog een plek vrij in je auto.	(Sen) arkadaşına onu arabayla alabileceğinizi söyle.
29	Bir arkadaşın seni ve aileni düğününe davet	Een vriendin van jou heeft jou en je familie	(Sen) arkadaşına düğünden sonra bir

	etti. Düğün başka bir şehirde olacağı için kalacak yer bulmak gerek.	uitgenodigd op haar bruiloft. Omdat de bruiloft plaatsvindt in een andere stad, is accommodatie nodig.	otelde kalacağınızı söyle.
30	Bu ayki maaşın hesabına yatmamış. Bazı iş arkadaşların da bu durumdan şikayet etti.	Deze maand is je salaris niet op je rekening gestort. Sommige van je collega's hebben ook geklaagd over deze situatie.	(Sen) şirket muhasebecisine maaşlarınızı hala alamadığınızı söyle.
31	Ev arkadaşın sana köpeği yürüyüşe çıkarmayı önerdi. Parkta biri yanınıza gelip köpekleri ne sıklıkla dolaştırmak gerektiğini sordu.	Je huisgenoot stelde voor om met de hond naar het park te gaan. Iemand in het park benaderde je en vroeg je hoe vaak honden moeten worden uitgelaten.	(Sen) ona köpeği günde iki kez dışarı çıkardığınızı söyle.
32	Arkadaşların tatil için bir otel rezervasyonu yapmanı istedi. Telefondaki görevli kaç kişilik oda istediğini soruyor.	Je vrienden vroegen je om een hotelreservering voor de vakantie te maken. De persoon aan de telefoon vraagt je hoeveel mensen er op de kamer zullen verblijven.	(Sen) bu kişiye odada dört kişi kalacağınızı söyle.
33	Kardeşin seni ve iki arkadaşını yemeğe	Je broer nam jou en zijn twee vrienden mee	(Sen) garsona sipariş vermek için

	<p>çıkardı. Buluşma saati geldi ama arkadaşları geç kaldı. Garson masanıza yaklaşıyor.</p>	<p>uit eten. Het is nu de afgesproken tijd, maar zijn vrienden zijn laat. De ober komt naar je tafel.</p>	<p>arkadaşlarınızı beklediğinizi söyle.</p>
34	<p>Kız kardeşlerin kahvaltı etmek istiyor. Hava çok güzel olduğu için dışarıda yemek mümkün.</p>	<p>Je zussen willen ontbijten. Omdat het weer zo lekker is, is het mogelijk om buiten te eten.</p>	<p>(Sen) onlara evin bahçesinde kahvaltı edebileceğinizi söyle.</p>
35	<p>Bu sabah çalan telefon seni uyandırdı. Görünüşe göre arkadaşın dün akşam seni defalarca aramış ama bulamamış.</p>	<p>Een telefoontje heeft je vanochtend wakker gemaakt. Blijkbaar heeft je vriend je gisteravond vaak gebeld maar je niet kunnen bereiken.</p>	<p>(Sen) arkadaşına dün o saatlerde babanla sinemada olduğunuzu söyle.</p>
36	<p>Yaşadığın apartmana yeni biri taşındı. Bu kişi sana ve eşine bu mahallede çöplerin hangi gün toplandığını sordu.</p>	<p>Iemand is met jou in hetzelfde gebouw gaan wonen. Deze persoon vroeg jou en je vrouw wanneer in deze wijk het vuilnis wordt opgehaald.</p>	<p>(Sen) komşuna çöpleri pazartesi akşamı dışarı çıkardığınızı söyle.</p>
37	<p>Eşin bankadan kredi almak istiyor. Banka çalışanları gerekli belgeleri getirirse kredi alabileceğini söylüyor.</p>	<p>Je man wil een lening bij de bank krijgen. Medewerkers van de bank vertellen dat sommige documenten nodig zijn om een lening aan te vragen.</p>	<p>(Sen) onlara hangi belgeleri istediklerini sor.</p>

38	İkinci el giysilerin satıldığı bir pazar var. Arkadaşların bu pazarda bir şeyler satmak istiyorlar.	Er is een markt waar tweedehands kleding wordt verkocht. Je vrienden willen wat dingen op deze markt verkopen.	(Sen) onlara ne satmak istediklerini sor.
39	İş yerinden birinin doğum günü yaklaşıyor. Ofisteki insanlar hep beraber bir hediye almak istiyor.	Een collega is bijna jarig. Je andere collega's willen samen een cadeau voor hem kopen.	(Sen) onlara ne hediye almak istediklerini sor.
40	Uçağınızın kalkmasına 20 dakika kaldı. Ancak uçakta sizin koltuklarınızda başka insanlar oturuyor.	Er zijn nog 20 minuten over voor je vliegtuig opstijgt. Maar in het vliegtuig zitten andere mensen op jouw stoel.	(Sen) onlardan biletlerini kontrol etmelerini iste.
41	Üniversiteden birkaç arkadaşın sana yemeğe gelecek. Menüde bir et yemeği var.	Een paar vrienden van de universiteit komen voor het avondeten. Er staat een vleesgerecht op je menu.	(Sen) arkadaşlarına et yiyip yemediklerini sor.
42	Yeni çamaşır makinesinin kullanım kılavuzu sadece İspanyolca. Yan komşuların İspanyolca konuşabiliyor.	Je nieuwe wasmachine heeft alleen een handleiding in het Spaans. Je burenspreken Spaans.	(Sen) onlara kılavuzu senin için okuyup okuyacaklarını sor.
43	Yeni evinin yakınlarında bir kafe var. Bu kafenin	Er is een café in de buurt van uw nieuwe huis. Er hangen	(Sen) kafenin sahibine bu resimleri nereden aldığını sor.

	duvarlarında çok güzel resimler asılı.	prachtige foto's aan de muren van dit café.	
44	En sevdiğin mağaza sana bir zarf yollamış. Zarfın içinde uzun bir değerlendirme formu var.	Je favoriete winkel heeft je een envelop gestuurd. In de envelop zit een lang evaluatieformulier.	(Sen) çocuklarına bu formu senin için doldurup dolduramayacaklarını sor.
45	Kardeşin yakında evleniyor. Annen amcalarına davetiye gönderme görevini sana verdi.	Je zus gaat trouwen. Je moeder heeft je gevraagd om uitnodigingen naar je ooms te sturen.	(Sen) amcalarına davetiye alıp almadıklarını sor.
46	Yeni evinin duvarlarına boya yapılması gerekiyor. Yakınlarda yaşayan iki kuzenin var.	De muren van je nieuwe huis moeten worden geverfd. Twee van je neven wonen in de buurt.	(Sen) kuzenlerine evi boyamana yardım edip edemeyeceklerini sor.
47	Patronun bir iş gezisine gitmeni istiyor. Evinde her gün sulanması gereken çiçekler var.	Je baas wil dat je op zakenreis gaat. Er zijn een aantal bloemen in je huis, die elke dag water moeten krijgen.	(Sen) çocuklarından çiçekleri sulamalarını iste.
48	Ailen başka bir şehre taşındı. İlk ziyaretinden sonra telefonunun şarj aleti onların evinde kalmış.	Je ouders zijn naar een andere stad verhuisd. Na je eerste bezoek je telefoonoplader in hun huis was achtergebleven.	(Sen) onlara şarj aletini geri yollayıp yollayamayacaklarını sor.