Mismatches in Subject-Verb Agreement: The Processing of Numeral Quantifiers in Turkish

Ayşe Gül Özay-Demircioğlu (TED University)

Background. In Turkish, numerally quantified phrases in a subject position generally agree with 3SG verbs, but sometimes it is possible to see them agree with 3PL verbs, as in (1) (Göksel & Kerslake, 2004; Kornfilt, 1997).

(1) Üç kişi gel-di-Ø / gel-di-ler. Match Condition
three person come-PAST-3SG / come-PAST-3PL
'Three persons came.'

In my experiment, sentences as in (1) where the numerally quantified plural subject agrees with a third singular (3SG) or third plural verb (3PL) represent the so-called match condition because the number marking on the verb matches the features of the subject. Besides, Turkish allows a mismatch in person agreement when the verb agrees with a quantified subject. Therefore, the verb may show the first plural (1PL) agreement, and second plural (2PL) agreement, as in (2), which is called a mismatch condition in this study.

(2) Üç kişi gel-di-niz/ gel-di-k. Mismatch Condition
three person come-PAST-2PL / come-PAST-1PL
'Three persons came.'

The possible explanation of this variation in agreement is that a numeral phrase can agree with a 1PL and 2PL verb is the existence of a silent subject biz 'we'/siz 'you.PL', which controls the PRO subject of the adverbial clause headed by the converb *olarak* 'being/as', which are not present in the surface structure, as in (3) (Göksel & Kerslake, 2004; Özyıldız, 2017).

(3) Buraya biz$_i$ [PRO$_i$ üç kişi ol.arak] gel-di-k.
here we PRO three person be.GER come-PAST-1PL
'We were three people to come here.'

Especially in Turkish, the possibility of various agreement patterns with numerally quantified subjects creates a necessity to test what is said in theoretical and empirical research perspectives. This study examines whether agreement mismatches with numerally quantified subjects (for example, the subject=3SG and the verb=1PL) harder to process than the absence of mismatches (subject=3SG and the verb=3SG). In predictive processing, speakers integrate what is seen and make predictions about what kind of structure will come next (Altmann & Kamide, 1999; Kaan, 2014; Levy, 2008). On seeing the numerally quantified subject, speakers expect 3SNG or 3PL. If this expectation is not met and when they see 2PL or 1PL, speakers use the retrieval mechanism and reanalyze the whole structure. This reasoning underlies the design of the experiment with which I examined agreement mismatches in Turkish.

Methods. In present study, data were collected from 134 Turkish Learners of English via a self-paced reading task. To eliminate any effect of English on Turkish, English level was chosen as A1. The experimental items consisted of 24 items distributed across four lists with four conditions as in (4) and mixed with eight fillers. Every sentence consisted of seven regions as in (5). Although the agreement is on the verb, and so it is the critical region, but the verb differed in length. Therefore, Region 5 and 6 are taken as critical regions as in (5). Data was collected through Ibex Farm, an online platform used for online tasks. The experiment started with five practice items. Regarding analysis, 4 (Agreement) x 2 (Regions) Repeated Measures ANOVA and following post-hoc comparisons were conducted. The agreement variable had four levels (3SG, 3PL, 2PL, 1PL) and region one had two levels (Region 5 and Region 6). The purpose of this analysis was to discover which agreement interpretation of numerally quantified subjects is preferred most, as revealed by the speed with which participants read sentences with different agreement morphology on the verbs.

Results and Discussion. The Repeated-Measures ANOVA Analysis showed that there was a significant main effect of the agreement type [F1 (2.905, 383.495) = 3.97, p=.008], the region [F1 (1, 132) = 129.32, p<.001, F2 (1, 20) = 112.20, p<.001)], as well as a two-way interaction between agreement type and region [F1 (2.835, 374.175) = 7.62, p<.001, F2 (3,20) = 4.5, p=.054]. Bonferroni correction showed a significant difference between 3SG and 1PL agreement type ($p<0.05$): 3SG verbs were slower to process than 1PL verbs as in (6). Also, it revealed that participants were significantly slower in 2PL condition than in 1PL condition ($p<0.05$). Results indicated that the agreement mismatch, which does not cause ungrammaticality, does not lead to any extra processing load or any increase in the reading time. By contrast, mismatch one is actually preferred to match condition, contrary to the findings of previous literature, which indicated speakers' sensitivity towards agreement mismatches (Bock & Miller, 1991; Bock et al., 1999). Moreover, my findings indicate that 1PL is the most preferred agreement morphology with numerally quantified subjects contrary to the fact that syntactically simple structures are easier to process than syntactically complex structures (Kemper, 1987). As this is the case, I propose that the possible explanation for the absence of contrast between mismatch and match in the processing of agreement pattern may be that 3SG and other options are all equally complex because the underlying structure is the same across all agreement types as in (3).

(4) **Sample item.** 4x2 design context (a: Third person singular, b: Third Person Plural, c: Second Person Plural, d: First Person Plural; a: Region 5, b: Region 6 (24 test items across 4 lists and 8 filler items).

a) Üç kişi bu havuz-da yüz-üyor-du daha geçen hafta. Third Person Singular
three person this pool-LOC swim-PROG-PAST-3SG just last week.
*'Three person was swimming in this pool just last week.'

b) Üç kişi bu havuz-da yüz-üyor-lar-dı daha geçen hafta. Third Person Plural
three person this pool-LOC swim-PROG-3PL-PAST just last week.
*'Three person were swimming in this pool just last week.'

c) Üç kişi bu havuz-da yüz-üyor-du-nuz daha geçen hafta. Second Person Plural
three person this pool-LOC swim-PROG-PAST-2PL just last week.
*'Three person (you) were swimming in this pool just last week.'

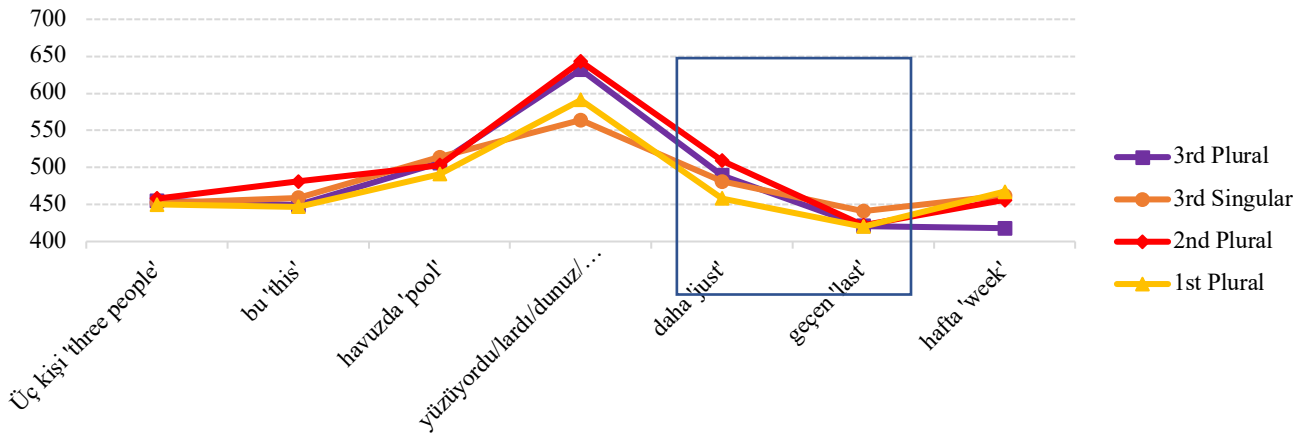
d) Üç kişi bu havuz-da yüz-üyor-du-k daha geçen hafta. First Person Plural
three person this pool-LOC swim-PROG-PAST-1PL just last week.
*'Three person (we) were swimming in this pool just last week.'

Region 5 and Region 6 are spillover regions

(5) *Regions of the Items with Numerally Quantified Subjects*

R1	R2	R3	R4	R5	R6	R7
Üç kişi	bu	havuz-da	yüz-üyor-du	daha	geçen	hafta
Three person	this	pool- loc	swim-prog-past-3sg	just	last	week
'Three persons were swimming in this pool just last week.'						

(6) Figure 1. Mean Reading Times for Every Region



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