Anaphoric Potential of Pseudo-Incorporated Nouns in Turkish

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Introduction

This paper seeks to investigate the anaphoric potential or the potential of introducing discourse referents of bare nouns.[1] Turkish bare nouns in object position are analyzed as pseudo-incorporated nouns, which are neutral in number and take narrow scope (Tura, 1973; Underhill, 1976; Erguvanlı, 1984; Dede, 1986; Kılıçaslan, 1994; Schroeder, 1999; Ketrez, 2005; Öztürk, 2005; Arslan-Kechriotis, 2009; Kamali, 2008; 2015; a. o.). However, it is controversial whether pseudo-incorporated nouns are discourse transparent, i.e. whether they can introduce discourse referents that serve as antecedents for subsequent anaphora (van Geenhoven, 1998 for West Greenlandic; Dayal, 1999; 2011 for Hindi; Asudeh & Mikkelsen, 2000 for Danish; Farkas and de Swart, 2003 and Yanovich, 2008 for Hungarian; Modarresi, 2014 and Krifka & Modarresi, 2016 for Persian; a. o). So far, Turkish pseudo-incorporated nouns were commonly accepted to be discourse opaque (Mithun, 1984; Knecht, 1986; Nilsson, 1985, 1986; Aksan, 1995; Schroeder, 1999; Öztürk, 2005; Kuribayashi, 1990; Aydemir, 2004; Ketrez, 2005; Gračanin-Yüksek & İşsever, 2011; a. o.). Consider the following example in (1), adopted from Ketrez (2005, p. 27):

(1)   a.   Ali   kitap$_1$ oku-du,   sonra *pro$_1$ / *o-nu$_2$ kütüphane-ye
              Ali   book read-PST.3SG then pro / it-ACC   library-DAT

              geri   ver-di.
              back   give-PST.3SG

              'Ali did book-reading then (he) returned *it to the library.'

      b.   Ali   bir kitap$_1$ oku-du,   sonra pro$_1$ / o-nu$_1$ kütüphane-ye
              Ali   a book read-PST.3SG then pro / it-ACC   library-DAT

              geri   ver-di.[2]
              back   give-PST.3SG

              'Ali read a book then (he) returned it to the library.'

According to Ketrez (2005, p. 26) "only objects that are referential and that have a DP projection can be pronominalized and dropped". Thus, the bare noun *kitap* in (1a) cannot be picked up by a null pronoun or a personal pronoun, whereas the non-specific indefinite *bir kitap* in (1b) is available for coreference, and hence is discourse transparent. Likewise, Dede (1986, p. 162) argues that the bare noun *kitap* 'book' in (2a) is non-referential and thus cannot be co-referent with the subject null pronoun, which therefore triggers an event interpretation of the null pronoun on the basis of the predicative context.

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[1]   The present investigation is limited to singular bare nouns in direct object position where the bare nouns can be replaced by their non-incorporated, e.g. for example, cased counterparts.

[2]   Turkish is a pro drop language, in which subjects are often dropped in case of topic continuity (Enç, 1986). However, objects can also be omitted (Öztürk, 2008; Neeleman & Szendrői, 2008, a.o.). İnce (2004) analyzes null objects in adjunct clauses in Turkish as pro categories.

(2)   a.   Ali   kitap₁   oku-yor.   *pro₁   Çok   ilginç.
            Ali   book   read-PRS.3SG   pro   very   interesting

            i. Not: 'Ali does book-reading. *It is very interesting.'

            ii. Ali does book-reading. That's very interesting.'

        b.   Ali   bir kitap₁   oku-yor.   pro₁   Çok   ilginç.
            Ali   a book   read-PRS.3SG   pro   very   interesting

            'Ali is reading a book. It is very interesting.'

However, Bliss (2004, p. 24) provides a counterexample (3a), in which the pseudo-incorporated noun seems to be discourse transparent.

(3)   a.   Ali   muz₁   al-dı.
            Ali   banana   buy-PST.3SG

            O-nu₁ / On-lar-ı₁   buzdolabın-a   koy-du.
            it-ACC / it-PL-ACC   refrigerator-DAT   put-PST-3SG

            'Ali did banana-buying. He put it / them in the refrigerator.'

        b.   Ali   bir muz₁   al-dı.
            Ali   a banana   buy-PST.3SG

            O-nu₁ / *On-lar-ı₁   buzdolabın-a   koy-du.
            it-ACC / it-PL-ACC   refrigerator-DAT   put-PST-3SG

            'Ali bought a banana. He put it / *them in the refrigerator.'

Concerning the examples in (3) she discusses the anaphoric possibilities of bare nouns with regard to their number interpretation. According to Bliss (2004), the singular object pronoun *onu* 'it' and the plural object pronoun *onları* 'they' in (3a) are both co-referent with the bare noun *muz* 'banana' in the previous sentence, since Turkish bare nouns are not marked for number, whereas the non-specific indefinite *bir muz* 'a banana' in (3b) cannot be co-indexed with the plural pronoun, since it is obligatorily singular. Kamali (2015, p. 120) provides another example in (4) establishing a larger discourse unit. In utterance (4a), the bare noun *portakal* 'orange' can be referred back to by a personal pronoun *onu* 'it' in (4b), and a null pronoun in (4c).

(4)   Bir saattir oğlanları izliyorum.

        'I've been watching the boys for the last hour.'

        a.   Emre portakal₁ getir-iyor.
            Emre orange   bring-PRS.3SG

            'Emre does orange-bringing.'

        b.   Ali   de   on-u₁   soy-uyor.
            Ali   CONN   it-ACC   peel-PRS.3SG

            'And Ali peels it.'

        c.   Ama sonra   pro₁   ye-m-iyor-lar.   Biriktir-iyor-lar.
            but then   pro   eat-NEG-PRS-3PL   save-PRS-3PL

            'But afterwards they don't eat it / them. They save them.'

Considering the examples (3) and (4), it seems that pseudo-incorporated nouns in Turkish can be discourse transparent under certain circumstances. Therefore, the present study aims at testing the anaphoric potential of pseudo-incorporated nouns through an acceptability judgment task.

The anaphoric potential of pseudo-incorporated nouns

The current investigation aims to examine the anaphoric potential of pseudo-incorporated nouns in Turkish by analyzing the applicable parameters contributing to the discourse transparency of pseudo-incorporated nouns. Our primary research question is whether pseudo-incorporated nouns show properties of discourse transparency in comparison to non-specific indefinites. Another question that arises from this is what type of anaphoric expression facilitates the anaphoric relation, if pseudo-incorporated nouns are discourse transparent. The second major research question is whether the type of the event denoted by the noun-verb combination has an influence on the anaphoric potential of pseudo-incorporated nouns.

With regard to other languages, as for example in Hungarian, it has been shown, that pseudo-incorporated exhibit properties of discourse transparency in particular contexts. Farkas and de Swart (2003) investigated the anaphoric potential of pseudo-incorporated nouns in Hungarian. They illustrated that singular pseudo-incorporated nouns do not allow for anaphoric reference with an overt pronoun. They conclude that pseudo-incorporated nouns in Hungarian are neither fully transparent nor fully opaque, they rather are "discourse translucent" (Farkas & de Swart, 2003, p. 19). Moreover, they conclude that the nature of the anaphoric expression affects the discourse transparency of pseudo-incorporated nouns, depending on whether they are overt or covert. Modarresi (2014, 2015) examined the discourse transparency of pseudo-incorporated nouns in Persian and found out that, similar to Hungarian, pseudo-incorporated nouns in Persian also show properties of discourse transparency with respect to anaphoric reference with covert pronouns. Additionally, contrary to Hungarian, she presents cases in which pseudo-incorporated nouns are accessible through singular or plural overt pronouns. She argues that pseudo-incorporated nouns are number neutral, but depending on world knowledge, one or more entities are evoked. Dayal (2011) investigated the semantic properties of pseudo-incorporated nouns in Hindi. In comparison to other works, she proposes that number neutrality of pseudo-incorporated nouns depends on the aspectual specification of the predicate. More precisely, she argues that pseudo-incorporated nouns are not inherently number neutral but rather are semantically singular. According to Dayal (2011), a number-neutral interpretation is a result of combining pseudo-incorporated nouns with aspectual operators, such as atelic predicates. Furthermore, she states that aspectual information has implications for the anaphoric potential of pseudo-incorporated nouns.

Turning to the investigation of Turkish pseudo-incorporated nouns, there are several open issues concerning the semantics and pragmatics of pseudo-incorporated nouns, in particular concerning their referential, aspectual and number interpretation. To the best of our knowledge, the anaphoric potential of pseudo-incorporated nouns in Turkish has not been investigated so far. Therefore, we here aim at identifying the parameters contributing to the anaphoric potential of pseudo-incorporated nouns in Turkish. In particular, we focus on the degree of affectedness of the pseudo-incorporated noun. We argue that pseudo-incorporated nouns are weakly referential. We assume that reference to a pseudo-incorporated object is a kind of bridged reference, i.e. an indirect anaphoric link to the bare noun via the complex event created by the verb and the bare noun. Our hypothesis is that the noun-verb combination or degree of affectedness has an influence on the referential status of the pseudo-incorporated noun. Depending on the event type or the degree of affectedness, the pseudo-incorporated noun should be more or less visible to overt or covert anaphoric expressions. In that regard, we investigate effected objects (Martinez-Vazquez, 1998) using

verbs of creation, in comparison to (un)affected objects (Cornips & Hulk, 1998) using verbs of (typical) use. We expect higher acceptability ratings for contexts with anaphoric reference to effected objects than reference to (un)affected objects. To tease apart the different verb types we applied the diagnostics of Coppock & Beaver (2015, p. 414), which suggest that creation verbs "are used to introduce objects into the domain of discourse". According to Coppock & Beaver (2015, p. 414) "a verb V is an entity-introducing verb (in some frame, with some sense) if and only if "to V an N" tends to increase the number of salient Ns." The following examples in (5), based on Coppock & Beaver (2015), illustrate how this arithmetic inference may be applied:

(5)   a. There are at least three books on the shelf.
             #If Ali *reads* a book, that will make four.

        b. There are at least three books on the shelf.
             If Ali *writes* a book, that will make four.

        c. There are at least seven dresses in the boutique.
             #If Ayşe *hangs up* a dress, that will make eight.

        d. There are at least seven dresses in the boutique.
             If Ayşe *sews* a dress, that will make eight.

The above examples in (5) show that creation verbs like *write* and *sew* are entity-introducing verbs, but verbs of use like *read* and *hang up* are not. In contexts of pseudo-incorporation it is less clear how many discourse referents or entities are introduced by the event, since pseudo-incorporated nouns are not marked for number. In that respect, two further questions arise: (i) whether the event introduces one or more entities into the discourse and (ii) whether the anaphoric accessibility is possible through overt anaphoric expressions, which are marked for number (cf. examples in (3)).

The study

Participants

A total of 160 monolingual speakers of Turkish (108 women; mean age: 30.9±8.1) participated in this study. Turkish was their first language and none of them started learning a second language before attending primary school.

Materials and procedure

The experimental design consisted of four conditions, organized in a 2x2 factorial design, manipulating the presence (*bu* 'this' + N) or absence (null pronoun) of an anaphoric expression and the verb type, comparing verbs of use and verbs of creation. The verbs were tested beforehand on the basis of the diagnostics from Coppock & Beaver (2015) to ensure a difference between the verb classes. A total of 48 critical items (12 items per condition) was constructed as stimulus material. A sample set of conditions is shown in Table 1. Each item consisted of a context sentence like (1) or (2) and a target sentence like (a) or (b), respectively. The stimulus materials were distributed among four lists in a Latin Square design such that each list contained only one condition of one set. Each list was completed with 24 additional filler sentences, which had a structure similar to the critical items. Thus, each participant has seen a total of 36 sentences. The items were presented in a pseudorandom order, showing only one item at a time. Participants received a link to the questionnaire made in *Google Forms* and filled it in online. Detailed instructions were provided right before the questionnaire started. Subjects were asked to rate how naturally the sentences were linked to each other on a scale from 1 to 7, where a score of 1 indicated that the sentences were badly linked and 7 indicated that the sentences were well linked.

Table 1. Design of stimulus materials. Manipulated regions are highlighted.

Verbs of use		(1) Gönül geçen gün ofiste **mektup okudu**. 'Gönül did letter-reading at the office yesterday.'
	pro	(a) *pro* Üç sayfaydı. 'It was three pages long.'
	bu + N	(b) **Bu mektup** üç sayfaydı. 'This letter was three pages long.'
Verbs of creation		(2) Sami geçen gün çalışma odasında **mektup yazdı**. 'Sami did letter-writing at the office yesterday.'
	pro	(a) *pro* Üç sayfaydı. 'It was three pages long.'
	bu + N	(b) **Bu mektup** üç sayfaydı. 'This letter was three pages long.'

Analysis and results

Statistical analyses were conducted in R version 1.0.136 using the lme4 package (Bates et al., 2015) to perform linear mixed-effects models (LMEM) with the score as outcome variable and anaphoric expression and verb type as predictors. The variability of subjects and items were taken into account by including them as random intercepts.

Overall mean ratings are shown in Figure 1. Figure 2 and Figure 3 present the mean ratings for verbs of use and verbs of creation, respectively. The results show a significant main effect for verb type $b = 1.26$, $SE = 0.18$, $t = 6.86$ and for anaphoric expression $b = 0.40$, $SE = 0.13$, $t = 2.51$. As can be seen from Figure 1, there is no significant interaction of verb type and anaphoric expression. From the results it emerges that (i) anaphoric reference to effected bare objects in contexts with verbs of creation seem to be more acceptable than reference to (un)affected objects in contexts with verbs of use and (ii) the anaphoric relation triggered by the definite description *bu* + N generally seems to be more acceptable than the anaphoric relation triggered by the null pronoun.
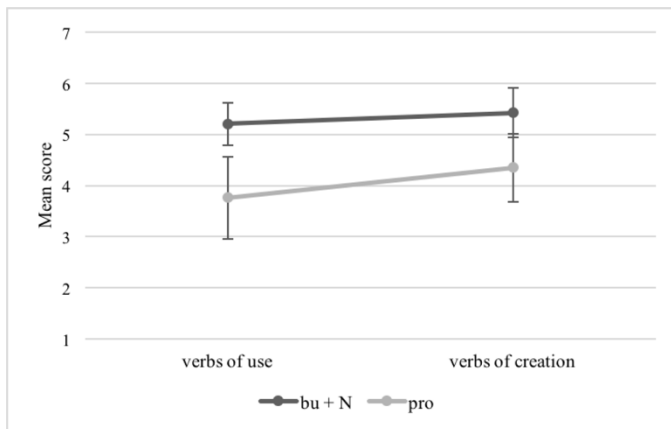
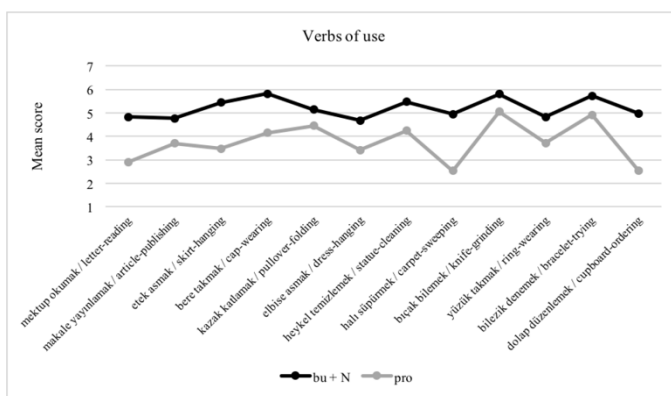Figure 1. Mean scores for the experimental conditions.

Figure 2. Mean scores for contexts with verbs of use. Items are ordered by noun.
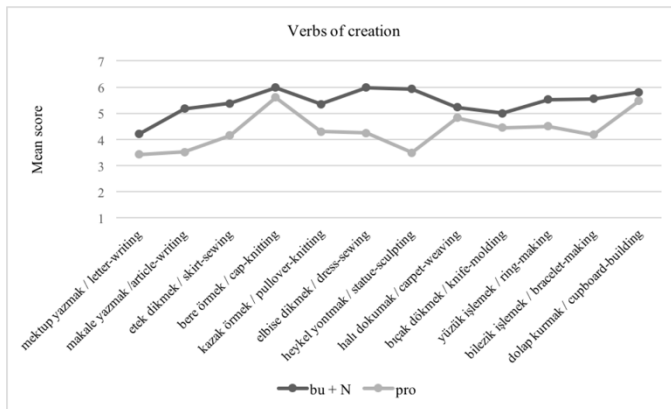

Figure 3. Mean scores for contexts with verbs of creation. Items are ordered by noun.

Conclusions

In conclusion, the results indicate that the two event types, creation events and usage events, differ from each other with respect to the accessibility of the pseudo-incorporated noun in that particular event. The current experiment provides evidence for the anaphoric potential of pseudo-incorporated nouns and demonstrates that pseudo-incorporated nouns seem to be visible for null pronouns, even if continuations with definite descriptions are more acceptable. Furthermore, it displays that reference via null pronouns in creation contexts seem to be more acceptable than in usage contexts. The relatively high mean value for contexts in which the pseudo-incorporated noun is picked up by a null pronoun can be explained as follows: the lack of marking for number at the moment of introduction

facilitates the accessibility of the pseudo-incorporated noun, since there is no number agreement either on the anaphoric device nor on the verb. One line of investigation worth pursuing in future work is the comparison of anaphoric uptake of pseudo-incorporated objects with its non-incorporated counterparts, since according to Farkas & de Swart (2003) (pseudo-)incorporated objects are less prominent than their non-incorporated counterparts. Under this assumption, we would expect that the higher the object on the referentiality scale (cf. Bossong, 1985; Aissen, 2003), the more accessible it is. Following Farkas & de Swart (2003, p. 146), our prediction is that reference to pseudo-incorporated objects via an overt pronoun should be less acceptable than to definite objects, since "overt pronouns require an existing discourse referent." Another line of investigation worth considering is the comparison of anaphoric uptake in subject position with anaphoric uptake in object position. The anaphoric uptake of pseudo-incorporated nouns in the present experiment always occurred in subject position. This raises the question of whether there is a general disadvantage in picking up previous objects as topics in subject position. A further question that remains open is whether effected objects in contexts of creation are more prominent than (un)affected objects in context of usage due to the fact that creation events bring objects into existence in contrast to usage verbs.

Acknowledgements

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