

Interpretation and Antecedent Biases of Null and Overt Pronouns in Turkish

Esra Onal, Indiana University Bloomington

Previous studies on anaphora resolution of null and overt subjects suggest that the grammatical function of antecedents plays an important role in resolving anaphora [3, 7, 4]. Null subjects tend to select the most salient antecedent, often the subject of the previous utterance, whereas overt subjects typically select a non-subject antecedent. However, [1] points out that the antecedent bias of the overt pronoun towards the object is less “stable” and more context-dependent than that of the null pronoun towards the subject. [6] argues that in Turkish, overt pronouns might also bear contrastive-emphatic function¹ similar to Spanish [2] and Japanese [5]. Taken together, these findings indicate that overt pronouns do not have a simple shift-to-object discourse function.

In this study, we examined the interpretation of the 3rd person singular overt pronoun “o” (“she/he”) in Turkish in comparison to the null pronoun and repeated names in intra-sentential or “within” sentence contexts². We evaluated the antecedent biases of the null vs the overt pronoun in pragmatically ambiguous and unambiguous contexts. In this regard, we conducted three experiments with Turkish native speakers ($N = 23$) who were asked to make judgments for 147 sentences. Statistical significance was determined with logit mixed-effects models.

In **Exp 1**, participants were asked to select the antecedent [subject, object, someone else³] for the anaphor [null, overt] in the main clause. The three within subject conditions were ambiguous and unambiguous toward either the subject or the object antecedent. The unambiguous conditions were used to evaluate how anaphors are biased towards the antecedents based on their grammatical function. **Fig. (1a)** demonstrates a significant effect of grammatical function in anaphora resolution ($p < 0.001$): null pronouns predominantly select the subject, while overt pronouns tend to select the object. Additionally, we observe that overt pronouns convey a contrastive-emphatic function, as indicated by their association with the “someone else” reading. These findings support the hypothesis that overt pronouns serve a contrastive-emphatic discourse function in Turkish.

In unambiguous cases, **Fig. (1c)** reveals significant antecedent bias for the null pronoun towards the subject ($p < 0.001$) while **Fig. (1b)** shows no significant antecedent bias for the overt towards the object. Instead, we saw a significant increase in the “someone else” interpretation ($p < 0.001$), underscoring the role of the contrastive-emphatic function in shaping overt pronoun interpretation, especially when evidence against the object antecedent is present (see **Fig. (1b)**).

In **Exp 2**, participants were asked to select the anaphor [null, overt, repeated name] given the antecedent. The results revealed a strong preference for repeated names across all conditions, with a significantly weaker preference for overt pronouns. Notably, there are only two instances where the preference for a repeated name does not differ significantly from the null pronoun: when the subject antecedent is implied (see **Fig. (2a-b)**). In **Exp 1**, participants provided naturalness judgments for all conditions (see **Exp 3** stimuli). The results align with **Exp 2**, further explaining the lower use of overt pronouns across conditions. Participants frequently rated the use of overt pronouns as somewhat likely or neutral, except in cases where the object serves as the pragmatic subject of the main clause.

We demonstrated that the null pronoun exhibits a clear antecedent bias toward the subject, whereas the overt pronoun does not. We showed that the overt pronoun’s contrastive-emphatic discourse function is most prominent when there is evidence for non-object antecedent. When given a choice, Turkish speakers frequently preferred repeated names over the overt pronoun “o.”

¹In contrastive-emphatic contexts, the overt pronoun is obligatory, even though Turkish verbs are marked with person and number information, which already indicates the subject.

²Intra-sentential contexts consist of a main clause preceded by an adverbial clause that introduces potential antecedents: the subject and the object.

³This option was used to evaluate the overt pronoun’s contrastive-emphatic function, distinguishing between participants present and an external entity (“someone else”).

Exp1: Conditions: Anaphor × Ambiguity (6) Q: Antecedent? (a) subject (b) object (c) someone else		
Condition	Stimuli	Translation
Null, amb	Elif Ayşe'yi gördüğünde, yemek yiyordu.	"When Elif saw Ayşe, ∅ was eating."
Null, unamb_subj	Elif Ayşe'yi rezil edince, özür diledi.	"When Elif humiliated Ayşe, ∅ apologized."
Null, unamb_obj	Elif Ayşe'yi azarlayınca, ağladı.	"When Elif scolded Ayşe, ∅ cried."
Overt, amb	Elif Ayşe'yi gördüğünde, o yemek yiyordu.	"When Elif saw Ayşe, she was eating."
Overt, unamb_subj	Elif Ayşe'yi rezil edince, o özür diledi.	"When Elif humiliated Ayşe, she apologized."
Overt, unamb_obj	Elif Ayşe'yi azarlayınca, o ağladı	"When Elif scolded Ayşe, she cried."

Exp2: Conditions: Antecedent × Ambiguity (6) Q: Anaphor? (a) null (b) overt (c) repeated names

Condition	Stimuli
Subj, amb	[Elif] Ayşe'yi gördüğünde, _ yemek yiyordu.
Subj, unamb_subj	[Elif] Ayşe'yi rezil edince, _ özür diledi.
Subj, unamb_obj	[Elif] Ayşe'yi azarlayınca, _ ağladı.

Exp3: Conditions: Anaphor × Antecedent × Ambiguity (12) Q: How natural? 1-5 Likert scale

Condition	Context
Null, subj, amb	[Elif] Ayşe'yi gördüğünde, yemek yiyordu.
Null, obj, unamb_subj	Elif [Ayşe'yi] rezil edince, özür diledi.
Overt, obj, amb	Elif [Ayşe'yi] gördüğünde, o yemek yiyordu.
Overt, subj, unamb_obj	[Elif] Ayşe'yi azarlayınca, o ağladı.

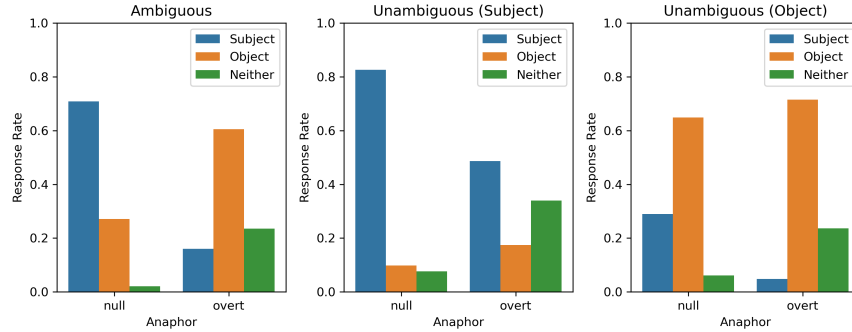


Figure 1: Experiment 1

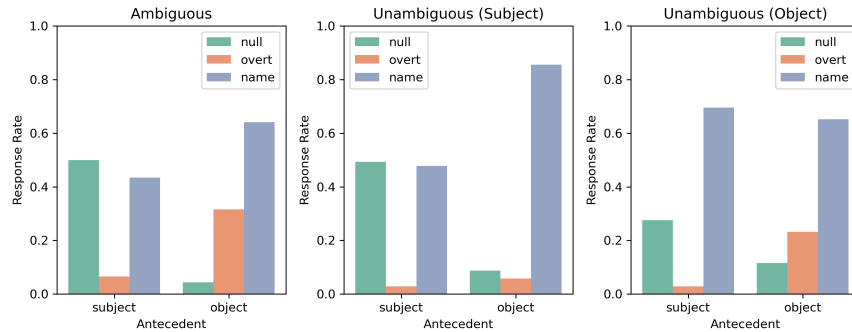


Figure 2: Experiment 2

References. [1] Carminati, M. N. (2002). *The processing of Italian subject pronouns*. University of Massachusetts Amherst. [2] Gelormini-Lezama, C., & Almor, A. (2011). Repeated names, overt pronouns, and null pronouns in Spanish. *Language and cognitive processes*. [3] Grosz, B., Joshi, A., & Weinstein, S. (1995). Centering: A framework for modeling the local coherence of discourse. *Computational linguistics*. [4] Özge, D., & Hartshorne, J. (2020). Referential form, word order and emotional valence in Turkish pronoun resolution. [5] Shoji, S. (2016). The repeated name penalty and the overt pronoun penalty in Japanese. [6] Taylan, E. E. (1986). Pronominal versus zero representation of anaphora in Turkish. In *Studies in Turkish linguistics*. John Benjamins. [7] Turan, U. D. (1995). *Null vs. overt subjects in Turkish discourse: A centering analysis*. Pennsylvania: University of Pennsylvania.