

## Pronoun resolution in bilingual Turkish-German children

This study examines pronoun resolution in bilingual Turkish-German children, focusing on how heritage language exposure, literacy and individual language experience influence real-time referent interpretation. Pronoun resolution in discourse is guided by a set of hierarchical cues that contribute to the prominence of potential antecedents. According to Schumacher et al. (2017), these include thematic role (agent over patient), grammatical function (subject over object), surface position (initial over non-initial), and discourse status (topic over non-topic). Given the complex interaction of these cues, monolingual children typically reach adult-like pronoun interpretation only around age ten (Papadopoulou et al., 2015). Crucially, phenomena acquired late by monolinguals are often susceptible to input-related variability in bilingual development (Tsimpli, 2014).

Turkish is a discourse-prominent, null subject language that allows subject pronouns to be omitted when the referent is prominent and retrievable from the discourse. Overt pronouns, in contrast, are typically pragmatically marked and signal contrast or reactivation of less prominent referents (Öztürk, 2008). This distinction makes Turkish particularly well-suited for studying referent resolution in bilingual children, as both overt and null forms signal different discourse functions.

We examine how children's interpretation preferences differ across three groups of Turkish heritage speakers in Germany, distinguished by their amount of heritage language exposure.: (1) bilingual children who receive no formal heritage language instruction, (2) children who attend weekly Turkish classes for two to four hours, and (3) children enrolled in fully bilingual schools where Turkish and German are used equally. In particular, we focus on the role of literacy, based on studies showing that mastery of pronoun interpretation is related to literacy-related variables (Arnold et al., 2018). We assess and account for children's Turkish proficiency using a sentence repetition task.

We developed a picture-based, child-friendly online task for Turkish that elicits pronoun resolution judgments in contexts where referent ambiguity is present. In each trial, participants are presented with three images on a screen: two animate characters of the same number and one inanimate distractor. These are introduced sequentially through simple declarative sentences, such as *Bu bir kurbağa* ("This is a frog") in Turkish. Participants listen to a short story involving both animate characters, followed by a continuation sentence containing an ambiguous pronoun. For example, participants hear: *Kurbağa eşeği dondurmayla şaşırtmak istiyor. Ama o/Ø çok gecikiyor. Kim çok gecikiyor?* ("The frog wants to surprise the donkey with ice cream. But she/Ø is late. Who is late?"). Since both characters share the same number and animacy, and the discourse does not disambiguate the pronoun, participants must rely on the presence or absence of the pronoun to identify the intended referent.

After hearing the stimuli, participants respond by clicking on the image that they believe corresponds to the question. Participants complete the task in a Visual World Paradigm setup, where their eye movements are recorded while they view the images and listen to the story. This allows for the analysis of real-time identification of which referents are considered more prominent at different points in the sentence. Eye-gaze data are analyzed to determine whether participants anticipate the referent based on pronoun status, i.e., overt versus null. Expected eye-gaze patterns are shown in Figure 1.

Pilot data suggest that pronoun resolution strategies differ across individuals and are shaped by both exposure and literacy. Children with balanced biliteracy, especially those in bilingual schools, are expected to align with our predictions more (see Figure 1). We will analyze how continuous measures of exposure interact with literacy-related experience. These findings will provide insights into how bilingual language and literacy experience influences language processing in children. Specifically, they will highlight the role of sustained heritage language input at home and at school in supporting discourse-level interpretation mechanisms and demonstrate that bilingual children can develop sensitivity to prominence hierarchies when provided with rich exposure.

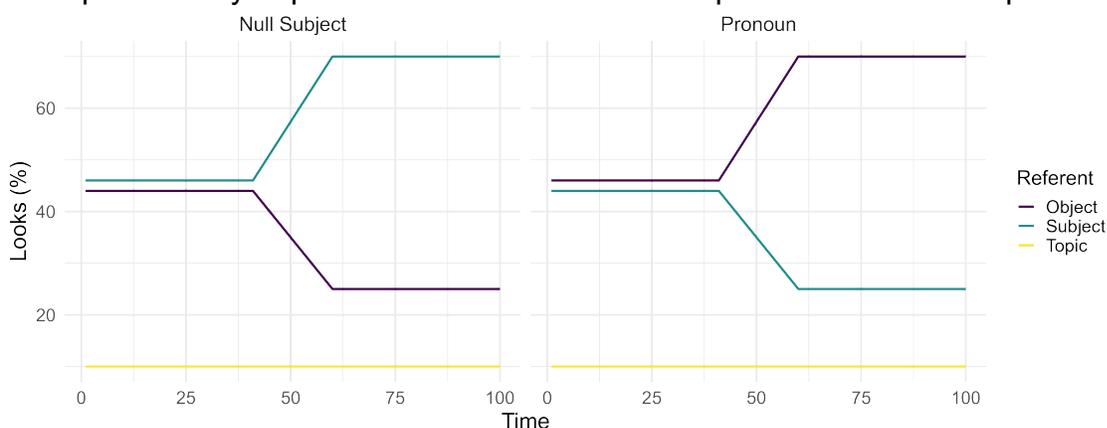


Figure 1: Expected results: Interpretation preferences in eye-gaze patterns

## References

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