

Pre-verbal focus in Turkish: An eye-tracking during reading study

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In most languages, focused constituents are marked in a number of ways including syntactic canonicity and prosody. Being a flexible word-order language, Turkish uses both the syntactic and prosodic information to mark focused elements, as it allows for pre-verbal scrambling (İşsever, 2003). The canonical position for neutral focus in Turkish is taken to be the immediate preverbal position (see Kural, 1992; Taylan, 1984, among others). However, Göksel and Özsoy (2003) propose a 'focus field' (rather than a particular constituent position) which covers the entire preverbal area including the verb, which allows for percolation of prosodic features. To encapsulate, both the accounts suggest that focus occurs preverbally in Turkish, however, the immediate pre-verbal focus account assumes a canonical focus position while the focus field account presumes a flexible position shaped by sentence stress. Past research has evidenced that prosodic and articulatory processes are imposed during silent reading (see e.g., Ashby & Clifton, 2005; Fodor, 1998; Rayner & Pollatsek, 1989), and that inner speech aids sentence comprehension (e.g., Slowiaczek & Clifton, 1980, Rayner & Pollatsek, 1989; Carver, 1990). Building upon these studies and the above-mentioned focus accounts in Turkish, we aim to unveil the moment-by-moment incremental processing of preverbal focus in Turkish using an eye-movements monitoring experiment during naturalistic reading.

We administered an eye-tracking during reading experiment to a group of 21 young adult participants who spoke Turkish as their native language. Our linguistic stimuli consisted of 24 sentence pairs, constructed as dialogues, with two conditions where the position of the focused element is manipulated: Preverbal (Pre-V, see 1) and Immediate Preverbal (iPreV, see 2).

- (1) A: Dükkannda kim kadını gördü?
 store.LOC who woman.ACC see.PST
 B: Dükkannda ÇOCUK kadını gördü
 store.LOC [child]FOC woman.ACC see.PST
 'A: Who saw the woman at the store? B: The child saw the woman at the store.'

- (2) A: Çocuk dükkanda kimi gördü?
 child store.LOC who.ACC see.PST
 B: Çocuk dükkanda KADINI gördü
 child store.LOC [woman.ACC]FOC see.PST
 'A: Who did the child see at the store? B: The child saw the woman at the store.'

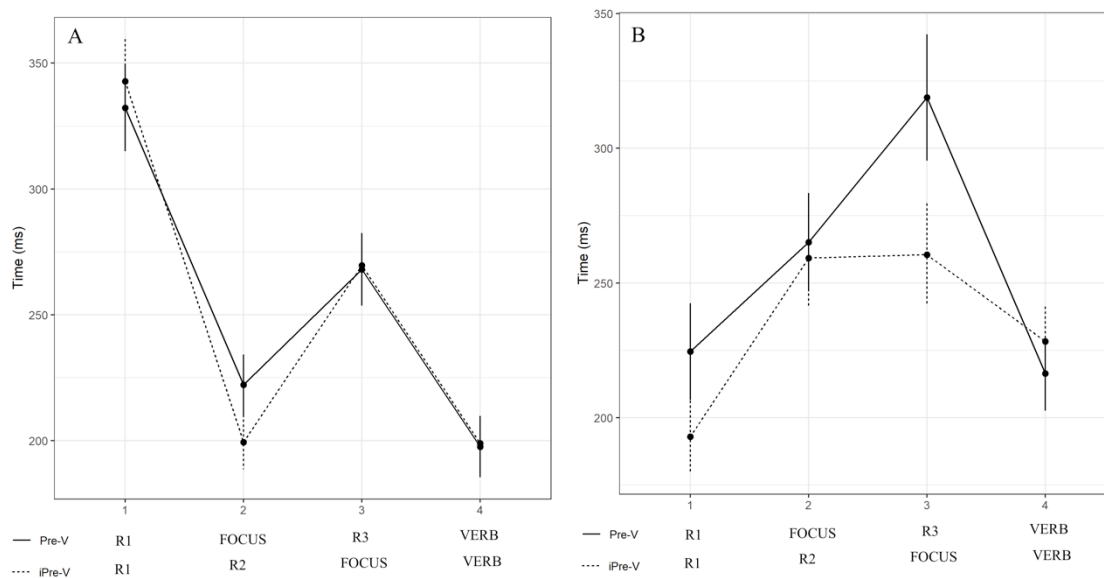
We manipulated the question in the first sentence of these dialogues so as to be able evoke different focus positions in our participants' reading patterns. This is based on the idea that the position of *who*-pronouns, (i.e. either immediately preverbal object or preverbal subject) elicits an inherent focus position in the answer response. The participants were asked to read the dialogs silently while their eye-movements were monitored with a SMI eye-tracker (SensoMotoric Instruments GmbH), and to respond to an end-of-trial acceptability judgement task which overtly required the participants' judgement on whether the answer response was appropriate.

Our results have shown that the participants found answer responses to be acceptable in 99% of the time (SD = 8) in the iPre-V condition while they did so in only 84% of the time (SD = 36) in the Pre-V condition. This difference in conditions was statistically significant, as verified by a generalized mixed-effects regression model ($\beta = 4.30$, $SE = 0.55$, $z = 7.77$, $p < .001$; 95% CIs = [3.33, 5.55]). With regard to first and second pass fixation durations in the eye-movements data, we compared focused and non-focused readings at the immediate preverbal region (i.e. R3, see Figure 1) when this region received an inherent focused element (iPreV) and when not (PreV). Outputs from a set of linear mixed-effects regression models have shown no significant effects of condition for first pass fixation durations ($\beta =$

0.01, SE=0.03, $t = -0.479$, $p > .05$; 95% CIs = [17.77, 21.81]). However, for second pass fixation durations, condition differences were reliably significant ($\beta=0.39$, SE = 0.15, $t = 2.56$, $p < .05$; 95% CIs = [39.13, 43.79]), evidencing that when the focused element was placed elsewhere but not the immediate preverbal region, the participants had longer second pass fixation durations than when the inherent focus was positioned immediately preverbally, due to increased amount of regressions for re-reading.

In conclusion, this study suggests that Turkish speakers anticipate focused elements to occur in the immediate pre-verbal region. These findings support claims made in previous studies that preverbal position allows for a neutral focus reading (Göksel & Özsoy, 2003; Kural, 1992; Taylan, 1984). This conclusion was compatible with both online fixation durations and end-of-trial acceptance rates: Turkish readers favoured immediate preverbal region as the focus position as we observed greater reading disruptions when focused element was elicited in non-immediate preverbal regions. However, it is important to note that it is difficult to tease apart whether and to what extent these second pass time differences between the iPreV and Pre-V conditions occurred due to focus position manipulations or to pure syntactic canonicity effects. A future study would address this using spoken sentence stimuli.

Figure 1. First pass (A) and second pass (B) fixation durations per region of interest.



Selected References

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