What eye movements during silent reading can tell us about preverbal focus in Turkish?

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In most languages, focused elements are generally marked with syntactic canonicity and prosody. Being a flexible word-order language, Turkish uses both the syntactic and prosodic information to mark focus, as it allows for pre-verbal scrambling (İşsever, 2003). The canonical position for neutral focus in Turkish is accepted to be the immediate preverbal position (see Kural, 1992; Taylan, 1984, among others). However, Göksel and Özsoy (2003) suggest 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. 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 have indicated that prosodic processes are imposed during silent reading (e.g., Ashby & Clifton, 2005; Fodor, 1998; Rayner & Pollatsek, 1989), and that inner speech aids comprehension (Carver, 1990; Rayner & Pollatsek, 1989; Slowiaczek & Clifton, 1980). Building upon these studies and the above-mentioned focus accounts, 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 conducted an eye-tracking experiment to a group of 21 young adult native speakers of Turkish. Our linguistic stimuli consisted of 24 sentence pairs, constructed as dialogs with two conditions where the position of the focused element is manipulated: Preverbal (Pre-V, see example 1) and Immediate Preverbal (iPreV, see example 2). We used different questions in first sentence of these dialogs so as to 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 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 (ß=4.30, SE=0.55, z=7.77, $p<.001$; 95% CIs=[3.33, 5.55]). For the eye-movements data with regard to first and second pass fixation durations, 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 (ß= -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 (ß=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, due to regressions for re-reading, than when the inherent focus was positioned immediately preverbally.

In conclusion, this study suggest that Turkish speakers anticipate focused elements to occur in the immediate pre-verbal region. Findings supported the past research (Göksel & Özsoy, 2003; Kural, 1992; Taylan, 1984) that preverbal position allows neutral focus reading. This was consistent 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.

Samples:

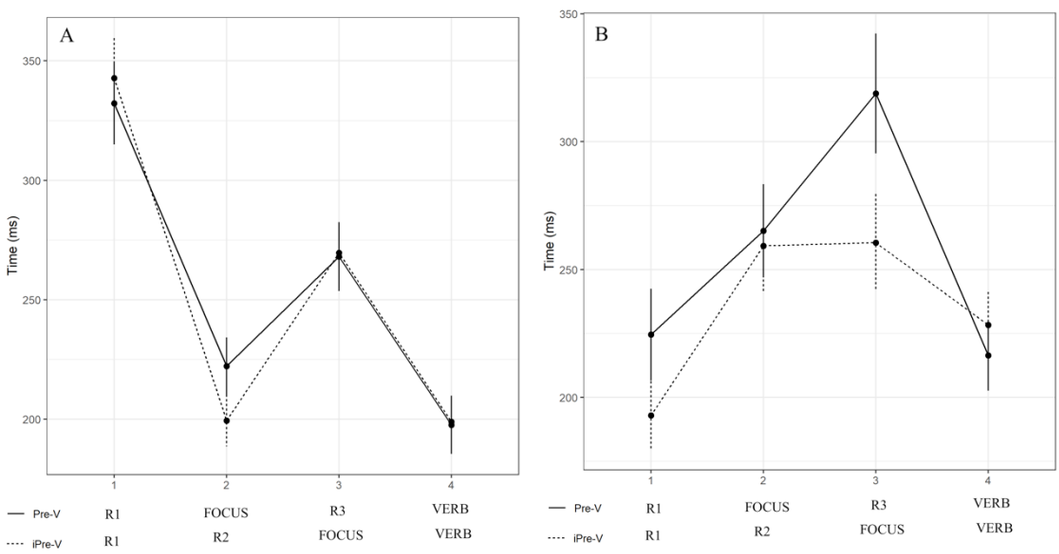
(1)	A:	Dükkanda	kim	kadını	gördü?
		store.LOC	who	woman.ACC	see.PST
	B:	Dükkanda	ÇOCUK	kadını	gördü
		store.LOC	[child]FOC	woman.ACC	see.PST

'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.'

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



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