Processing Focus in Turkish
Didem Kurt & Nazik Dinçtopal Deniz (Boğaziçi University)
didm.bayrak@gmail.com

Background: Sentential stress is assigned to the highest element in the stress domain (Kahnemuyipour, 2009) and mostly corresponds to the immediately preverbal position in Turkish (Göksel & Özsoy, 2003). In a sentence with canonical word-order, sentential stress is associated with broad focus. To mark narrow focus, in addition to pitch accentuation in-situ, Turkish moves the constituent to be focused to the immediately preverbal position (İşsever, 2003). Studies on focus processing in Turkish are limited to theoretical work. This study investigates, experimentally, whether or not the immediately preverbal constituent is associated with broad focus in canonical word-order and with narrow focus in non-canonical word-order in Turkish. An eye-tracking experiment and a sentence completion task were conducted. **Materials:** The experiment employed ditransitive structures followed by replacive phrases as in (1) below. The focus structure of the main clause (broad vs. narrow) and prosodic congruency of the replacive phrase (congruent vs. incongruent) were manipulated. Focus was manipulated via word order, either canonical as in (1a-c) where the immediately preverbal indirect object, *yönetmen-e* (director-DAT), has broad focus, or non-canonical as in (1d-f) where the immediately preverbal direct object, *çiçekler-i* (flowers-ACC), has narrow focus. Prosody was manipulated via the replacive phrase, ____ *değil* (not ____), which contrasted either with the immediately preverbal constituent as in (1a,d), creating prosodic congruency, or with another constituent (the (in)direct object as in (1b,e) or the subject as in (1c,f)), creating prosodic incongruency. **Predictions:** If focus in Turkish is assigned to the immediately preverbal constituent, then the prosodically congruent replacive phrase regions, (1a,d), will be processed faster than the incongruent ones (1b,c,e,f) because in the latter, the position of stress in the immediately preverbal focus would need to be revised. If Turkish speakers use word order as a cue to focus assignment, then, the narrowly-focused immediately preverbal direct object in (1d-f) will be processed slower than the broadly-focused immediately preverbal indirect object in (1a-c) (Lowder & Gordon,2015). At the replacive phrase region, the readers would need to revise the focus in the main clause from broad to narrow in (1a-c), in (1d-f), focus would need to be kept narrow which is predicted to be less costly (Stolterfoht et al., 2007). **Procedure:** In the eye-tracking experiment, the participants (N = 44) read sentences such as (1) and answered a comprehension question. The word preceding *değil* (not) in the replacive region was left blank in the sentence completion task. The participants (N = 38) were to fill it in with a word that would contrast the direct object, indirect object or subject. **Results**: The eye-tracking data were analyzed through mixed effects linear/logistic regression models for the immediately preverbal word (region 3) and the replacive phrase (region 5). Prosodic (in)congruency and focus (broad vs. narrow) were the predictors. The analyses on region 3 showed for gaze duration (GD), rereading duration (RRD) and total duration (TD) that narrow focus increased the reading time for the region 3, t's ≥ 3.16. The analyses on region 5 for four measures (GD,RRD,TD and regression path duration) showed that prosodic incongruency increased the reading time for the region 5, t's ≥ 2.50. The analyses with focus as a predictor showed in GD, RPD (t ≥ 2.25) and the probability of regression out (z = 2.18) that reading region 5 in narrow focus conditions was harder (see Table 1). In the sentence completion task, in both canonical and non-canonical order sentences, the participants preferred the words that were congruent with the immediately preverbal constituent (M = 62%). **Discussion:** Results confirm that the immediately preverbal position is considered as the focus position in Turkish (Erguvanlı, 1984) and is associated with broad focus for canonical word order and with narrow focus for non-canonical word order sentences. They also showed that reassigning narrow focus to another constituent in the main clause was costlier than revising broad focus (cf. Stolterhoft et al., 2007). This might be because information with narrow focus is encoded deeper (Lowder & Gordon, 2015) and its prosodic revision is costlier.

References: Erguvanlı (1984). *The function of word order in Turkish grammar.* **Göksel & Özsoy (2003).** *Lingua, 113*(11), 1143-1167. **İşsever (2003).** *Lingua, 113*(11), 1025-1053. **Kahnemuyipour, A. (2009).** *The syntax of sentential stress.* **Lowder & Gordon (2015**). *Psych. Bulletin and Review, 22*(6), 1733–1738. **Stolterfoht, et al. (2007).** *Cognition,* 104(3), 565–590.

(1) <u>Experimental Sentences</u> (Regions are shown via slashes "/" and subscripted numbers)
a. Broad to Narrow/ Congruous Indirect Object:

Defne Hanım/$_1$	çiçeğ-i/$_2$	yönetmen-e/$_3$	ver-di,/$_4$	aktör-e	değil./$_5$
Defne Miss-NOM	flowers-ACC	director-DAT	give-PAST.3SG	actor-DAT	not

b. Broad to Narrow/ Incongruous Direct Object:

Defne Hanım/$_1$	çiçeğ-i/$_2$	yönetmen-e/$_3$	ver-di,/$_4$	ödül-ü	değil./$_5$
Defne Miss-NOM	flowers-ACC	director-DAT	give-PAST.3SG	throphy-ACC	not

c. Broad to Narrow/ Incongruous Subject:

Defne Hanım/$_1$	çiçeğ-i/$_2$	yönetmen-e/$_3$	ver-di,/$_4$	sunucu	değil./$_5$
Defne Miss-NOM	flowers-ACC	director-DAT	give-PAST.3SG	presenter-NOM	not

d. Narrow to Narrow/ Congruous Direct Object:

Defne Hanım/$_1$	yönetmen-e/$_3$	çiçeğ-i/$_2$	ver-di,/$_4$	ödül-ü	değil./$_5$
Defne Miss-NOM	director-DAT	flowers-ACC	give-PAST.3SG	throphy-ACC	not

e. Narrow to Narrow/ Incongruous Indirect Object:

Defne Hanım/$_1$	yönetmen-e/$_3$	çiçeğ-i/$_2$	ver-di,/$_4$	aktör-e	değil./$_5$
Defne Miss-NOM	director-DAT	flowers-ACC	give-PAST.3SG	actor-DAT	not

f. Narrow to Narrow/ Incongruous Subject:

Defne Hanım/$_1$	yönetmen-e/$_3$	çiçeğ-i/$_2$	ver-di,/$_4$	sunucu	değil./$_5$
Defne Miss-NOM	director-DAT	flowers-ACC	give-PAST.3SG	presenter-NOM	not

Miss Defne gave the flowers to the director, not to the actor/ the throphy/ the presenter.
*(Each sentence was followed by a three-word content neutral sentence such as *Organizasyon/$_6$ öyle yapılmış/$_7$* (It was organized that way) to screen-center the critical region. First word of that sentence was the spill-over region (region 6)).

Table 1. *Mean and standard error (SE) values in parentheses for first fixation duration (FFD), gaze duration (GD), regression path duration (RPD), re-reading duration (RRD), total duration (TD) (in milliseconds) and probability of regression out (PRO) for regions 3 and 5 for the experimental conditions of focus (broad (B) vs. narrow (N)) and prosodic congruency (Congruent (C) vs. Incongruent (InC)) with the direct object (DO), indirect object (IO) or the subject (SU). Prosodically congruent conditions are in bold face. B-N focus is highlighted with green, N-N focus is highlighted with blue.*

		FFD	GD	RPD	RRD	TD	PRO
Region 3	**B-N/C-IO**	255(7.09)	336(14.5)	518(38.7)	379(38.5)	667(38.0)	0.23(0.03)
	B-N/InC-DO	241(6.69)	297(13.4)	564(42.8)	463(46.1)	736(47.6)	0.34(0.03)
	B-N/InC-SU	264(9.7)	352(15.1)	591(53.2)	420(43.3)	713(44.4)	0.25(0.03)
	N-N/C-DO	268(7.67)	268(13.2)	571(41.4)	457(36.4)	740(37.4)	0.27(0.03)
	N-N/InC-IO	262(7.82)	327(12.4)	609(45.9)	475(41.1)	756(41.7)	0.33(0.03)
	N-N/InC-SU	263(9.19)	361(16.5)	597(39.4)	517(47.6)	814(47.7)	0.28(0.03)
		FFD	GD	RPD	RRD	TD	PRO
Region 5	**B-N/C-IO**	259(7.55)	429(15.1)	588(33.4)	283(30.5)	674(34.2)	0.18(0.03)
	B-N/InC-DO	242(7.23)	483(20.8)	733(47.2)	348(36.2)	773(41.2)	0.23(0.03)
	B-N/InC-SU	251(7.17)	420(13.8)	749(60.7)	352(32.5)	757(36.7)	0.222(0.03)
	N-N/C-DO	262(8.24)	452(16.1)	744(56.6)	284(26.5)	697(30.2)	0.244(0.03)
	N-N/InC-IO	262(9.54)	479(17.5)	812(63.2)	315 (30.4)	750(34.7)	0.222(0.03)
	N-N/InC-SU	249(7.72)	454(17.2)	857(66.2)	425(36.1)	810(41.5)	0.311(0.03)