

## The Persian Object Marker –ra and its effect on wh-object fronting

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The Persian object marker (OM) is the suffix –ra. It permits the movement of a wh-object over a wh-subject in a seeming violation of Chomsky’s (1973) *Superiority Condition* which proposes to account for a preference for extracting the structurally higher wh-phrase when two or more elements are eligible for movement. In the case of multiple wh-movements, all wh-phrases move to the left periphery, but the highest one is constrained to move first. For example, (1b) shows that the wh-object cannot cross the wh-subject. However, such movement is allowed when the object is marked by the OM –ra, as in (1c).

- 1) a. Ki chi kharid?  
Who what bought.3s  
“Who bought what?”
- b. \*Chi ki kharid?
- c. Chi-ra ki kharid?

The acceptability of (1c) is accounted for by the *anti-identity constraint* of Relativized Minimality (RM) according to which, in [ $*\bar{\alpha} \dots \alpha \dots \bar{\alpha}$ ] two occurrences of  $\alpha$  cannot form a chain in the presence of an intervening element of the same class  $\alpha$ , unless they are enriched with an additional  $\beta$  feature (Starke, 2001; Rizzi, 2004). A similar ameliorating effect was reported in languages like English for a configuration like (2) where the extractee *which building* contains the feature(s) of the intervener *who*, namely [+wh], but also the additional feature of lexical restriction [+LR] establishing discourse-linking (Pesetsky, 2000). RM captures the relative acceptability of (3a) since the feature set of the intervener is properly included in the feature set of the extractee, whereas the unacceptability of (3b) is due to the identity of the two feature sets.

- 2)  $\alpha\beta$  [*which building* [+wh +D]]...  $\alpha$  [*who* [+wh]]...  $\alpha\beta$  [~~*which building*~~ [+wh +D]]
- 3) a. ?which building do you wonder who built?
- b. \*what do you wonder who built?

The difference between Persian and, say, English, is that in addition to a lexical restriction, Persian has the morphosyntactic feature *-ra* marking d-linking [+D]. This feature is a functional head hosting the NP in its spec position, while in English d-linking requires a lexically restricted wh-phrase.

We carried out an experiment the objective of which was to assess the respective role of lexical restriction and d-linking in the acceptability of Persian multiple questions. We ran an online grammaticality judgment task through Ibox Farm, in which participants (40 native speakers) were asked to judge 64 test sentences on a 1-7 scale of acceptability. The design illustrated in Table 1 contained 8 experimental conditions crossing 3 variables: lexical restriction of the extractee, (lexically restricted wh- vs. bare wh-), d-linking of the extractee (*-ra* vs. no *-ra*), intervention (pronominal vs. wh-subject in multiple questions).

**Table 1: English translation of the Persian test items in the 8 experimental conditions.**

	[-INT]	[+INT]
[-D][-LS]	What do you wonder he bought?	What do you wonder who bought?
[+D][-LS]	What- <b>OM</b> do you wonder he bought?	What- <b>OM</b> do you wonder who bought?
[-D][+LS]	Which book do you wonder he bought?	Which book do you wonder who bought?
[+D][+LS]	Which book- <b>OM</b> do you wonder he bought?	Which book- <b>OM</b> do you wonder who bought?

Statistical analyses using mixed models showed significant effects of intervention, d-linking, and lexical restriction. A significant interaction between d-linking and lexical restriction was also detected, showing a significant effect of lexical restriction in non-ra sentences ([D -LS] received higher ratings than [-D +LS]) while lexical restriction has no effect on ra-marked sentences.

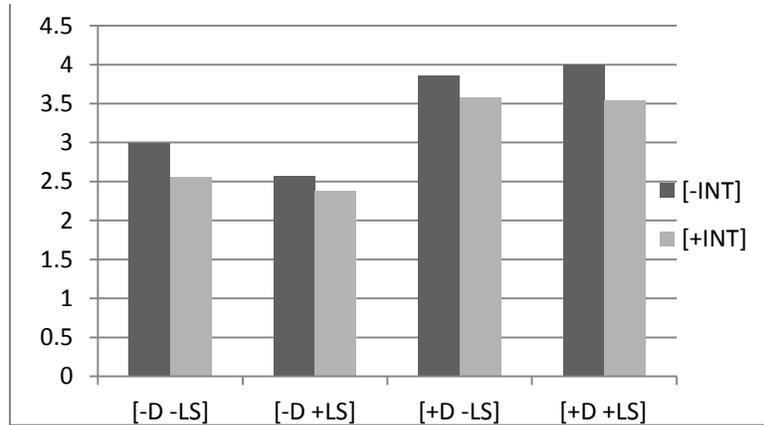


Figure 1: Distribution of acceptability scores in the 8 experimental conditions.

The results show that the variables had a graded effect on performance. D-linking turns out to have a major impact on sentence acceptability, the presence of *-ra* contributing to boost the acceptability of multiple questions to a level that is close to that of sentences without intervention. Nevertheless, the former remain rated significantly lower than the latter, attesting to the potential key role of *wh-* as a criterial feature in defining intervention effects (Rizzi, 1997). The Persian [+D] feature depends on a morphosyntactic marker, independently of the lexical restriction of the *wh-*, which explains the high acceptability of *-ra* marked multiple questions despite the presence of a bare *wh-* extractee. In fact, non *-ra* marked AND lexically restricted *wh-* phrases received the lowest acceptability judgments, suggesting that lexical restriction is contingent on the presence of the morphosyntactic marker *-ra*. In line with this, a lexical restriction failed to play an additional ameliorating role on d-linking, suggesting that the [+D] feature entirely captures the effect. Finally, if we take the view that languages uniformly exploit a system in which there are structurally dedicated positions in the left periphery for moved elements, we postulate that unlike in English, the head of the functional projection which hosts the *wh-* phrases is overtly expressed in Persian by the means of the marker *-ra*.

4) [<sub>spec</sub> what/which book [<sub>FP</sub> *-ra*/∅]]

**Key words:** Superiority condition, Anti-identity constraint, Persian *wh*-object fronting

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