Neutralizing Free Choice Items via Domain Restriction: Farsi *-i* Indefinites

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[Context] According to [Ch13], Free Choice Items (FCIs) are existential DPs that invoke stronger alternatives, and whose interpretation and distribution is determined by the requirement that these alternatives be used in strengthening their basic existential core: when unembedded, this obligatory strengthening derives a contradiction; embedded under a modal, it derives their signature free choice effect (FCE). Previous work has identified strategies that prevent the derivation of a contradiction and license unembedded FCIs: for instance, (i) [Ch13] takes universal FCIs (UFCIs) to scope over modals, and, to avoid a contradiction, relies on restrictions on the possible domain of the modal in the alternatives; (ii) [AMo18] consider last resort alternative pruning in connection to Farsi FCIs; and (iii) [AM15] argues, on the basis of Spanish *algunos*, that alternatives are not excludable and are ignored when they are equivalent to the assertion. How widespread are these strategies across languages? **[Goal]** We contribute novel data from Farsi FCIs that illustrates (iii).

[The Puzzle] We identify two varieties of FCIs in Farsi: *yek* ('one') NP-*i* ('*yek* DPs') and *har* ('each') NP-*i* ('*har* DPs'). **[*yek* DPs]** pattern with other **existential FCIs** (EFCIs): they are licensed under both possibility and necessity modals (1), where they trigger a FCE, and are interpreted as plain existentials in downward entailing (DE) contexts (2) [AMo18]. **[*har* DPs]** pattern with canonical **universal UFCIs**: they are licensed by possibility modals and, when so, trigger a FCE (3), they are not licensed by necessity modals (4-a) or in episodic sentences (4-b), and they are sensitive to subtrigging: as shown in (5), modification rescues (4-a) and (4-b). In cases like the ones in (5), *har* DPs (i) have universal force ((5-a) conveys that Ava read each book that was on her desk, and (5-b) that she is required to read each book that she finds) and (ii), like other UFCIs, retain a modal component and license counterfactual inferences: if (5-a) is true, (6) must be true.

[Accusative marker *-ra*: Losing FCI status] When *yek* DPs and *har* DPs combine with the accusative marker *-ra* (*-ro* in the informal register), they lose their distinctive FCI behavior. We illustrate with *har* DPs: in (7), where *har* DPs + *-ra* appears with a possibility modal, there is no (unrestricted) FCE, (7) conveys that there is a particular group of books each of which Ava is allowed to read—not that she is allowed to read *any* book—and, in contrast with (4-a) and (4-b), unmodified *har* DPs + *-ra* are fine with necessity modals (8) and unembedded in episodic sentences (9). Both (8) and (9) retain universal force, but the universal claim is restricted to a certain group: (8) conveys that Ava is required to read each book in a certain group and (9) that she read each book in a group. Furthermore, in these cases, *har* DPs + *-ra* lose their modal component, as they do not license counterfactual inferences: (9) is compatible with the falsity of (6).

Similar facts obtain with *yek* DPs. For instance, the counterpart of (1) with a possibility modal and *-ra* does not convey a FCE: it conveys that there is a specific book that Ava is allowed to read, rather than that she is allowed to read any book.

[Question] What does *-ra* do to block the FCI status of *yek* and *har* DPs?

[Proposal] **[-ra]** Number neutral bare nouns [MM16] have a definite interpretation when combined with *-ra*. Since [G08] argues that in this case a null definite determiner is present, it is natural to assume that *-ra* restricts the denotation of the bare noun to a singleton, over which the silent definite determiner operates. The behavior of *-ra* with indefinites suggests that this is indeed the case. With existential *yek* DPs, *-ra* yields a specific indefinite interpretation [L12] and allows for exceptional scope readings (the counterpart of (2) with *-ra* conveys that Ava will get a prize if she reads a certain book), as expected of a singleton indefinite [S02]. In the spirit of [L12], who assumes that *-ra*, and other differential object markers, is interpreted as introducing a free variable ranging over choice functions, we take *-ra* to denote a domain selection function that maps a set S to a singleton subset of S—this can be made consistent with [L12] by assuming that the individual that [L12]'s choice function yields is type-shifted to the singleton containing it via IDENT [P87]. The suffix is also obligatory with strong quantifiers, proper names and pronouns. We will leave open the issue of how this analysis might extend to these cases for now.

[*har* vs. *yek*] Like other FCIs under the analysis presented in [Ch13], we take both *har* and *yek* DPs to be existentials triggering domain and scalar alternatives that have to be obligatorily exhaustified—unless, we will add, they turn out to be equivalent to the assertion. We assume that *har* and *yek* DPs differ in what they quantify over. At the assertion level, *har* DPs require a domain containing at least one plurality and *yek* DPs containing at least one atomic individual ((11) and (12), where '$\mathrm{P}(f)$ / $\mathrm{A}(f)$' is the set of plural / atomic individuals in the set characterized by f.) With [DF07], we assume that *-i* introduces the alternatives. The domain and scalar alternatives for *har NP -i* are given in (13) and (14), and those for *yek NP -i* in (15) and (16).

[Illustration] This setup is designed to capture canonical FCI behavior. When unembedded, strengthening the core existential claim delivers a contradiction. To illustrate: assuming a domain with three books, (17)(i) makes the existential assertion in (18)(i) (where b_n is the proposition that A read b_n, note that adding $b_1 \wedge b_2 \wedge b_3$ to (18) is equivalent to (18).) (18)(i) gets strengthened with the negation of the stronger 'pre-exhaustified' domain alternatives in (18)(ii) and the negation of the scalar alternative in (18)(iii). Strengthening the assertion with the negation of the alternatives in (18)(ii) and (iii) yields a contradiction. This contradiction can be avoided when modals are present. With [Ch13], we assume that UFCIs take maximal scope with respect to any modal operators as in (17) (ii), but that EFCIs don't (17) (iii). When the existential scopes under the modal, as in (17)(iii), strengthening doesn't yield a contradiction, as illustrated in (19). (17) (ii) is still expected to yield a contradiction, as illustrated in (20), contrary to fact. [Ch13] avoids this conclusion by assuming that the interpretation of UFCIs is subject to a principle ('Modal Containment') that requires the modal component in the scalar implicature in (20) (c) to make reference to a set of accessible worlds smaller than the modal component in the domain implicature in (20) (b).

If *-ra* shifts the domain of the existentials to a singleton set, we expect the implicature clash in (19) and (20) to disappear because both the domain implicatures and scalar implicatures will be equivalent to the assertion. Consider (21), as illustration. The assertion that (21) makes will depend on what the value of the singleton domain selection function is. Assuming, as before, a domain with only three atomic books, (21) can assert any of the propositions in (22)(a) (ignoring contradictions). For each of these assertions, the result of considering a possible subdomain of the domain that the existential ranges over is equivalent to the assertion, as there is only one subdomain (improper) to consider. And because the domains are restricted to a singleton, for each of these potential assertions, the corresponding scalar alternatives in (22)(b) will also be equivalent to the assertion. If alternatives cannot be excluded and vacuous strengthening is allowed, the predicted interpretation of (21) is the unmodalized claim that Ava read each book in a certain group of books. Parallel reasoning predicts the *yek* version of (21) to convey that Ava borrowed a particular book.

[Conclusion] Farsi FCIs + *-ra* exemplify a situation similar to that discussed in [AM15], where a certain morphological configuration conspires to neutralize alternatives because they turn out to be equivalent to the assertion. There also cases where *-ra* seems to signal indeterminacy with respect to the type of domain, as in (23). We leave the analysis of these cases (and its potential connections to FCIs that also express type-indeterminacy [AS17]) for further research.

(1) Ava mitune/bayad **ye** ketab-i be-xun-e.
Ava can/must one book-I IMP-read-3.S
'Ava can / must read a book–any book.'

(2) age Ava **ye** ketab-i bexun-e, jaize migire.
if Ava one book-I read-3.S gift take-3.S
'If Ava reads a book, she gets a gift.'

(3) Ava mitune **har** ketab-i be-xun-e.
Ava can each book-I IMP-read-3.S
'Ava can read any book.'

(4) a.*Ava bayad **har** ketab-i be-xun-e.
Ava must each book-I IMP-read-3.S
b.*Ava **har** ketab-i xund.
Ava each book-IND read-3.SG

(5) a. Ava **har** ketab-i ke roo miz-esh boode bashe xund-e.
Ava each book-I that on table-POSS.3SG was SUBJ read-PERF-3.S
'Ava read any book that was on her desk.'
b. Ava bayad **har** ketab-i ke peyda mikone be-xun-e.
Ava must each book-IND that find does IMP-read-3.SG
'Ava must read any book she finds.'

(6) Counterfactual inferences: If *The Blind Owl* had been on her desk, Ava would have read it.

(7) Ava mitune **har** ketab-i ro be-xun-e.
Ava can each book-I ACC IMP-read-3.S
'Ava can read each book.'

(8) Ava bayad **har** ketab-i ro be-xun-e.
Ava must each book-I ACC IMP-read-3.S
'Ava must read each book.'

(9) Ava **har** ketab-i ro xund.
Ava each book-I ACC read-3.S
'Ava read each book.'

(10) $[\![\text{-ra}_{i_{\langle et,et\rangle}}]\!]^g = \lambda f : i \in dom(g) \wedge \forall h |g(i)(h)| = 1 . g(i_{\langle et,et\rangle})(f)$

(11) $[\![\text{har}]\!] = \lambda f{:}\text{P}(f) \neq \varnothing . \lambda g . \exists x \begin{bmatrix} f(x) \wedge \text{P}(x) \\ \wedge \forall y_{\text{at}} \leq x[g(y)] \end{bmatrix}$

(12) $[\![\text{yek}]\!] = \lambda f : \text{A}(f) \neq \varnothing . \lambda g . \exists x \begin{bmatrix} f(x) \wedge \text{A}(x) \\ \wedge\ g(x) \end{bmatrix}$

(13) $\left\{ \lambda g . \exists x \begin{bmatrix} D(x) \wedge \text{P}(x) \\ \wedge \forall y_{\text{at}} \leq x[g(y)] \end{bmatrix} \middle| D \subseteq [\![NP]\!] \right\}$

(14) $\left\{ \lambda g . \forall x \begin{bmatrix} [\![NP]\!](x) \wedge \text{P}(x) \\ \to \forall y_{\text{at}} \leq x[g(y)] \end{bmatrix} \right\}$

(15) $\{\lambda g . \exists x[D(x) \wedge \text{A}(x) \wedge g(x)] | D \subseteq [\![NP]\!]\}$

(16) $\{\lambda g . \forall x[[[\![NP]\!](x) \wedge \text{A}(x)] \to g(x)]\}$

(17) i: har book -i 1 [A. read t_1] ii: har book -i 1 can [A. read t_1] iii: can [yek book -i 1 [A. read t_1]]

(18) i: $(b_1 \wedge b_2) \vee (b_2 \wedge b_3) \vee (b_1 \wedge b_3)$ ii: $\{ (b_1 \wedge b_2) \wedge \neg b_3, (b_2 \wedge b_3) \wedge \neg b_1, \ldots \}$, iii: $\{ b_1 \wedge b_2 \wedge b_3 \}$

(19) $\Diamond(b_1 \vee b_2 \vee b_3) \wedge (\Diamond b_1 \leftrightarrow \Diamond b_2 \leftrightarrow \Diamond b_3) \wedge \neg \Diamond(b_1 \wedge b_2 \wedge b_3)$

(20) a. $\exists x[x \in \{b_1 \oplus b_2, b_1 \oplus b_3, b_2 \oplus b_3\} \wedge \Diamond R(A,x)] \wedge$
b. $\exists x[x \in \{b_1 \oplus b_2\} \wedge \Diamond R(A,x)] \leftrightarrow \exists x[x \in \{b_2 \oplus b_3\} \wedge \Diamond R(A,x)] \leftrightarrow \exists x[x \in \{b_1 \oplus b_3\} \wedge \Diamond R(A,x)] \wedge$
c. $\neg \forall x[x \in \{b_1 \oplus b_2, b_1 \oplus b_3, b_2 \oplus b_3\} \to \Diamond R(A,x)]$

(21) har (ro$_n$ (book -i)) 1 [A. read t_1]

(22) a. $\exists x[x \in \{b_1 \oplus b_2\} \wedge B(F,x)], \exists x[x \in \{b_1 \oplus b_3\} \wedge B(F,x)], \exists x[x \in \{b_2 \oplus b_3\} \wedge B(F,x)], \exists x[x \in \{b_1 \oplus b_2 \oplus b_3\} \wedge B(F,x)]$
b. $\forall x[x \in \{b_1 \oplus b_2\} \to B(F,x)], \forall x[x \in \{b_1 \oplus b_3\} \to B(F,x)], \forall x[x \in \{b_2 \oplus b_3\} \to B(F,x)], \forall x[x \in \{b_1 \oplus b_2 \oplus b_3\} \to B(F,x)]$

(23) Ava ye ketab-i ro xund.
Ava one book-I ACC read-3.SG
'Ava read a book in a certain set of books.'

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