Research article: Symmetric Merge in Persian Syntax, Evidences from Across-The-Board Wh and Wh Questions

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Abstract

Asymmetric merge of the sentence constituents enables the Phonetic Form of the language to put the merged constituents in proper order for pronunciation based on the "Linear Correspondence Order". The existence of various constructions like across-the-board wh and wh-questions derived by the computational system of language and different methods for analyzing them proposed by various scholars, have led to reviewing the certainty of the asymmetric relation between the merged constituents.

Chomsky (2001) proposes two kinds of merge: external merge and internal merge. External merge takes two disjoint syntactic objects and combines them to form one larger syntactic object. Internal merge, often referred to simply as Move, is an operation "responsible" for displacement in grammar. This intuition implies the possibility that syntactic objects can be pronounced and interpreted in different positions. Considering the characteristics of external and internal merge, Citko (2000, 2003, 2005) proposed the third kind of merge operation namely as Parallel merge. Parallel merge (symmetric merge) is like external merge in that it takes two distinct objects as its input. However, it is also like internal merge in that it combines one with a subpart of the other.

The symmetric merge leads to multi-dominance structures in which a constituent is simultaneously dominated by more than one node. Multi-dominance structures have special characteristics and the computational system of language needs special mechanisms for handling them. Important questions which should be answered

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about these structures are how to linearize them and how the features of shared elements are checked.

The asymmetric relation among the constituents of sentence is necessary since only the asymmetric constituents have the prerequisites needed for the Phonetic Form of the language to pronounce the constituents according to the LCA (Kayne, 1994). Apparently, the symmetric constituents are not able to be pronounced since they violate the LCA but the studies of Wilder (1999b, 2008), Gračanin-Yüksek (2007) and Johnson (2007) on modifying the definition of c-command have paved the way to make the symmetric merged constituents compatible with the prerequisites for the Phonetic Form. The newly developed notion enables the PF to linearize the shared elements in situ. In this new definition, the LCA can ignore some of the orders which violate the LCA. Wilder (2008) proposed the notion of "full dominance" which enables the shared elements to be pronounced correctly. According to Wilder (2008:238-9):

a. X fully dominates α if and only if X dominates α and X does not share α.
b. α is shared by X and Y if and only if (i) neither of X and Y dominates the other, and (ii) both X and Y dominate.

Moreover, the definition of c-command is modified relying on the full dominance as follows:
a. X c-commands Y only if X does not fully dominate Y
b. d(A) = the set of terminals fully dominated by A.
(Wilder 2008:243)

By this definition the shared elements, since they are not fully dominated by A, are not considered in d(A) and the PF has the correct order for pronunciation.
The second property of the multi-dominance structures is about feature checking of the shared elements. The operation "Agree" in the Minimalist Programme is responsible for providing values to unvalued features. This operation is a one-to-one relationship between Probe and Goal in a c-command domain. In symmetric merge this relationship turns into a many-to-one relationship between Probes and Goals. In order to solve this issue, Hiraiwa (2005) explores the possibilities of single Probe valuing features on different Goals simultaneously in a process which he calls as "Multiple Agree". His study suggested the opposite in which the Agree operation can take place between several Probes and a single Goal as schematized below:
$P_{u\Phi} > G_{uCase,\Phi}, G_{uCase,\Phi}$
$P_{u\Phi}, P_{u\Phi} > G_{uCase,\Phi}$
Hiraiwa (2005: 51)

Having this mechanism, the shared element in multi-dominance structures can have its unvalued features being valued by two Probes simultaneously. Any inconsistency between the obtained values may result in ungrammaticality of the derived sentence unless the morphological component will determine whether the result is possible or not.
For studying the possibility of existence of symmetric merge in deriving the sentences in the Persian language, the across-the-board wh and wh-questions are selected. Based on the evidences observed from the internal relations among the constituents of the across-the-board wh and wh-questions in Persian language such

as existence of the same tense in two conjuncts, impossibility of voice mismatches of little verbs between two conjuncts, simultaneous movement of the noun phrase from two conjuncts, lack of multiple fronting of wh-elements, existence of the same case in both conjuncts for the shared noun phrase and impossibility of using of different arguments of predicates in two conjuncts, it is concluded that a noun phrase, little v, T, and C heads are shared between the two conjuncts. Accepting the existence of shared elements between two conjuncts provides us with simple and comprehensive analysis for across-the-board wh and wh-questions in Persian. Moreover, analyses based on symmetric merge can also be used for studying other structures in Persian such as parasitic gap, right node raising, gapping, and wh-questions with conjoined wh-pronouns. In all the cited structures, we have shared element(s) the characteristics of which the symmetric merge approach can explain in a simple and convincing way.