# Lexical Determination of Merger:
## A Minimalist Approach to the Lexicon-Syntax Interface

This paper attempts to integrate two theoretical approaches to the way the lexicon interacts with syntax. One is the Active Lexicon approach (Siloni, 2002), and specifically the Theta System, as developed by Reinhart (2000, 2002) and Reinhart and Siloni (2005). The other is the Minimalist Program (Chomsky, 1995, 1999, 2001), and more specifically the suggestions made therein regarding types of merger. By showing how these two approaches work together, this paper also aims to account for unresolved issues concerning the lexicon-syntax interface, namely: (i) If we abandon the Little-v Hypothesis (as suggested by Horvath & Siloni, 2004), and adopt the framework of Bare Phrase Structure (Chomsky, 1995), what distinguishes internal arguments from external arguments? (ii) How can the mapping principles suggested by Reinhart (2002) capture the fact that certain internal arguments form islands for extraction, while others do not?

I adopt the assumption made by Chomsky (2001) that there are minimally two distinct types of merger: ***set-merge*** (associating verbs with direct objects, functional heads with their complements, etc.), and ***pair-merge*** (primarily responsible for adjunction). The former creates a domain which is accessible for extraction, while the latter creates an island.

Within the Theta System, a verb's lexical entry undergoes marking which prepares it for syntactic derivation, part of which is assignment of mapping indices that determine internal/external mapping of arguments (Reinhart, 2002). I suggest a novel interpretation for these argument-mapping indices in terms of the two types of merger described above. In addition to the proposal's theory-internal appeal, it explains empirical data that the previous formulation of the Theta System cannot, namely the behavior of ditransitive verbs and experiencer verbs, with respect to the islandhood of their arguments.

### Theta System Marking Procedure

The marking procedure applies to lexical entries of verbs with at least 2 arguments (Reinhart, 2002), and assumes the decomposition of θ-roles into /±c and /±m features (as suggested by Reinhart, 2000): ±c meaning "cause change", and ±m meaning "mental state relevant" ([+c +m]: agent; [+c]: cause; [+c -m]: instrument; [-c +m]: experiencer; [-c]: goal/source; [-c -m]: theme; [+m]: sentient; [-m]: subject matter). The marking procedure:

(1)
- Mark homogeneous [+] clusters with 1.
- Mark homogeneous [−] clusters with 2.

(mixed clusters remain unmarked)

### New Interpretation for Mapping Indices

(2)
- Index 2: ***set-merge*** this argument ***first***
- No index: ***pair-merge*** this argument
- Index 1: ***pair-merge*** this argument ***last***

(if two arguments are given the same marking, optionality in order of merger should arise, modulo language-specific PF-adjacency requirements on assignment of Case)

### Empirical Advantages

The dative construction of ditransitive verbs (following Landau, 1994):

(3)
a. $\text{Who}_1$ did John send [pictures of $t_1$] [to a friend of Mary]?
b. $\text{Who}_1$ did John send [pictures of Bill] [to a friend of $t_1$]?

Given Binary Branching (Kayne, 1984), at most one of the two internal arguments is in complement position. Thus, at least one of (3a-b) represents licit extraction from a specifier position, which is surprising, given Huang (1982) and Kayne's (1984) observation that specifiers usually block extraction. However, given (1), *send* would be marked as follows:

(4) *send*: $[+c\ +m]_1$ ("agent"), $[-c\ -m]_2$ ("theme"), $[-c]_2$ ("goal")

Following (2), both the "theme" and "goal" arguments are merged via ***set-merge***, resulting in domains from which extraction is licit.

Experiencer verbs (following Johnson, 1992):

(5) a. * [Which parents]$_1$ did the situation worry [children of $t_1$]?
b. * [Iz kakogo universiteta]$_1$ novosti vzvolnovali [gostej $t_1$]? (Russian)
from which university news worried visitors

The situation that arises in (5) is converse: extraction is blocked from an argument that occupies a complement position. However, given (1), *worry* would be marked as follows:

(6) *worry*: [+c]$_1$ ("cause"), [-c +m] ("experiencer"), [-m]$_2$ ("subject-matter")

According to Pesetsky (1995), (5) is a derivation in which only the "experiencer" and "subject-matter" arguments are realized. Following (2), the "experiencer" argument is merged via ***pair-merge***, and is thus predicted to be an island for extraction.

Theoretical Consequences

As observed by Huang (1982) and Kayne (1984), specifiers often pattern with adjuncts in terms of extraction. Kayne (1994) suggested that specifiers are in fact an instance of adjunction, and Horvath and Siloni (2004) suggest that specifiers are in fact ***pair-merged***. The proposal captures this intuition, since most arguments in specifier position would indeed be merged via ***pair-merge***. However, since the proposal does not explicitly rely on the notions *specifier* or *complement*, it is able to capture the exceptional behavior of certain specifiers and complements with respect to extraction. Such an approach fits well within a framework of Bare Phrase Structure (Chomsky, 1995, 1999, 2001), as the latter aims to eliminate the primitive distinction between specifier and complement altogether.

In addition, the proposed interpretation of the mapping indices is theoretically more appealing than the conventional interpretation, as it gives rise to a completely local decision-making process at the point of merger between verb and argument. Nothing besides the marking of the specific θ-role being discharged needs to be considered.

Finally, if we assume the mapping indices are precisely the part of a lexical entry that is legible to syntax at the interface, the proposed interpretation for them corresponds to independently well-motivated syntactic operations, namely ***set-merge*** and ***pair-merge***.

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