Argument Mapping and Extraction

1. **What is Externality?** Concerning external arguments, several questions arise: (1) a. How is the external argument chosen from the verb's arguments?, b. Once merged, what accounts for its syntactic behavior?, and c. Why do certain internal arguments pattern with external arguments (see below)?

1.1. **How is the External Argument Chosen?** Consider (5-6). The Experiencer argument in (6) is external, as shown by "untriggered inversion" (7a) (Reinhart & Siloni, 2005; Shlonsky, 1987) and the possessive dative test (7b) (Borer & Grodzinsky, 1986). The post-verbal accusative-marked Experiencer argument in (5) is obviously internal, and this can be shown by the possessive dative. As observed by Reinhart (2001), the Subject Matter argument in (5) is also internal, as shown in (8).

To summarize, the cases in (5) lack an external argument, while those in (6) contain an external argument. However, the thematic roles involved in (5) and in (6) are the same. Thus, (1a) cannot be answered in terms of thematic information alone – neither the Little-*v* Hypothesis nor an approach in terms of thematic hierarchies can account for the different mapping of the same thematic role in (5-6).

The verbs in (5) lack external arguments but have accusative Case (overtly manifested in Hebrew), while the verbs in (6) have external arguments but lack accusative Case. This state of affairs stands in contradiction with Burzio's generalization.

In Reinhart's (2002) mapping system, Experiencer arguments are mapped externally by default, and the only thematic roles which can preempt an Experiencer's external mapping are Agent, Cause, and Sentient – none of which are present in (5-6). Thus, the different behavior of the Experiencer in (5) and in (6) is a problem for her system as well (as Reinhart herself notes; see Reinhart, 2001).

It appears there is no presently available analysis which deals with the mapping facts in (5-6).

1.2. **What is Syntactically Special about External Arguments?** The framework of Bare Phrase Structure (Chomsky, 1994) abandons the primitive distinction between specifier and complement, viewing them instead as derivative structural observations.

Horvath and Siloni (2004) argue for the rejection of the Little-*v* Hypothesis. However, as they point out, this leaves open the question of how to map the sole argument of an unergative verb in a different position than the sole argument of an unaccusative verb (given Bare Phrase Structure).

2. **Extraction – More Data:** Surprisingly, an Experiencer argument blocks extraction despite being internal (9b). Islandhood doesn't depend on being in a specifier or complement position, as both internal arguments in (10a-b) allow extraction, and given Binary Branching (Kayne, 1984), at least one is in specifier position (see below for a discussion of Dative Shift).

3. **Proposal**: Reinhart (2000) proposes decomposing θ-roles into features: ±c ("cause change"), and ±m ("mental state relevant"). A cluster can be underspecified for one of its features.

(2) Clusters: [+c +m]: Agent; [+c]: Cause; [+m]: Sentient; [+c -m]: Instrument;
[-c +m]: Experiencer; [-c -m]: Theme; [-c]: Goal/Source; [-m]: Subject Matter.

Given this system, I propose an account for the facts in sections 1 and 2:

(3) a. Uniform [-] clusters: Merged into syntax via standard *set-merge* (Chomsky, 2001), creating a domain which is accessible to extraction.
b. Other clusters: Merged via *pair-merge*, creating an inaccessible domain for extraction.

(4) An external argument is a *pair-merged* argument which does not check accusative Case.

Consider the examples in (5-6) again (as elaborated in (11-12)). Following (3), an Experiencer ([-c +m]) argument, which is a mixed cluster, is *pair-merged*, while a Subject Matter ([-m]) argument, which is a uniform [-] cluster, is *set-merged*.

Following (4), the *pair-merged* Experiencer surfaces as an external argument (i.e. moves to TP to check EPP; does not react to internal argument tests (7)) when it does not check accusative Case (12). When it does check accusative Case (11), it is not external (i.e. does not move to TP to check EPP).

The fact that it is *pair-merged* accounts for the surprising islandhood of the Experiencer, even when it is an internal argument (9b). In (10), other internal arguments were shown to allow extraction. These arguments were Theme ([-c -m]) and Goal ([-c]), both uniform [-] clusters. Following (3), these are *set-merged*, and thus predicted to allow extraction. This is the advantage of divorcing islandhood from the external/internal mapping of arguments, and from the specifier/complement distinction.

Following Larson (1988), the Goal argument in the Double Object construction (13a) undergoes movement to check structural Case. The account can therefore be extended to handle Dative Shift by assuming that Internal-Merge is always *pair-merge*, meaning a moved constituent will always become an island (similar to the Freezing Principle; see Wexler & Culicover, 1977, 1980). As I will show, this also allows the Subject Condition to be derived, instead of viewing it as a theoretical primitive.

The formulation of externality without reference to the specifier/complement distinction, as in (4), allows different mapping for external and internal arguments without stipulated X-bar structure or little-*v* (see 1.2). The proposal also captures Kayne's (1994) intuition that specifiers are an instance of adjunction, since specifiers are usually either *pair-merged* arguments or moved constituents.

(5) a. It worried the children that John was smoking.
b. hid'ig et ha-yeladim Se-Dan me'aSen (Hebrew)
worried ACC the-children that-Dan smoking
'It worried the children that Dan was smoking.'

(6) a. The children worried that John was smoking.
b. ha-yeladim da'agu Se-Dan me'aSen (Hebrew)
the-children worried that-Dan smoking
'The children worried that Dan was smoking.'

(7) a. * da'agu Sney studentim (Hebrew)
worried two students
b. * le-mi ha-student da'ag me-ha-macav
to-who the-student worried from-the-situation

(8) a. It worried the children [that John was smoking].
b. ?? It broke the window [that we were throwing rocks at it].

(9) a. Who_1 did the teacher meet [the parents of t_1]?
b. * Who_1 did the situation worry [the parents of t_1]?
(adapted from Johnson, 1992)

(10) a. Who_1 did you give [a picture of t_1] to John?
b. Who_1 did you give a picture [to the parents of t_1]?
(adapted from Landau, 1994)

(11) a. *worry* with ACC – roles: Experiencer ([-c +m]), Subject Matter ([-m])
b. It worried [$_{Exp.}$ the children] [$_{S.M.}$ that John was smoking]. ((5a) repeated)

(12) a. *worry* without ACC – roles: Experiencer ([-c +m]), Subject Matter ([-m])
b. [$_{Exp.}$ The children] worried [$_{S.M.}$ that John was smoking]. ((6a) repeated)

(13) a. * Who_1 did you give [the parents of t_1] a picture?
b. Who_1 did you give John [a picture of t_1]?
(adapted from Landau, 1994)

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