Intervention effects in wh-islands and non-islands: Experimental evidence

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According to featural Relativized Minimality (henceforth, fRM; e.g., Friedmann et al. 2009), the degradation of sentences involving intervention is a function of the degree of feature overlap between the intervener and the elements it separates: strong ill-formedness is predicted for configurations in which the relevant featural specification of the intervener fully matches that of the extracted element (Bare Identity and Inverse Inclusion), milder deviance for configurations involving a partial match of features (Inclusion and Complex Identity, which reduces to Inclusion if the lower wh-element has the option of targeting a bare [+Q] position: see Rizzi 2011), while no degradation is expected for configurations not involving any feature overlap (Disjunction). Relevant features are then defined in terms of their potential to trigger movement.

Predictions ensuing from fRM were tested in two acceptability studies in French. Experiment 1 investigated the acceptability of sentences containing extraction from weak islands involving various degrees of feature overlap (as illustrated in (1)). Experiment 2 tested the acceptability of extraction from declarative sentences as in (2), in which the intervener does not have any feature in common with the extractee (except for condition (2d), the status of which will be discussed later). For each condition we manipulated the lexical restriction of both the extracted and the intervening elements.

**Extraction from a weak island:**

(1) a. Bare Identity: *What*; do you wonder *who* built __ i?
   \[+Q\]
   \[+Q\]
   b. Complex Identity: *Which building*; do you wonder *which engineer* built __ i?
   \[+Q,+N\]
   \[+Q,+N\]
   c. Inverse Inclusion: *What*; do you wonder *which engineer* built __ i?
   \[+Q\]
   \[+Q,+N\]
   d. Inclusion: *Which building*; do you wonder *who* built __ i?
   \[+Q,+N\]
   \[+Q\]

**Extraction from a declarative:**

(2) a. Disjunction (Bare_Bare): *What*; do you believe that *he* built __ i?
   \[+Q\]
   \[+Pro\]
   b. Disjunction (Bare_Restrict): *What*; do you believe that *the engineer* built __ i?
   \[+Q\]
   \[+N\]
   c. Disjunction (Restrict_Bare): *Which building*; do you believe that *he* built __ i?
   \[+Q,+N\]
   \[+Pro\]
   d. Inclusion (Restrict_Restrict): *Which building*; do you believe that *the engineer* built __ i?
   \[+Q,+N\]
   \[+N\]

fRM predicts Extraction from a declarative condition to be rated higher than Extraction from a wh-island condition, as the former does not contain intervention (except for (2d) which in fact is expected to be on par with (1d), both being cases of Inclusion). Moreover, under the assumption that the amount of feature overlap provides a measure of the degree of deviance, we expect configurations in (2) to be placed on the highest point of a continuum going from strong ill-formedness (identity) to well-formedness (disjunction) passing through cases of milder deviance (inclusion).
Four sets of sentences of the kind of (1) were generated for Experiment 1 and four sets of sentences of the kind of (2) were generated for Experiment 2. Experimental sentences were intermixed with 88 fillers. The same 40 participants took part in the two experiments and they were asked to judge the acceptability of the sentences on a 7-point Likert scale. Data were analysed with mixed-effects modelling. Results are shown in Figure 1.

Individual models on** Extraction from a weak island** revealed the following pattern ("<" meaning “less acceptable than” and "+" meaning “on a par with”): Bare Identity = Inverse Inclusion < Inclusion < Complex Identity. This pattern globally validates predictions ensuing from fRM except for Complex Identity which turned out to be rated higher than Inclusion, a finding that remains unexplained under fRM. Individual models on** Extraction from a declarative** returned (2a) and (2b) to be rated on a par and both rated lower than conditions (2c) and (2d), which were on a par. As correctly predicted by fRM, configurations with no feature overlap (Extraction from a declarative) were rated higher than configurations with overlap (Extraction from wh-islands). Interestingly, this was also true for condition (2d) which turned out to be rated higher than (1d), despite both being cases of Inclusion. We suggest that this finding can be explained building on the distinction between criterial (i.e., features relevant for the semantic interface, as +Q, +R(elative), +TOP, +FOC) and non-criterial features (i.e., features that only contribute to the fine identification of the landing site of movement) (see Rizzi 2003 for a discussion on the distinction between criterial and non-criterial features). In particular, it is arguable that whereas an overlap with criterial features determines strong sentence degradation (as is the case for all sentences in (1) in which the overlap always involves [+Q]), an overlap with non-criterial features (i.e., [+N]) only finely modulates sentence acceptability.

The distinction between criterial and non-criterial features also accounts for the huge improvement observed for Extraction from a declarative with respect to Extraction from a wh-island: if an overlap with criterial features causes strong sentence degradation, sentences with no such overlap are expected to be strongly improved with respect to sentences containing it, rather than being on a continuum.

One final aspect of the data concerns the status of Complex Identity. The higher acceptability of Complex Identity with respect to Inclusion was unexpected under fRM. One way to address this finding would be to broaden the class of features taken into account in the calculation of the constraint, currently taken to be morphosyntactic features triggering movement, to also include the lexical features expressed by lexical restriction. If such features were taken into account in the calculation of locality, the set-theoretic relation between the two lexically restricted wh-elements would become one of Intersection (a configuration discussed in Belletti et al. 2012), which is indeed predicted to be rated higher than Inclusion under fRM. Further research is necessary in order to assess the validity of that hypothesis.