

Movement and alternatives don't mix: A new look at *wh*-intervention effects

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Summary: In this talk I argue that two ways of scope-taking provided by the grammar—movement and focus alternative computation—are fundamentally incompatible with one another. Based on data from intervention effects in English questions, I show that movement cannot target a region in the structure in which focus alternatives are being computed. Instead, movement must target a position above or below such regions, or another scope-taking mechanism must be used. This proposal provides an empirical argument against higher-typed and variable-free semantics which have been proposed to avoid such a theoretical incompatibility, and support for a simple-typed system with movement alongside alternative computation as scope-taking mechanisms. The proposal has far-reaching implications for a wide array of linguistic phenomena, including the nature of movement, focus, intensionality, and binding, as well as for the theory of intervention effects.

Background: *Intervention effects* constrain possible question LFs. An example is shown in (1–2) (Korean): an intervener (here, **Minsu-man** = ‘only Minsu’) cannot c-command an in-situ *wh*-word. Intervention is avoided by scrambling the *wh* above the intervener. The general intervention configuration is given in (3).

- (1) ?* **Minsu-man** *nwukwu-lul manna-ss-ni?* (2) ✓ *nwukwu-lul_i Minsu-man t_i manna-ss-ni?*
Minsu-only who-acc meet-past-Q who-acc Minsu-only meet-past-Q
‘Who did only Minsu meet?’ ‘Who did only Minsu meet?’
- (3) a. LF: *[CP C ... **intervener** ... *wh*] b. LF: ✓ [CP C ... *wh_i intervener ... t_i*]

In English, intervention—diagnosed by the loss of the pair-list reading—affects superiority-violating questions (4b), but not superiority-obeying ones (4a). This is argued to show that the surface in-situ *wh*-phrase in superiority-obeying questions covertly moves above the intervener, yielding an LF as in (3b), but in superiority-violating questions *wh* must remain LF-in-situ to allow the base-generated lower *wh* to move over it, leading to an LF as in (3a) (Pesetsky, 2000; Beck, 2006; Cable, 2007, 2010; Kotek, 2014a).

- (4) a. ✓ *Which* linguist did **only Mary** introduce *t* to *which* philosopher? superiority-obeying
b. * *Which* philosopher did **only Mary** introduce *which* linguist to *t*? superiority-violating

Four new generalizations and a proposal: I propose that interveners are λ -abstractors (at the target positions of scope-taking movement, Heim and Kratzer 1998) in the path of focus alternative computation. Intervention results from the grammar’s inability to compute λ -abstraction over regions of alternative computation, a fact that has been shown in Rooth (1985) and Shan (2004), among others. This differs from all previous descriptions of intervention, and predicts that it is a more general problem than previously thought.

- (5) LF: *[CP C ... λ ... *wh*]

This proposal is supported by new data motivating the following four generalizations, corroborating the prediction above: (a) intervention correlates with covert movement possibilities but not with superiority (contra Pesetsky, 2000; Cable, 2007, 2010), (b) definite descriptions, bare plurals, and existential quantifiers can act as interveners (contra Beck, 1996, 2006; Haida, 2007; Tomioka, 2007; Mayr, 2010; Li and Law, 2014, a.o.), (c) not only operator-driven \bar{A} -movement, but also A-movement, causes intervention effects, (d) although quantification over individuals causes intervention effects, quantification over worlds does not. Sample data supporting these generalizations is shown below (supporting contexts omitted).

a. Intervention correlates with movement possibilities, not superiority: Superiority-obeying questions are said to be immune from intervention effects because the surface in-situ *wh*-phrase can covertly move above any interveners in the structure at LF. However, intervention effects are observed if covert *wh*-movement is restricted in some way. Example (6) uses Association with Focus to block covert movement: an F-marked item cannot move out of the scope of its associating operator (Tancredi, 1990, a.o.). In (6b), *which philosopher_F* must be interpreted below the intervener **only**, leading to an intervention effect—the loss of the pair-list reading (example based on data in Erlewine (2014); see also data in Kotek (2014b) for a similar example restricting movement using syntactic islands and reporting a similar result).

- (6) a. I can tell you [*which* linguist introduced Mary to *which* philosopher]. baseline
 b. * I can tell you [*which* linguist **only** introduced Mary to *which* philosopher_F].

Intervention can be avoided in superiority-violating questions if one of two conditions are met: (a) the intervener can move above C (see examples in Beck 1996; Pesetsky 2000) or reconstruct below *wh*, or (b) *wh* can be given wide scope above the intervener through non-interrogative movement, e.g. extraposition or Right Node Raising (cf Bachrach and Katzir, 2009):

- (7) a. * *Which* book did **only Mary** allow *which* student to read *t*?
 b. ✓ *Which* book did [**only Mary** allow], and [**only John** prohibit], *which* student to read *t*?

b. 'Non-interveners' act as interveners: A signature property of intervention effects is that definite descriptions, bare plurals, and existential quantifiers are not interveners. However, non-interveners can be *turned into* interveners, if they are forced to move: e.g. if they host Argument Contained Ellipsis. Intervention is avoided if no ACE is present. (Data omitted for space reasons, but see (8) for another example.)

c. Intervention with A-movement chains: A-movement chains cause intervention effects whenever reconstruction is blocked. For example, individual-level predicates require their subject to vacate ν P (Diesing, 1992), and hence cannot involve reconstruction of the subject to its base position. In such cases, we observe intervention. Here, intervention is caused by a bare plural, traditionally believed not to be an intervener:

- (8) a. ✓ *Which* person are **counselors** available to discuss *which* issue with *t*? stage-level
 b. * *Which* person are **counselors** careful to discuss *which* issue with *t*? individual-level

d. Modals are not interveners: All known interveners quantify over individuals. However, quantification over worlds does not lead to intervention. One example of this, with *should*, is shown here:

- (9) a. ✓ *Which* abstract **should** Mary assign *t* to *which* reviewer? superiority-obeying
 b. ✓ *Which* reviewer **should** Mary assign *which* abstract to *t*? superiority-violating

Some implications: The above data lead to the conclusion that intervention effects happen in a structural configuration in which a moved element occurs between an LF-in-situ *wh*-phrase and C. I adopt from Kim (2002); Beck (2006) and others the idea that *wh*-in-situ are interpreted using Rooth-Hamblin alternatives, and from Rooth (1985); Shan (2004) the idea that a λ -binder cannot occur inside a region of focus-alternative computation, because in such a configuration, the alternatives cannot be correctly identified. Thus, intervention happens whenever focus-alternatives and λ -binding are intertwined in a structure, and avoided when intervening material can be interpreted without λ -binding, as I will argue is the case for existentials, bare plurals, and indefinites, for reconstruction, and for modals.

Rooth (1985); Poesio (1996); Shan (2004); Novel and Romero (2009) propose a repair for the problem Rooth (1985) identifies, involving higher-order basic types and a different semantics for *wh*-words, or a variable-free semantics. The characterization of intervention and new evidence presented here provide an empirical argument against these kinds of repair. These results support a syntax that allows for overt and covert movement (as in the Heim and Kratzer (1998) system) alongside focus-alternative computation (as in the Roothian system), and a semantics with simple basic types. The data illustrated here furthermore constitute a significant contribution to the discussion surrounding the correct characterization of intervention effects, as they pose a problem for all current theories of intervention, cited above.

Selected references: Beck 2006. Intervention effects follow from focus interpretation. *NLS*. Cable 2010. The grammar of Q: Q-particles, *wh*-movement and pied-piping. *Oxford University Press*. Kim 2002. Intervention effects are focus effects. *Proceedings of J/K 10*. Pesetsky 2000. Phrasal movement and its kin. *MIT Press*. Rooth 1985. Association with focus. *PhD dissertation, UMass Amherst*. Shan 2004. Binding alongside Hamblin alternatives calls for variable-free semantics. *Proceedings of SALT 16*.