Interpreting movement across phase boundaries[*]

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1. The problem

Reconstruction effects have by and large motivated a bifurcated approach to the interpretation of movement, wherein there are two interpretive mechanisms. The first mechanism is a λ-bound variable (possibly with internal structure à la Trace Conversion), which effectively interprets a moved element in its landing site (1a); I will refer to these λ-bound variables as TRACES. The second mechanism is SYNTACTIC RECONSTRUCTION, whereby the moved element is "placed back" in its launching site at LF (e.g., via selective copy interpretation), which yields reconstruction effects (1b).

(1) DP [… [Op … [… DP …]]]

a. *Interpreting with a trace*
LF: **DP** [λx [… [Op … [… x …]]]] (DP ≫ Op)

b. *Interpreting with syntactic reconstruction*
LF: ~~DP~~ [… [Op … [… **DP** …]]] (Op ≫ DP)

Achieving the LFs in (1a) and (1b) requires interpreting the higher and lower copies of a movement step in very particular ways. For the trace LF in (1a), the lower copy must be interpreted as a variable, and the higher copy must be interpreted as-is. For the reconstruction LF in (1b), the lower copy must be interpreted as-is, and the higher copy must be completely ignored or "neglected" (adopting the terminology of Sportiche 2016). Another difference between (1a) and (1b) is the presence or absence of the λ-operator; for the sake of simplicity, I will assume that the λ-operator can be freely inserted as needed.[1]

[*]Thanks to Kyle Johnson, Rajesh Bhatt, Stefan Keine, and the audience at NELS 50 for helpful discussion and comments. This paper stems from Poole (2017), where more extensive discussion may be found.

[1]Following Heim and Kratzer (1998), I assume that when an element moves, a copy of its index is adjoined immediately below the moved element's landing site; this index translates into the λ-operator. Against this

There is an inherent nonlocality in choosing between a trace and reconstruction as the mechanism to interpret a movement dependency.[2] When the semantics encounters the lower copy of a movement step, it must determine whether (i) to interpret that copy as a trace, to ultimately derive a trace LF, or (ii) to interpret that copy as-is, to ultimately derive a reconstruction LF. How the semantics interprets the lower copy must in turn match how it interprets the higher copy. For example, if the lower copy is interpreted as-is, then the higher copy must be neglected.

Mismatches in how the higher and lower copies are interpreted will generally result in undesirable meanings. Crucially, though, the mismatches will not (necessarily) result in uninterpretable LFs; that is, the semantic types still work out, and the LF can be interpreted with standard semantic-composition rules. This is illustrated with the toy examples in (2) and (3). With the mismatch in (2), the lower copy gets interpreted as a free variable, like a pronoun, thereby effectively erasing the meaning of *no one*. With the mismatch in (3), the higher copy ends up being truth-conditionally vacuous, but the presuppositional content of the moved element gets reintroduced upstairs, thereby preventing (or undoing) the local accommodation of the lower copy's presupposition by *think*.

(2) *Higher copy: neglect, lower copy: trace (a mismatch)*

a. [no one] [Alex likes [no one]]

b. LF: ~~[no one]~~ [Alex likes x]

(3) *Higher copy: as-is, lower copy: as-is (a mismatch)*

a. [the unicorn] [Alex thinks [they caught [the unicorn]]]

b. LF: [the unicorn] λx [Alex thinks [they caught [the unicorn]]]

The examples in (2) and (3) are just toy examples, but it is easy to think of movement types for which these mismatches would be problematic. For example, (2) would be problematic for QR, and (3) would be problematic for *wh*-movement (where *the* is replaced with *which*).[3] Therefore, mismatches in how the higher and lower copies are interpreted must be prevented.

In addition to determining how to interpret the higher and lower copies, the semantics must also figure out that the copies are part of a movement chain in the first place, i.e., that they are copies and not repetitions. Crucially, the processes that neglect copies and render

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backdrop, the 'free insertion' of the λ-operator can be characterized more precisely as a choice between interpreting and neglecting the copied index at LF.

[2] λ-variable binding is also nonlocal. However, this nonlocality is unproblematic because its two pieces are independently interpreted via the variable-assignment function (Heim and Kratzer 1998):

(i) a. $[\![x_i]\!]^g := g(i)$ *Traces & Pronouns Rule*

b. $[\![[\ i\ \phi\ ]]\!]^g := \lambda y\ .\ [\![\phi]\!]^{g[i \to y]}$ *Predicate Abstraction*

[3] For discussion of presupposition projection in *wh*-questions, see Rullmann and Beck (1998).

copies into variables must apply only in the context of movement. In order to make these determinations and prevent mismatches of the sort in (2) and (3), the semantics needs access to *both* the higher and lower copies. If we assume that semantic interpretation applies to the entire structure (i.e., Spellout applies only at the end of the narrow-syntactic derivation), then the semantics will have suitable access to both copies, and such determinations can in principle be made (precisely how is inconsequential for the argument at hand).

However, this state of affairs is at odds with a phase model of syntax, wherein syntactic structure reaches the interfaces in small chunks: the complements of phase heads are shipped off to the interfaces cyclically (Chomsky 2000, 2001). The problem is that movement from within a phase complement to the phase edge (either criterial or intermediate) results in an interface chunk containing the lower copy, but not the higher copy. As such, movement (and in turn the structure at large) cannot be interpreted on a phase-by-phase basis under standard Minimalist assumptions, because the higher copy necessary for the interpretation is not part of the chunk that reaches LF along with the lower copy. To illustrate, consider (4), where a movement chain comprising two movement steps crosses over two phase boundaries.

(4) $\mathrm{DP}_{\alpha} \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_{\beta} \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_{\gamma} \ldots] \ldots]$

In (4), the interpretations of DP_{α}, DP_{β}, and DP_{γ} are not independent of each other. There are in principle two approaches to this problem: (i) make the lower copy's interpretation contingent on the higher copy or (ii) make the higher copy's interpretation contingent on the lower copy. Both of these approaches, however, would require looking across a phase boundary, in violation of the PIC and undermining the spirit and purpose of phase theory.[4]

It should be emphasized that a generate-and-filter model does not in and of itself provide a solution to this problem. (5) lists all the logically possible LFs for (4) if the choice between (i) interpret as-is, (ii) neglect, and (iii) convert into a variable were free for each copy in the chain. While many of these LFs are uninterpretable because of semantic-type mismatches in the DP_{γ} position (i.e., the tail) (5s–a′), many other LFs are interpretable but yield undesirable meanings (5e–r), for the reasons discussed above for (2) and (3).[5] In fact, only four of the twenty-seven logically possible LFs produce possible meanings for such a chain (5a–d).

(5) a. *Reconstructs into the lowest position*
$\sout{\mathrm{DP}_{\alpha}} \ldots [_{\text{phase-complement}} \ldots \sout{\mathrm{DP}_{\beta}} \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_{\gamma} \ldots] \ldots]$

b. *Reconstructs into the intermediate position*
$\sout{\mathrm{DP}_{\alpha}} \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_{\beta}\ \lambda x \ldots [_{\text{phase-complement}} \ldots x \ldots] \ldots]$

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[4]Because chains can span multiple phase boundaries, appealing to the weak PIC will not help here.

[5]Several of these interpretable-but-undesirable LFs could be filtered out with a constraint on vacuous quantification, i.e., λ-operators that bind no variables. This would alleviate, but not remedy the problem. However, a constraint on vacuous quantification is computationally complex (Marsh and Partee 1984) and poorly motivated (Potts 2002). I will show that we can solve the tension between interpreting movement and phase theory without resorting to such a constraint and while allowing (the equivalent of) only (5a–d).

c. *No reconstruction*
$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots x\ \lambda y \ldots [_{\text{phase-complement}} \ldots y \ldots] \ldots]$

d. *No reconstruction*
$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots x \ldots] \ldots]$

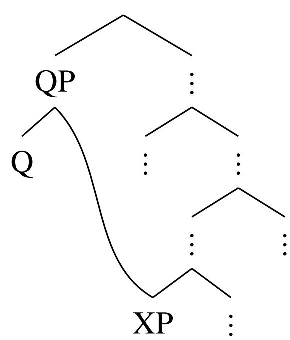
e. 💣~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots x \ldots] \ldots]$
f. 💣~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda x \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
g. 💣~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots x\ \lambda y \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
h. 💣~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots x\ \lambda y \ldots [_{\text{phase-complement}} \ldots y \ldots] \ldots]$
i. 💣$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
j. 💣$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda y \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
k. 💣$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda y \ldots [_{\text{phase-complement}} \ldots y \ldots] \ldots]$
l. 💣$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots x\ \lambda y \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
m. 💣$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
n. 💣$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots y \ldots] \ldots]$
o. 💣$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda z \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
p. 💣$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda z \ldots [_{\text{phase-complement}} \ldots z \ldots] \ldots]$
q. 💣$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots y\ \lambda z \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\gamma \ldots] \ldots]$
r. 💣$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots y\ \lambda z \ldots [_{\text{phase-complement}} \ldots z \ldots] \ldots]$
s. *~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
t. *~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta \ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
u. *~~DP_α~~ $\ldots [_{\text{phase-complement}} \ldots x\ \lambda y \ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
v. *$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
w. *$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda y \ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
x. *$\mathrm{DP}_\alpha\ \lambda x \ldots [_{\text{phase-complement}} \ldots x\ \lambda y \ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
y. *$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots$ ~~DP_β~~ $\ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
z. *$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots \mathrm{DP}_\beta\ \lambda z \ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$
a′. *$x\ \lambda y \ldots [_{\text{phase-complement}} \ldots y\ \lambda z \ldots [_{\text{phase-complement}} \ldots$ ~~DP_γ~~ $\ldots] \ldots]$

In sum, interpreting movement presents a problem for phase theory because the choice between reconstruction and a trace cannot be computed on a phase-by-phase basis. While one might consider this problem a reason to reject phase theory outright or to weaken it slightly so that the syntactic structure is shipped off to LF only at the end of the narrow-syntactic derivation, but to PF on a phase-by-phase basis, I believe that these solutions would be undesirable. Instead, the line of thinking that I advance in this paper is that we can solve the problem between interpreting movement and phase theory if we remove the *nondeterminacy* between using a trace and reconstructing. In other words, the idea is that the semantics does not have to make the choice between (1a) and (1b). Rather, I propose that the difference between 'trace' and 'reconstruction' is encoded in the syntactic representation of movement dependencies. Movement dependencies can then be directly interpreted without any (optional) LF processes dedicated to movement. I will present one such implementation of this idea, couched in terms of Johnson's (2012, 2014) independently-motivated multidominant syntax for movement.[6] In addition to resolving the tension between interpreting movement and phase theory, I will show that this general approach has two additional upshots: (i) it does not require optional LF processes and (ii) it allows us to capture the reconstruction profiles of different movement types.

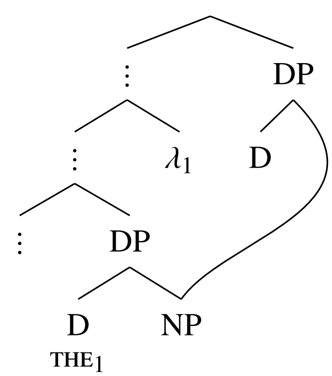
2. Background: Multidominant syntax for movement

I adopt Johnson's (2012, 2014) Parallel-Merge multidominant syntax for movement, where *wh*-movement and Quantifier Raising (QR) are representationally distinct.[7] *Wh*-movement involves first the *wh*-phrase parallel-merging with its base position and with a Q-particle (in the sense of Cable 2010), and then the resulting QP merging higher in the main structure, for example in [Spec, CP], as schematized in (6). QR involves two DPs sharing an NP—derived by the NP parallel-merging with the two D heads—where the lower DP is a bound definite description and the higher DP is the quantificational nominal, as schematized in (7). Note that the spatial order of siblings in (6) and (7) does not represent a particular linearization.

(6) *Wh-movement*



(7) *Quantifier Raising (QR)*



Important for present purposes is how (6) and (7) are interpreted. In *wh*-movement (6), XP introduces focus alternatives, and the Q-particle "catches" those alternatives by returning the focus value of its argument as an ordinary value, yielding a question meaning (8) (Beck 2006, Cable 2010, Kotek 2019).[8] Crucially, the Q-particle does not semantically combine with XP, and thus XP is only interpreted in its base position.[9]

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[6]For a purely copy-theoretic implementation of this idea, see Poole (2017:127–131).

[7]An independent upshot of Johnson's (2012, 2014) system is that there is no Internal Merge—in the sense that there is no merging of an element with an element that dominates it.

[8]For a choice-function semantics for (6), see Poole (2017:146–149).

[9]This disassociation is equivalent to Kotek's (2019) proposal that the Q-particle and the *wh*-phrase separate at LF through a process that she dubs *Q-fission*.

(8) a. $[\![Q\ \alpha]\!]^o = [\![\alpha]\!]^f$ (where α is type $\langle s,t\rangle$, $\langle\langle s,t\rangle,t\rangle$, …)

b. $[\![\text{what}]\!]^o$ is undefined
$[\![\text{what}]\!]^f = \{x_e : x \in \text{nonhuman}\}$

A simplified semantic derivation for *wh*-movement on this system is given in (9). Note that in what follows, some structures are "flattened" for reasons of space, and strikethrough indicates material not-interpreted in that position.

(9) [$_{\text{CP}}$ [$_{\text{QP}}$ Q ~~[which cat]~~] [$_{\text{TP}}$ Alex T [$_{\text{VP}}$ adopt [which cat]]]]

a. $[\![\text{which cat}]\!]^o$ is undefined
$[\![\text{which cat}]\!]^f = \{x_e : x \in \text{cat}\} = \{\text{Garfield}, \text{Snowball}, \ldots\}$

b. $[\![\text{VP}]\!]^o$ is undefined
$[\![\text{VP}]\!]^f = \{\lambda y_e\, \lambda w\ .\ \textsc{adopt}_w(x)(y) : x \in \text{cat}\}$
$= \{y \text{ adopted Garfield}, y \text{ adopted Snowball}, \ldots\}$

c. $[\![\text{TP}]\!]^o$ is undefined
$[\![\text{TP}]\!]^f = \{\lambda w\ .\ \textsc{adopt}_w(x)(\text{Alex}) : x \in \text{cat}\}$
$= \{\text{Alex adopted Garfield, Alex adopted Snowball}, \ldots\}$

d. $[\![\text{CP}]\!]^o = [\![\text{TP}]\!]^f = \{\lambda w\ .\ \textsc{adopt}_w(x)(\text{Alex}) : x \in \text{cat}\}$
$= \lambda p_{\langle s,t\rangle}\ .\ \exists x[\textsc{cat}(x) \wedge p = \lambda w\ .\ \textsc{adopt}_w(x)(\text{Alex})]$

The representation of QR in (7) is essentially a syntactic implementation of Fox's (2002) Trace Conversion, and it is interpreted analogously: the lower DP is bound by the λ-operator merged immediately below the landing site, as sketched in (10). Unlike *wh*-movement in (6), where XP is only interpreted in its base position, the NP in (7) is interpreted in both of its positions, i.e., in both the higher DP and the lower DP.

(10) a. $[\![\textsc{the}]\!]^g = \lambda y \lambda f\ .\ \iota x[f(x) \wedge x = g(y)]$ *(takes an index and the NP restrictor)*

b. $[\![[\text{ D NP }]\ \lambda_1 \ldots [\,[\ \textsc{the}\ 1\ ]\text{ NP }]]\!]^g$
$= [\![\text{D NP}]\!]^g\ [\ \lambda_1\ [\ \ldots \iota x[[\![\text{NP}]\!]^g(x) \wedge x = g(1)] \ldots\ ]\,]$

Due to space limitations, the specifics of how to linearize the structures in (6) and (7) are not discussed here. In a nutshell, the linearization algorithm involves linearizing *paths* (Johnson 2017; also Poole 2017:135–138). It allows (6) and (7) to manifest as displacement (or not) and spells out (7) contingent on the higher D (not necessarily as *the* or as covert).

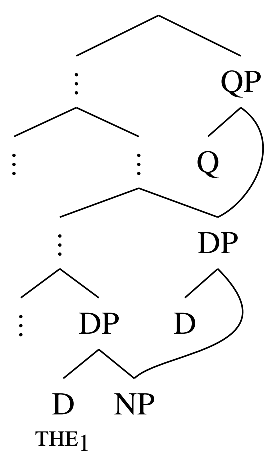
3. Proposal

I propose that the structures in (6) and (7) are the general building blocks for displacement. I will refer to them as *QP-movement* and *DP-movement* respectively (even though 'movement' is somewhat of a misnomer in the context of multidominance). As such, all movement dependencies are built out of sequences of QP-movement and DP-movement.

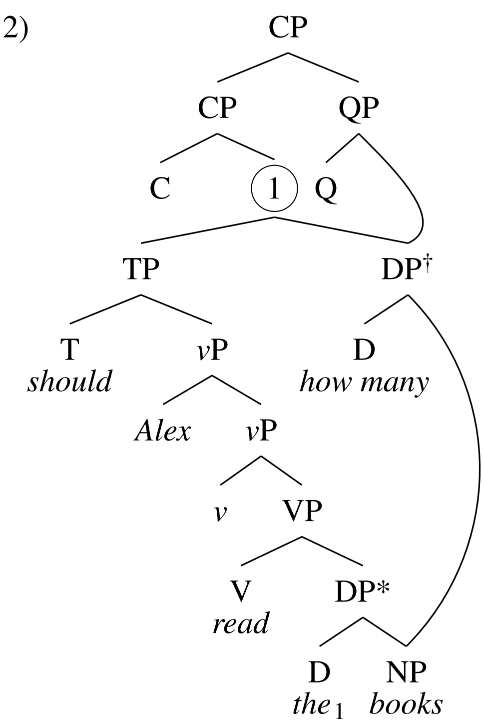
Consider the connection between the trace/reconstruction dichotomy and how QP-movement and DP-movement are interpreted, the details of which were laid out above. In QP-movement (6), XP is interpreted in its base position, and Q does not semantically combine with XP. Thus, the interpretation of QP-movement corresponds to a reconstruction LF, because XP is effectively interpreted as if it had not moved. In DP-movement (7), the "moved" DP takes scope in the higher of the two positions, and the lower DP is interpreted like a bound variable. The interpretation of DP-movement thus corresponds to a trace LF.

Crucially, DP-movement may feed QP-movement, as schematized in (11). In a DP→QP-sequence, the displaced element takes scope in the position of the highest DP, and the linearization algorithm assigns the DP→QP-sequence a linearization that is equivalent to that of QP-movement (Poole 2017:165–168).

(11) *DP→QP sequence*



(12)



A simplified semantic derivation of the DP→QP-sequence in (12) is given in (13).

(13) a. $[\![\text{DP*}]\!]^g = \iota x[\textsc{book}^*(x) \wedge x = g(1)]$

b. $[\![v\text{P}]\!]^g = \lambda w\ .\ \textsc{read}^*_w(\iota x[\textsc{book}^*(x) \wedge x = g(1)])(\text{Alex})$

c. $[\![\text{TP}]\!]^g = \lambda w\ .\ \textsc{should}_w\big(\lambda w'\ .\ \textsc{read}^*_{w'}(\iota x[\textsc{book}^*(x) \wedge x = g(1)])(\text{Alex})\big)$

d. $[\![\text{DP}^\dagger]\!]^o$ is undefined

$[\![\text{DP}^\dagger]\!]^f = \{\lambda P_{\langle e,st\rangle}\, \lambda w\ .\ \exists y[\#y = d \wedge \textsc{book}^*(y) \wedge P(y)(w)] : d \in D_d\}$

e. $[\![\textcircled{1}]\!]^{o}$ is undefined

$$[\![\textcircled{1}]\!]^{f} = \{\lambda w\ .\ \exists y[\#y = d \wedge \textsc{book}^{*}(y) \wedge \textsc{should}_{w}(\lambda w'\ .\ \textsc{read}^{*}_{w'}(\iota x[\textsc{book}^{*}(x) \wedge x = y])(\text{Alex}))] : d \in D_{d}\}$$

f. $$[\![\text{CP}]\!]^{o} = [\![\textcircled{1}]\!]^{f} = \{\lambda w\ .\ \exists y[\#y = d \wedge \textsc{book}^{*}(y) \wedge \textsc{should}_{w}(\lambda w'\ .\ \textsc{read}^{*}_{w'}(\iota x[\textsc{book}^{*}(x) \wedge x = y])(\text{Alex}))] : d \in D_{d}\}$$

The DP→QP-sequence allows us to account for movement types that optionally reconstruct: the movement uniformly targets a QP, but that QP may contain a DP itself involved in DP-movement. For example, on this analysis, English *wh*-questions are ambiguous between (i) just QP-movement (6), yielding the equivalent of a reconstruction LF, and (ii) a sequence of DP-movement feeding QP-movement (11), yielding the equivalent of a trace LF. On this proposal, DP-movement (essentially QR) is the sole means of shifting scope.

4. Consequences

4.1 Phase-by-phase interpretation

With both DP-movement and QP-movement, how the tail of the pair is interpreted is entirely independent of the head of the pair, and vice versa. Therefore, the semantics can interpret the head and the tail directly, based solely on the semantics of the elements involved in building the dependency. Crucially, when there is a phase boundary between the head and the tail, all of the information needed to interpret the tail is contained inside the relevant phase complement, and likewise for the head, as shown in (14). There is no need to look across phase boundaries.

(14) a. $[_{\text{QP}}\ \text{Q}\ \cancel{\text{XP}}\ ]\ \ldots\ [_{\text{phase-complement}}\ \ldots\ \text{XP}\ \ldots\ ]$

b. $[_{\text{DP}}\ \text{D NP}\ ]\ \lambda_{1}\ \ldots\ [_{\text{phase-complement}}\ \ldots\ [_{\text{DP}}\ \textsc{the}_{1}\ \text{NP}\ ]\ \ldots\ ]$

c. $[_{\text{QP}}\ \text{Q}\ \cancel{[_{\text{DP}}\ \text{D NP}\ ]}\ ]\ \ldots\ [_{\text{phase-complement}}\ \ldots\ [_{\text{DP}}\ \text{D NP}\ ]\ \lambda_{1}\ \ldots\ [_{\text{phase-complement}}\ \ldots\ [_{\text{DP}}\ \textsc{the}_{1}\ \text{NP}\ ]\ \ldots\ ]\ldots]$

Consequently, on this proposal, movement dependencies can always be interpreted on a phase-by-phase basis, in line with the tenets of phase theory.

4.2 No optional LF processes

Genuinely optional processes in the mapping from syntax to semantics are problematic, because this mapping is meant to be a *function*. This is an issue for the standard approach to interpreting movement, which involves various optional LF processes; see section 1. Under the proposal in this paper, because reconstructed and nonreconstructed movement correspond to distinct structures, no optional processes are needed. *Every syntactic structure has exactly one interpretation.*

4.3 Movement types

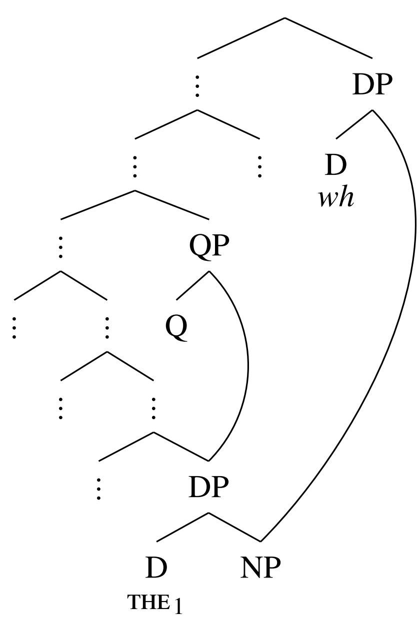
Not every movement type exhibits reconstruction effects uniformly; some exhibit no reconstruction effects at all, and some do so only optionally. On the standard approach to interpreting movement, this requires that the semantics be able to reference syntactic movement types. Under the proposal in this paper, different movement types involve different syntactic structures, and the semantics can thus operate without direct reference to movement types. Movement types that optionally reconstruct are ambiguous between QP-movement and a DP→QP sequence (e.g., *wh*-movement). Movement types that obligatorily reconstruct involve only QP-movement (e.g., Japanese long scrambling; Bošković and Takahashi 1998). Finally, movement types that never reconstruct involve only DP-movement (e.g., QR).

5. Conclusion

This paper has shown that there is a tension between interpreting movement and phase theory and proposed that this tension can be resolved if the difference between 'trace' and 'reconstruction' is encoded in the syntactic representation of movement dependencies. I presented an implementation of this idea in terms of Johnson's (2012, 2014) independently-motivated multidominant syntax for movement.

There are many further issues, but one that I wish to highlight here is that while DP-movement may feed QP-movement, QP-movement may *not* feed DP-movement (15). The structure is (arguably) syntactically well-formed, but the meaning that it produces is not.

(15) *QP-movement feeding DP-movement*



If we associate QP-movement and DP-movement with the traditional notions of $\overline{\text{A}}$-movement and A-movement respectively, then this sequence parallels improper movement, and perhaps might be ruled out as such. Another idea suggested in Poole (2017:168–169) is that (15) might be blocked because the amount of structure shared in a QP→DP sequence does not stand in a proper-containment relation. I leave resolving this issue for future research.

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