

Precede-and-command revisited revisited

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INTRODUCTION. In a recent article in *Language*, Benjamin Bruening (Bruening 2014, henceforth B14) proposes to replace the familiar notion of c-command (1) by phase-command (2), where phases are the categories in (3), and to rephrase Condition C of the Binding Theory of Chomsky (1981), (4), in terms of the precede-and-command condition in (5).

(1) *c-command*

α c-commands δ iff α is merged with (a constituent dominating) δ

(2) *phase-command*

α phase-commands δ iff there is no phasal node γ such that γ dominates α but not δ

(3) *phases*

clause (CP), verb phrase (vP), noun phrase (DP)

(4) *Condition C (Chomsky 1981)*

a. An R-expression is free

b. x is free if there is no y such that y c-commands x and x and y are co-indexed

(5) *Condition C (B14)*

a. An R-expression is free

b. x is free if there is no y such that y precedes and phase-commands x and x and y are co-indexed

At issue is the question how syntactic dependency relations are defined. B14 starts from the assumption that syntactic structures break down into a particular type of local domains (phases), and argues that within phases, dependency is defined by precedence alone.¹

Condition C of the Binding Theory concerns the dependency between an R-expression (a nonpronominal noun phrase) and some antecedent, such that the R-expression and the antecedent cannot be interpreted as coreferential, as in (6).²

- (6) a. *He_i loves John_i
b. *I met him_i in Ben_i's office
c. *He_i said that John_i is an idiot

In this reply, I argue (contra B14) that the Condition C-facts of English cannot be used to demonstrate the relevance of phases for defining dependency relations. If so, evidence supporting the substitution of c-command by phase-command would have to be found in other domains of the grammar.

This reply first discusses the relevance of phases for Condition C-effects (section 1-4) and closes with a remark on the conceptual necessity of the phase-command relation and the postulate 'phase' on which it relies.

1. CONDITION C-EFFECTS AND THE RELEVANCE OF PHASES. The relevance of phases for the interpretation of R-expressions can be illustrated by the minimal pair of (6a) and (7).³

- (7) [_{DP} His_i mother] loves John_i

¹ The definition of phases follows Chomsky (2001), except that Chomsky does not discuss the phase status of noun phrases. Note that the definition of phase-command in B14 (see (2)) does not block dependency relations across phase boundaries *per se*, but only in the specific situation where the antecedent is contained in a phase that does not also contain (a phase that contains) the dependent.

² In the examples, elements intended to be coreferential are co-indexed, and the grammaticality judgment refers to that interpretation only.

³ B14 is careful to illustrate the relevance of phases for the interpretation of R-expressions using slightly more complicated structures (of the type *He/his mother loves John's friends*), in order to avoid interference from conditions on reflexivity. We return to examples like (7) in section 3, and the observations made there extend to these more complicated cases as well (see footnote 10), so that we can abstract away from the distinction here.

In B14, the fact that *John* and *his* may be coreferential in (7) is explained since the DP *his mother* is a phase containing *his* but not *John*. As a result, no dependency relation exists forcing an obviative interpretation of *John* with respect to *his*. The phase-command analysis here obtains the same result as the c-command analysis. Under the c-command analysis, *his* in (7) does not c-command *John* (is not merged with a constituent that contains *John*) and therefore no dependency relation between *John* and *his* exists.

The relevance of the vP-phase for Condition C-effects is illustrated by the minimal pair of (6b), repeated here as (8a), and (8b), where (6b)/(8a) involves a VP-adjunct *in John's office* and (8b) an IP-adjunct *in Kissinger's native country*.⁴

- (8) a. *I [_{vP} met him_i in Ben_i's office]
 b. People [_{vP} worship him_i] in Kissinger_i's native country

In (6b)/(8a), *him* precedes *Ben* within the same phase vP, creating a dependency relation that forces an obviative reading of *Ben*. But in (8b), *Kissinger* is not contained in the same phase vP as *him*, blocking a dependency relation between the two, and making a coreferential interpretation possible.

The relevance of the CP-phase is illustrated by examples like (9), where (9a) involves coordination of IPs and (9b) of CPs.⁵

- (9) a. *[_{IP} He_i has a lot of talent] and [_{IP} Peter_i should go far].
 b. Mary said [_{CP} that he_i has a lot of talent] and [_{CP} that Peter_i should go far].

In (9b), *he* is contained in a phase (CP) that does not contain *Peter*, so there is no dependency relation and no obviation. In (9a), there is no phase node that shields *he* off from *Peter* (IP is not a phase, see (3)), and since *he* precedes *Peter*, there is a dependency relation forcing obviation.

⁴ (6b)/(8a) is B14's (10), from Reinhart 1976:155, (8b) is B14's (31b), from Reinhart 1976:69.

⁵ (9a) is B14's (39a), from Langacker 1969:162, (9b) is B14's (40b). Several native speakers I have consulted say they cannot accept coreference in examples like (9b), but I find a similar, if slight, effect when trying to replicate it in Dutch. So I will assume that the effect is real and in need of an explanation. Note that if the analysis in B14 is correct, and if the judgments hold up, subject-initial main clauses in Dutch must be IPs, as argued in Travis (1984) and Zwart (1993), not CPs, as often assumed.

B14 argues (pp. 372-373) that effects of coreference and obviation arise as the grammar keeps track of discourse referents during (left-to-right) processing. Condition C, on this view, essentially says that if you could have used a pronoun to refer to an active discourse referent, you cannot use an R-expression.⁶ An ‘active discourse referent’ is a discourse referent represented by a noun phrase in the sentence currently being processed. The set of active discourse referents (‘Set C’) is distinguished from the set of all referents in the current discourse (‘Set D’, also called ‘background discourse set’ below), and discourse referents may be moved from Set C to Set D during sentence processing.

Coreference, then, is not possible with an antecedent representing an active discourse referent, but is allowed with an antecedent representing a discourse referent from the background discourse Set D. The main contention of B14 is that discourse referents are moved into the background discourse Set D at the right edge of a phase.

The next section shows that there is no reason to believe that this crucial claim should be maintained.

2. PRONOUNS AND REPEATED NOUNS. Bolinger (1977) discusses many examples of minimal pairs where Condition C-effects can be evoked or avoided by subtle manipulation. Some examples are given in (10).⁷

- (10) a. i) *He_i flunked when John_i cheated
 ii) He_i usually flunks when John_i tries to cheat
- b. i) *He_i was just a little boy when I saw John_i
 ii) He_i was just a little boy when I first saw John_i
- c. i) *I bought him_i the house that John_i wanted
 ii) I bought him_i the house that John_i always wanted

⁶ B14, p. 372: “Principle C (Minimize Restrictors): A definite description of the form *the A* may not refer to a discourse referent in active set C if A could be dropped without affecting either (i) the denotation of the description or (ii) its various pragmatic effects.” See Levinson (2000:289) for an earlier, similar proposal.

⁷ All examples from Bolinger (1977), pp. 16-7, 17, 21, 22, 23, 23, 30, 36, 36, and 52, respectively. See also Lakoff (1976:282f).

- d. i) *He_i looks at the wall and John_i throws the ball at it
- ii) He_i looks at me and John_i goes out of his mind

- e. i) *Either he_i eats or John_i sleeps
- ii) Either he_i does what I say or John_i loses his job

- f. i) *He_i lost the money and John_i found it again
- ii) He_i lost the money and then John_i found it again

- g. i) *He_i is not to be believed when John_i tells a story
- ii) He_i is not to be believed when John_i tells a crazy story like that

- h. i) *He_i didn't mind, when I blamed John_i for it
- ii) He_i didn't seem to mind, when I blamed John_i for it

- i. i) *He_i's going to be flunked, if John_i cheats
- ii) He_i's going to get flunked, if John_i cheats

- j. i) *It surprises him_i that John_i is so well liked
- ii) It surprised him_i that John_i was so well liked

Bolinger's explanation for these judgments is partly in line with the analysis of B14, in the sense that (a) a pronoun is ordinarily preferred over an R-expression (Bolinger 1977:4), and (b) the variation has something to do with the need to keep track of discourse referents. But for Bolinger, the mechanism underlying noun phrase repetition is the need to reidentify the discourse referent, for example, by reintroducing the referent as a topic (Bolinger 1977:32). In many situations, repeating the noun phrase is unnecessary or 'unserviceable' (Bolinger 1977:5), but in other situations, the sentence may contain a 'distractor' (Bolinger 1977:3) increasing the need to be clear about the identity of a discourse referent. In those situations, using an R-expression instead of a pronoun is allowed, or even preferred.

I would like to point out that the improvement we see in the minimal pairs in (10a-j) has a similar quality to the improvement in the minimal pair in (9), which B14 ascribes

to a difference in phase structure. Speakers vary in how strongly the Condition C-effects are felt in these cases, and the crucial question now is whether judgments improve only where the presence of a phase edge sets the members of a minimal pair apart.

And, clearly, this is not the case. In (10a), for example, the sentence as a whole is an IP, not a phase, and so only precedence should be relevant (on B14's account). This predicts, correctly, that *John* and *he* cannot be coreferential in (10ai), but (10a_{ii}) has the same phase structure, and the observation that *John* and *he* can now be interpreted as coreferential is not predicted. (In Bolinger's analysis, the sentences differ in punctual vs. habitual aspect, and the connection between two punctual events is much tighter, making it unnecessary to reidentify the discourse referents in [10ai].) In (10b), the only difference between the two sentences is the introduction of *first* in (10b_{ii}), not affecting phase structure in any way. The sentences in (10c) differ only in the addition of the aspectual adverb *always* in (10c_{ii}), again without any consequences for phase organization. (10d-f) involve clausal coordination, where the (10d_{ii}), (10e_{ii}) and (10f_{ii}) are asymmetric in the sense of Kehler (2002), indicating a causal or a temporal sequence. Again, the sentences do not differ in phase structure, as the conjoined clauses are invariably IPs. Similarly, the pairs in (10g-j) differ too subtly to reduce the differences in coreference judgments to a difference in phase organization. As these examples suggest, the need to keep track of discourse referents sometimes indeed favors the use of an R-expression where a pronoun would be expected (lifting the Condition C-effect), but the idea that phases are relevant in this domain seems simply wrong.

In fact, it would seem that the difference between (9a) and (9b), where the CP phase did seem to be relevant, also lends itself to a Bolinger-type explanation. First of all, *he* in (9a) is a subject pronoun, which Bolinger (1977:32) argues is 'probably already topic', making it unnecessary to reidentify *Peter* as the topic. But in (9b), the same sentence is presented as being uttered by Mary, and during processing we have to keep track of who the speaker has in mind, as well as of who the speaker thinks Mary has in mind—enough reason to be allowed to reidentify the topic by repeating the R-expression. Conversely, (9a) can be shown to be felicitous (with coreference) in the right context:

- (11) [We spent all afternoon discussing draft picks, and noone generated more heated discussion than the shortstop from Kansas, Peter. But in the end we reached a consensus.] He_i has a lot of talent and Peter_i should go far. [But who needs another

shortstop?]

In (11), coreference of *he* and *Peter* seems more acceptable. Again, the improvement of (11) over (9a) cannot be accounted for by the phase-sensitive processing principle of B14, as (9a) and the relevant part of (11) are identical.

Likewise, if the processing principle that allows the Condition C-effect to be lifted is sensitive to phases, we predict that (6b)/(8a), showing the relevance of the vP phase, cannot be improved. But again, this seems too strong, given the possibility of coreference of *him* and *Ben* in (12).⁸

- (12) [Ben is such a private person that he won't let anyone in his office]
So it was quite a thrill to actually meet him_i in Ben_i's OFFICE.

Since *him* and *Ben* are contained within the same phase vP, *Ben* is processed before the discourse referent of *him* can be moved to the background discourse set D (on the analysis of B14), and precedence should rule out coreference as in (6b)/(8a).⁹

To summarize, subtle manipulation or proper contextualization of a sentence may lift certain Condition C-effects, explaining patterns that B14 argued show the relevance of phases in this domain, as well as many others discussed as early as Bolinger (1977) where phases can be shown to be utterly irrelevant.

3. PHASE-COMMAND VS. C-COMMAND. We mentioned earlier that the Condition C-effect in (6a) and (7) falls out from both the phase-command and the c-command analysis.

However, the phase-command analysis seems to fall short of a true explanation here

⁸ In the example, small capitals indicate relatively high pitch.

⁹ We may also call into question the conclusion of B14 that coreference in (8b) is allowed because the antecedent *him* and the dependent *Kissinger* are in separate phases, blocking phase command. This can be tested in any language in which the object moves out of the vP via A-movement (such as Dutch, Zwart 2011b:226 and Vanden Wyngaerd 1989); since the antecedent and the R-expression are no longer separated by a phase boundary, coreference should be blocked as in (6b)/(8a). But as (i) shows, sentences like (8b) have the same status in English and Dutch, in spite of the crucially different position of the object pronoun (the sentential negation marker *niet* is taken to signal the vP-boundary).

(i) ... dat ze hem_i niet [v_P op handen dragen] in Kissinger_i's geboortestreek
that they him nog on hands carry in Kissinger's region.of.birth
'... that they do not adore him in Kissinger's native region.'
(op handen dragen = adore)

as well. As it turns out, (7) is grammatical only under the marked intonation of (13b).¹⁰

- (13) a. *_[DP His_i mother] loves JOHN_i
b. _[DP His_i mother] LOVES John_i

On the analysis of B14, the referent of *his* is moved to the background discourse Set D at the point where left-to-right processing encounters the right edge of the DP-phase, and once the referent of *his* has been moved to Set D, *John* may refer to it. But (13) shows that *John* may refer to the referent of *his* only when *John* is itself deaccented, an observation that is unaccounted for in the system proposed in B14.

In the analysis of Bolinger (1977), *John* can be repeated if there is a need for reidentifying the topic. That is, the R-expression is used resumptively (cf. Bolinger 1977:3), and this resumptive use is arguably incompatible with pitch accent, explaining the contrast between (13a) and (13b).

These observations suggest (once again) that examples like (7) are not relevant to the discussion of phase-command vs. c-command. With neutral intonation (cf. (13a)), *his* and *John* cannot be coreferential, a fact that is not predicted by either type of analysis. With the marked intonation of (13b), both the phase-command and the c-command analysis need to be supplemented by a theory like Bolinger's to explain the obligatory resumptive character of *John*.

4. RESILIENT CONDITION C-EFFECTS. In this section we show that certain Condition C-effects are robust, in the sense that no amount of manipulation of the context or discourse can lift the effect. But, importantly, these Condition C-effects can be explained away as side-effects of another dependency relation that is, crucially, sensitive to c-command.

Consider once again example (6a). Here, deaccenting *John* does not help to lift the Condition C-effect:

¹⁰ See Wasow (1972:52) on how native speakers' judgments of sentences like (7) may vary. In English, the nuclear pitch accent falls on the most deeply embedded complement, as in (13a), which is deaccented to yield the intonation of (13b). In *His mother loves John's friends*, the pitch accent falls on *friends* and *John* is automatically deaccented (but stress on *John* would once again incur a Condition C-effect).

(14) *He_i LOVES John_i

Partly, this may be due to the observation that the subject is a default topic, and hence its referent is not in need of reidentification, especially not in a construction as tight as (6a)/(14). But arguably, something else is going on here, since we know (from Evans 1980) that *he* and *John* can perfectly well be coreferential as long as no reflexivity is intended:

(15) [Obviously, if everybody here loves John, then surely it must also be true that]
{he_i/John_i} loves John_i

What (15) expresses is that *he/John* is a ‘John lover’, and what it cannot express is the reflexive reading, in which *he/John* is a self-lover.

If so, what (6a)/(14) shows is not a Condition C-effect, but the effect of a condition that says ‘use a reflexivizing device to express reflexivity.’ Where no reflexivity is intended, as in (15), the condition does not apply.

It would be a mistake to think that reflexive pronouns (anaphors) are the only reflexivizing device available for expressing reflexivity. We know (from Schladt 2000, among others) that languages differ widely in the way they express reflexivity. Sometimes the devices used are in direct violation of the binding theory of Chomsky (1981), as in the case of Frisian (Tiersma 1985) or Hmong (Mortensen 2004), where reflexivity is expressed by nonreflexive pronouns and R-expressions, respectively. Many languages express reflexivity through verbal morphology (cf. Baker 1996) or body part noun phrases (Schladt 2000), but other devices are also found, including clitics, secondary predicates, focus markers, adverbs, intensifiers, special auxiliaries, and locative PPs (Zwart 2006).

The binding theory of Chomsky (1981), and much work in its wake, including Reinhart and Reuland (1993) and B14, pursues a theory of reflexivity which is narrowly concerned with the distribution of noun phrase types. Consequently, this work is not in a position to generalize over the range of devices used across languages to express reflexivity. A more encompassing theory would ask, not what the distribution of reflexives, pronouns, and R-expressions is, but what devices a language may use to express reflexivity, and what the nature of the dependency relation underlying reflexivity

is.

For the discussion at hand, the question would be whether that dependency relation underlying reflexivity is to be defined in terms of phase-command or c-command. I submit that the one generalization that potentially ties the various reflexivization strategies together is that reflexive marking affects the sister of the antecedent, and can be spelled out on the terms of the antecedent's sister in various language-specific ways. While the system of B14 is able to capture this generalization (as the antecedent is not contained within a phase that excludes the antecedent's sister), this cannot be taken to support the phase-command analysis, as the phase-command analysis simply reduces to the c-command analysis for this domain of phenomena. Put differently, where reflexivity is concerned, the phase-command analysis has nothing to add to existing analyses.¹¹

5. THE ARGUMENT FROM CONCEPTUAL NECESSITY. This final section argues that c-command relations are conceptually necessary as soon as a structure-building operation like Merge is assumed, whereas phase-command relations crucially rely on the theoretically more questionable concept of a phase. Dependency relations defined in terms of c-command, then, are arguably rooted in more central theoretical concepts than dependency relations defined in terms of phase-command.

Epstein (1999) showed that c-command (1) reduces to the structure-building operation Merge of Chomsky (1995), in the sense that at the point in the derivation where α and its sister γ (dominating δ) merge, α c-commands γ and all its terms. Zwart (2004, 2005) proposed that merge is actually asymmetric, such that α is merged *to* γ , yielding an ordered pair $\langle \alpha, \gamma \rangle$, which is spelled out as the string $\alpha\gamma$, reducing precedence to merge (see also Fortuny 2008, Zwart 2011a, and in fact B14:384). As Merge is a necessary component of syntax, c-command and precedence are arguably conceptual

¹¹ Another robust Condition C-effect can be observed in examples like (ia).

- (i) a. John_i said {he_i/*John_i} was such an idiot.
- b. John_i said: “{I_i am/*John_i is} such an idiot.”
- c. John_i felt bad. {He_i/*John_i} was such an idiot. [represented thought]

But here, too, principles independent from Condition C seem at work. Languages have special rules for Speech Act Participant reference, such as reference to the ego, which in English requires the use of a first or third person pronoun, but not an R-expression (ib,c)(see Bolinger 1977:37, Tancredi 1997). It is not immediately clear that (ia) must be aligned with other Condition C-effects and not with (ib,c). If with (ib,c), another sizeable subset of Condition C-effects falls outside the scope of B14's analysis.

necessities in a structural analysis of any linear string.

The conceptual necessity of phases is much less clear. Many have argued that in order to achieve a maximally simple derivation *D* of any linear string, we must allow *D* to involve subderivations, which Chomsky (2001) calls phases. But subderivations can be organized in many different ways (Uriagereka 1999, Zwart 2009, De Vries 2012), and it is not a priori clear that a division in syntactic categories, as in (3), is necessary.¹²

An alternative to phases, argued in Zwart (2009), is readily available, since (as is universally agreed) any element α merged in the context of derivation *D*₁ may be the output of a separate (prior) derivation *D*₂; if so, every derivation is potentially layered, i.e. a network of subderivations. Derivation layering is inevitable if we want all types of structured entities (words, compounds, items resulting from incorporation, idioms and other ‘constructions’ [in the sense of Construction Grammar], phrases, clauses) to be derived by a single structure-building device (like Merge). At the same time, it is clear that the elements merged in *D*₁ (such as the morphemes of a complex word, put together in a subderivation) cannot be individually merged again in the course of *D*₂.

Locality, then, is a direct result of derivation layering if we assume a principle like (16), a generalization of the lexical integrity hypothesis of Lapointe (1981:230).

(16) GENERALIZED INTEGRITY

Given two derivations *D*₁ and *D*₂, such that α is the output of *D*₂ and α is merged in *D*₁, no part of α may be merged in *D*₁ independently from α .

To show the effects of (16) would take us too far afield here, but a moment’s reflection will learn that it severely restricts the scope of movement (internal Merge), and as such covers much the same ground as do phases. But phases lack the virtual conceptual necessity of derivation layers, and the definition of phases in (3), in terms of particular syntactic categories, has never been fundamentally argued.

Given the unclear theoretical status of phases, the sweeping scope of B14’s phase-command relation is surprising. One might even consider that B14, more than any other work in the current literature, presents a compelling argument in support of the postulate “phase”. But the argument is only compelling to the extent that its empirical

¹² See Epstein et al. (2014) for a critical discussion of the considerations leading Chomsky (2001) to propose the phase concept.

basis is solid.

As I have tried to argue here, the empirical basis of the analysis in B14 and its proposed phase-command relation is undermined by a misunderstanding of the nature of Condition C-effects. To the extent that discourse considerations are relevant, Condition C-effects are not conditioned by phase structure, and the more resilient Condition C-effects turn out to be side effects of language particular requirements on the expression of reflexivity, a form of dependency best described in terms of c-command, i.e. a structural asymmetry created by Merge.

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