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Edges and linearization: A reply*

TUE TRINH

This is my reply to the commentaries on Trinh (2009). I thank the commentators – Enoch Aboh, Josef Bayer, Nigel Duffield, Roland Hinterhölzl, Anders Holmberg, Shinichiro Ishihara and Gereon Müller – for their helpful critiques, which point out several shortcomings of the target paper, opened up areas where new predictions can be made and raised questions to be investigated in future research. It is unfortunate that these critiques and this reply did not appear in the same volume. The first section of the reply will hence be a brief summary of my proposal. The theory will be presented in a slightly different way, more transparent than the original formulation but equivalent with it in content. It is my hope that the reformulation will address some of the questions raised in the commentaries. Other issues are discussed in the sections that follow.

1. Summary of the proposal

My starting point is the assumption that overt movement consists in forming a sequence of copies (α , β) and deleting the lower copy β (Chomsky 1995). I propose (1).

- (1) Condition on Copy Deletion (CCD)
 β can delete only if it ends an XP¹

* I thank Noam Chomsky, Norvin Richards, Shigeru Miyagawa and especially Danny Fox and David Pesetsky for the many hours of helpful and inspiring discussion.

¹ That is, the last morpheme of β must coincide with the last morpheme of an XP. Throughout this squib, I will use the variable ‘ α ’ and ‘ β ’ to denote the higher and the lower copy of a movement chain, respectively.

The CCD accounts for the fact that topicalizing V in an SVO language results in both copies of (V, V) being pronounced. Here is an example from Hebrew.

- (2) *liknot Dan kiva liknot et ha-sefer*
 buy.INF Dan hoped buy.INF ACC the-book

In addition to the CCD, I propose an Economy principle, which I will call Minimize Pronunciation.

- (3) Minimize Pronunciation (MP)
 Pronounce as little of β as possible

More precisely, MP compares convergent derivations and chooses the one which deletes more morphemes of β than any other. MP accounts for the fact that topicalizing V in an SOV language forces deletion of the lower copy of (V, V).² Here is an example from German.

- (4) *lesen werde ich das Buch lesen*
 read.INF will I the book read.INF

Finally, I propose a parameter, which I will call X-doubling.

- (5) X-Doubling
 β must delete unless it is headed by X

The variable X ranges over lexical categories (e.g. N, V, A). Languages are expected to differ in the values they assign to X. For example, if L assigns V to X, it will allow “V doubling”, i.e. non-deletion of the lower copy of V and VP chains. If L does not assign V to X, L will not have V doubling.³ The interaction of CCD, MP and X-Doubling gives rise to cross-linguistic correlations between basic word order, V topicalization and V doubling. For example, it is predicted that if a language is SVO, it can topicalize V only if both copies of the resultant chain are pronounced. In Trinh (2009), I argue that Dutch, German, Hebrew, Norwegian, Swedish and Vietnamese confirm what is predicted. To falsify the proposal, we have to find language which has V topicalization, is

² I assume that Chain Uniformity is not an axiom of UG (cf. Koopman 1984, Landau 2006 among others). Thus, \bar{A} -movement of V to [Spec,C], which I call “V topicalization” here, is in principle possible in every language.

³ Apparently, Hebrew assigns just V to X, so it allows V doubling but not N or A doubling. Vietnamese, on the other hand, assigns N and V to X, hence allows both N and V doubling (cf. Trinh 2009).

SVO and does not allow V doubling. To the best of my knowledge, such a language has not been attested.⁴

2. The X-doubling parameter

In this system, whether a language has V topicalization is to be derived from its setting of the X-doubling parameter and its underlying word order. For example, an SVO language which does not allow V doubling will not have V topicalization, because if it topicalizes V, the CCD will force both copies of (V, V) to be pronounced, contradicting the “no V doubling” setting of the language.⁵ In his commentary, Nigel Duffield questions this approach. He suggests that the presence/absence of V-topicalization in a language can be accounted for in a much simpler way, namely by postulating a “V topicalization parameter”: If a language L is [–V topicalization], it will not have V topicalization, and vice versa. In effect, Duffield suggests that the X-doubling parameter is just a round about way to stipulate whether a language has V topicalization or not.

The crucial difference between Duffield’s proposal and mine, of course, lies in where languages do and do not differ. I assume that \bar{A} -movement of V is in principle unproblematic, and languages vary with respect to how chains are pronounced. Duffield suggests that languages do not vary in their pronunciation of chains, but instead in whether \bar{A} -movement of V is possible. Duffield’s critique raises the important question of whether these two ways of looking at things are equivalent, and if not, what kind of evidence would argue in favor of one over the other. In the rest of this section, I will try to address these questions,

⁴ In fact, the proposal seems well supported by typological evidence. Thus, it has been observed for several SVO languages that \bar{A} fronting of the verb requires double pronunciation (cf. Aboh and Dyakonova 2009 for Gungbe, Cable 2004 for Yiddish, Cozier 2006 for Trinidad English, Kandybowicz 2008 for Nupe, Harbour 2008 for Haitian and Vicente 2007 for Spanish). Müller (2009) writes that “[w]hen one looks at West African languages exhibiting predicate fronting with copy spell-out, it seems that many of them are SVO languages. In line with this, for the Gur language Supyire, which is SOV, Carlson (1994, 474–475) explicitly remarks that unlike many of its neighbours, it does not have predicate cleft constructions with copy spell-out of V.” Also, it is noted in den Besten and Webelhuth (1987) that “[t]here is a sharp contrast between the Germanic SVO and SOV languages with respect to sentences where a nonfinite verb is topicalized together with (zero or) one of its objects, stranding (at least) one object.”

⁵ I argue in Trinh (2009) that Swedish and Norwegian are such languages.

arguing that the X-doubling parameter is to be preferred over the [$\pm V$ topicalization] parameter.⁶

I will start by discussing head-adjunction. Observationally, head-adjunction never results in double pronunciation: T to C movement in German behaves the same as T to C movement in English, even though T in German ends an XP while T in English does not.

- (6) a. *Sie lesen das Buch lesen*
 they read the book read
 b. *will John will read the book?*

I account for this fact by assuming that head-adjunction happens at PF and (hence) does not leave a copy (cf. Boeckx and Stjepanovic 2001, Chomsky 1995, Chomsky 2000, Freidin 1999, Lasnik 1999). In other words, the lower copy of head-to-head movement is never overt simply because it does not exist.⁷ Thus, the Hebrew sentence in (7a) has the derivation in (7b).

- (7) a. *liknot hi kanta et ha-sefer*
 buy.INF she buy.PAST ACC the-book
 b. (i) V moves to [Spec,C], creating the chain (V, V)
 V . . . T . . . [VP . . . V Object]
 ↑
 (ii) The lower copy of (V, V) adjoins to T at PF,
 leaving no copy behind
 V . . . V+T . . . [VP . . .] Object]
 ↑

In (7a), the fronted infinitive is doubled by a finite form inside the sentence. Given what was said, we can take this sentence to be a regular instance of V doubling, i.e. an instance of (V, V) being linearized at both the head and the

⁶ In his commentary, Shinichiro Ishihara proposes to replace the X-doubling parameter with a constraint, IDENTXP, which says that chains have to be uniform. Given that V topicalization results in non-uniform chains, this constraint amounts to the same as Duffield's [$\pm V$ topicalization] parameter. Thus, [$-V$ topicalization] languages would be those in which IDENTXP is ranked high and vice versa for [$+V$ topicalization] languages. My argument against [$\pm V$ topicalization] can therefore be taken as an argument against Ishihara's proposal.

⁷ See Trinh (2009) for additional arguments in favor of this assumption. For arguments that head-adjunction is syntactic, see Gergel (2005), Lechner (2005), Matushansky (2006), Vicente (2007).

foot position. In this case, the lower copy of (V, V) forms a proper part of a complex word, namely [V+T].⁸

Now observe the following contrast in German.

- (8) a. *lesen lese ich das Buch
 read.INF read.1SG I the book
 b. lesen werde ich das Buch
 read.INF will I the book

The derivation of (8a) is presumably identical to that of (7a), modulo the subsequent T to C movement. With X-doubling, it is straightforward to account for (8): we just have to say that German does not allow V doubling. With [\pm V topicalization], however, we face the problem of setting it in such a way that (8a) is ruled out but (8b) is allowed. It is not obvious to me how this problem can be solved.⁹ Thus, the X-doubling parameter seems able to capture distinctions which cannot be accounted for by [\pm V topicalization].

The X-doubling parameter predicts facts beyond (8). We expect, for instance, that there could also be a language Querman which is just like German except that it allows V doubling. Sentence (8a) would be good in Querman, since Querman can overtly realize the lower V copy when it has to. Furthermore, we predict (9a) to be good and (9b)–(9c) to be bad in Querman.

- (9) Judgments predicted for the hypothetical language Querman
- a. das Buch lesen lese ich
 the book read.INF read.1SG I
 b. *lesen werde ich das Buch lesen
 read.INF will I the book read.INF
 c. *das Buch lesen lese ich das Buch
 the book read.INF read.1SG I the book

Sentence (9a) would be derived as follows.

⁸ In their commentaries, Enoch Aboh and Gereon Müller present sentences such as (7a), where the topic infinitival VP is doubled by a single finite V inside the sentence, as problematic for my proposal. I hope to have shown with (7b) that they are not.

⁹ Note that we cannot rule out (8a) with Minimal Pronunciation (MP). This principle dictates maximal, but not total, deletion of the lower copy. In other words, if β must be overt in order for the derivation to converge, non-deletion of β will not violate MP. In (8a), the lower V copy has undergone head-adjunction to T. As T is affixal, this copy must be overt to save the sentence from violating the Stranded Affix Filter (Lasnik 1981), presumably an interface condition imposed by the phonology. Hence, it is not possible to rule out (8a) by invoking MP.

- (10) (i) VP topicalizes, creating the chain (VP, VP)
 [_{VP} Object V] . . . T . . . [_{VP} Object V]
 ↑—————|
- (ii) The head of the lower copy of (VP, VP) adjoins to T at PF, leaving
 no copy behind
 [_{VP} Object V] . . . V+T . . . [_{VP} Object]
 ↑—————|

T is affixal, so the head of the lower VP copy cannot be deleted. However, every other morpheme in that copy can be deleted, hence must be, by virtue of MP. The result is double pronunciation of (VP, VP) where only a proper part of the lower copy, namely its head, is overt. Since Querman allows morphemes of the lower copy of (VP, VP) to be overt, the sentence is predicted to be grammatical. The ungrammaticality of (9b) and (9c) follows from MP: both sentences violate this principle. In (9b), the lower copy of (V, V) is not deleted, even though it can be, since it ends an XP and no affix forces it to be overt. In (9c), all of the lower VP copy is overt, even though only its head needs to be.

An interesting research question is then whether Querman exists. Josef Bayer, in his commentary, indicates that Prussian Low German allows sentences such as (8b) and (9a) but disallows sentences such as (9b).¹⁰ If (9c) turns out to be ungrammatical in Prussian Low German, this language would be a candidate for Querman. It remains to be tested whether this is the case. In fact, a survey of German dialects will be highly instructive in this connection. I hope to carry out the work in the future.

3. Cantonese vs. Finnish

In his commentary, Anders Holmberg points out a very interesting difference between Cantonese and Finnish, which seems to pose a problem for my pro-

¹⁰ The Prussian Low German sentence mirroring (9a) which Bayer gives is the following.

- (i) *Schifke schnuwe schnöff* *hei nich man Brantwin supe söppt hei*
 tobacco snuff.INF snuff.3SG he not but brandy guzzle.INF guzzle.3SG he
ser
 very
 'He does not snuff tobacco but he guzzles brandy a lot'

positional, but which, as I hope to show, turns out to actually support it. Holmberg notes that in both languages, there is a class of affirmative answers to yes/no questions (which he calls “long answers”) that begin with a verb.

(11) Finnish

A: *Osaako Sara puhua ranskaa?*
 can.Q Sara speak French
 ‘Can Sarah speak French?’

B: *Osaako se*
 can she
 ‘Yes, she can’

(12) Cantonese

A: *Siuming sik msik gong faatman?*
 Siuming know not.know speak French
 ‘Does Siuming (know how to) speak French?’

B: *Sik, keoi sik*
 know he know
 ‘Yes, he does’

Holmberg argues that (11B) and (12B) have the same pragmatics, and assumes that in both cases, the verb which occupies the sentence-initial position has undergone \bar{A} -movement from inside TP to the C-domain. The question which he then raises is why there is V doubling in Cantonese but not in Finnish?

Here is how I would answer this question. First, note that both Cantonese and Finnish are SVO. This means that there is an immediate explanation for (12B) in my proposal. Specifically, I would say that the two instances of *sik* in (12B) are the two copies of the chain (*sik*, *sik*) created by \bar{A} -movement of *sik* to [Spec,C]. The lower copy is the head of a head-initial VP, so it cannot delete. As for Finnish, I would have to say that the sentence-initial verb is actually adjoined to C. In other words, (11B) is derived by V to T followed by T to C movement. By (my) assumption, these movements apply at PF and do not leave copies. The absence of V doubling in (11B) then follows.¹¹

¹¹ The fact that (11B) has the semantics that it has will have to be accounted for by assuming an abstract operator OP in the C-domain. OP is interpreted by the semantics, and triggers T to C movement in PF.

Is there evidence that (11B) involves head-adjunction while (12B) involves \bar{A} -movement? It seems that there is. Holmberg himself notes that no adverb can intervene between *osaa* and *se* in (11B). This resembles T to C movement in English.

- (13) a. **Osaa kai se*
 can probably she
 b. **Can probably she speak French?*

Furthermore, it is clear from his description that the initial verb has to be tensed, which means that it has to have moved from T. Thus, symptoms of head-to-head movement are observed. In Cantonese, on the other hand, adverbs can intervene between the sentence-initial verb and the subject (Paul Law, p.c.).

- (14) *Sik, dongyin keoi sik*
 know of.course he know

This is evidence that (12B) involves \bar{A} -movement of V to [Spec,C].

Holmberg's challenge suggests a research topic. The task will be to examine constructions in SVO languages where V is in the C-domain and to show that absence of V doubling correlates with properties of head-adjunction, while presence of V doubling correlates with properties of \bar{A} -movement. Again, I hope to carry out this work in the future.

4. V topicalization in German

In Trinh (2009), I argue that German has V topicalization. My motivation is to show that the CCD is correct, not the principle in (15).

- (15) Revised Condition on Copy Deletion (RCCD)
 Deletion of β requires uniformity of (α, β) .¹²

Given Bare Phrase Structure (Chomsky 1994), V topicalization never results in a uniform chain: the higher copy of (V, V) does not project, hence is an XP,

¹² The sense of "uniformity" here is that of Chomsky (1995: 253). Specifically, (α, β) is uniform iff α and β are both maximal projections (XPs), or both minimal projections (X^0 s).

while its lower copy does project and hence is not an XP.¹³ This means that the RCCD predicts (16).

(16) If L has V topicalization, it has V doubling

Note that for the RCCD, it is irrelevant whether L is SVO or SOV. It is therefore crucially different from the CCD, for which the SVO/SOV distinction is central. Thus, the CCD predicts (17), which is weaker than (16).

(17) If L has V topicalization and is SVO, it has V doubling

To argue for the CCD and against the RCCD, we need a language which falsifies (16) but does not falsify (17). In other words, we need a language which has V topicalization, is not SVO and has no V doubling. I argue that German is such a language. Starting from the fact that German has no V doubling and the standard assumption that it is SOV, my argument consists, then, in convincing the reader that German has V topicalization.

In their commentaries, Hinterhölzl, Müller and Truckenbrodt argue that German has no V topicalization. It should be clear at this point what their claim means in the context of this discussion: it means that German cannot be used to decide between the CCD and the RCCD. It does not mean that the CCD is false: (17) still holds if German turns out not to have V topicalization.

German, as a matter of empirical fact, has “bare predicate fronting”: it allows the Vorfeld to be occupied by a solitary (non-tensed) verb without any of its arguments (cf. (4)). Nevertheless, researchers have argued that German really has no V topicalization, i.e. that all cases of bare predicate fronting in German involves topicalization of a remnant VP (Thiersch 1985, den Besten and Webelhuth 1987, Müller 1998). Thus, to argue that German has V topicalization is to argue that some cases of bare predicate fronting in German do not involve remnant VP movement. In Trinh (2009), I basically reproduce the arguments made in Fanselow (2002) and Hinterhölzl (2002) that bare predicate fronting is possible in German even when there is evidence that no remnant VP has been created. As an example, consider the paradigm in (18), taken from Hinterhölzl (2002: 132).

(18) a. *??[dass Fritz Peter liebt] weiss ich nicht wer gesagt hat*
 that Fritz Peter loves know I not who said has
 ‘I don’t know who has said that Fritz loves Peter’

¹³ We will discuss intransitives below.

- b. **[dass Fritz t₁ liebt] weiss ich nicht wen₁ er gesagt hat*
 that Fritz loves know I not who he said has
 ‘I don’t know who he said that Fritz loves’
- c. *??geküsst weiss ich nicht wen sie hat*
 kissed know I not who she has
 ‘I don’t know whom she has kissed’

Hinterhölzl notes that (18a) shows “a mild, subjacency-like violation”, while (18b) is “ungrammatical”. He attributes this contrast to a ban on unbound wh-traces (Pesetsky 2000). In other words, the contrast exists because (18b) contains an unbound wh-trace, while (18a) does not. Significantly, Hinterhölzl notes that (18c) is just as good as (18a), even though the object of *geküsst* has undergone wh-movement. The relative acceptability of (18c) would follow immediately if we assume that the topic constituent in (18c) is a V and not a remnant VP, i.e. if we assume that German has V topicalization. Thus, I take (18) to be evidence (not proof) that German has V topicalization. The reader is invited to consult Fanselow (2002) and Hinterhölzl (2002) for several other facts supporting the same conclusion.

Even though Fanselow and Hinterhölzl present data which can be considered evidence that German has V topicalization, they do not question Chain Uniformity. Consequently, they proceed to develop accounts for their data which take the solitary verb in [Spec,C] to be a VP after all. Fanselow hypothesizes that a transitive verb can be a VP by itself: its object can merge in [Spec,Aux] and S-selectional features of V can be inherited by Aux via LF movement of V to Aux. Hinterhölzl motivates the existence of a novel kind of movement out of VP, “licensing movement”, which affects all constituents of VP except V. And Gereon Müller, in his commentary, suggests a way to deal with bare predicate fronting constructions in which the stranded object does not look like it can scramble or extrapose. Müller’s proposal, if I understood it correctly, involves making the assumption that certain instances of scrambling and extraposition are allowed only if they are phonologically inconsequential.¹⁴

It is not a trivial task to compare the competing proposals. The comparison will have to be carried out globally, taking into consideration the ability of each theory to capture cross-linguistic variation. This enterprise goes beyond the

¹⁴ Müller’s proposal is made in the context of a discussion of wh-indefinites. It is not clear how it would account for (18).

bounds of Trinh (2009) and certainly beyond the bounds of this reply. Thus, I will agree with Hinterhölzl and Müller that my argument for V topicalization in German is weakened by the existence of alternative accounts which hold that German does not allow V topicalization.

5. Fronting auxiliary verbs

Hubert Truckenbrodt also challenges the claim that V topicalization exists in German. Assuming all VPs to be head-final in German, he presents the paradigm in (19) and (20) to show that V can occupy [Spec,C] if and only if its argument can evacuate VP. Specifically, (19) is supposed to show that V cannot front if its complement cannot extrapose, and (20), that V can front if its complement can extrapose.

- (19) a. *Haben* cannot front
 **Haben dürfte er sie geküsst*
 have might he her kissed
- b. The complement of *haben* cannot extrapose
 **Er dürfte sie t_{VP} haben [VP . . . geküsst]*
 he might her have kissed
- (20) a. *Wollen* can front
 ??*Wollen hat er sie küssen*
 want has he her kiss
- b. The complement of *wollen* can extrapose
 ??*dass er sie t_{VP} hat [VP t_{VP} wollen] [VP . . . küssen]*
 that he her has want kiss

Truckenbrodt's observations are extremely interesting. However, I think there is another way to look at the facts. First, note that Truckenbrodt's analysis of (20b) implies that extraposition of VP as well as extraposition from an extraposed VP are both possible in German. This assumption is not uncontroversial. Second, it has been reported to me (Gisbert Fanselow p.c.) that the relative acceptability of (20a) is universal in German, while that of (20b) is dialectal. In other words, there are dialects of German which accept (20a) and do not accept (20b). This weakens Truckenbrodt's case, since his argument crucially appeals

to the correlation in acceptability between (20a) and (20b). Third, the possibility of getting the complement of V out of VP is not a sufficient condition for having V in [Spec,C], as (21) shows (Gisbert Fanselow p.c.).

- (21) a. The complement of *können* can scramble
dass [sie küssen]₁ keiner [VP t₁ können] muss
 that her kiss no.one can must
- b. *Können* cannot front
 **können muss sie küssen keiner*
 can must her kiss no.one

This shows that in principle, the perfect auxiliary *haben* may be prevented from topicalizing by some independent principle, just as the modal verb *können* is. Vietnamese strengthens this idea. In this language, VPs do not extrapose or scramble, and fronting verbs requires V doubling. Nonetheless, we see the exact same contrast between fronting the perfect auxiliary *da* and fronting the verb *muon* ‘want’.

- (22) a. **da thi John da hon Mary*
 PERF TOP John PERF kiss Mary
- b. ?*muon thi John muon hon Mary*
 want TOP John want kiss Mary

These facts suggest that the contrast – with respect to topicalization – between *haben* and *können*, on the one hand, and *wollen*, on the other, might be unrelated to extraposition/scrambling. The question, then, is what it is related to. Again, I think this is a fascinating topic for future research, and I am glad to have learned about it from reading Truckenbrodt’s critique.¹⁵

¹⁵ A speculative note: it seems that V can topicalize in German (and probably in other languages too) only if its subject has a theta-role assigned by it. Thus, *scheinen* is ambiguous between *seem* and *shine*. Only under the latter reading can this verb undergo topicalization. Also, *drohen* (*threaten*) is ambiguous between an agentive and a non-agentive reading in German. Nonetheless, fronting *drohen* forces the agentive reading. If this generalization is true, it would account for the ability of *wollen* to front, and the inability of *können* and *haben* to do the same, assuming that the latter two are raising verbs. I thank Gisbert Fanselow for the observations about *scheinen* and *drohen*.

6. The PCCD and the relevance of pronunciation

In Trinh (2009), I suggest a reformulation of the CCD in terms of prosodic categories. The CCD refers to edges of maximal projections, and this is reminiscent of Selkirk's (1986) rule for inserting phonological phrase boundaries (symbolized here by #) into the output of overt syntax.

(23) Selkirk's Rule

Insert # at the p edge of each XP

The rule in (23) is parameterized: the variable p ranges over {left, right} and languages differ as to which value p takes. I propose, then, to reduce the CCD to (24), which I call the Prosodic Condition on Copy Deletion (PCCD).

(24) Prosodic Condition on Copy Deletion (PCCD)

Deletion of β requires # at its p edge

For the languages considered in Trinh (2009) – Dutch, German, Hebrew, Norwegian, Swedish and Vietnamese – the value of p is presumably 'right'. For these languages, the CCD and the PCCD turn out to be equivalent: β has # at its p edge iff it ends an XP. For a language like Japanese, however, we would expect a difference. Japanese is SOV and aligns left edges of XPs and phonological phrases (Selkirk and Tateishi 1998). Thus, V ends up not having # at its right edge.

(25) # Object V

As it turns out, Japanese does not have V topicalization (Shigeru Miyagawa, Yasutada Sudo p.c.). If we assume the PCCD, this fact can be captured by setting the X-doubling parameter to "no V doubling" for Japanese. If we assume the CCD, we have to find some other way to account for the lack of V topicalization in Japanese.¹⁶

In their commentaries, Bayer, Hinterhölzl and Truckenbrodt point out a problem with the PCCD: it does not square with facts about pronunciation. For example, Bayer notes that there is no detectable phonological phrase boundary between V and a right peripheral auxiliary: (26a) is a possible parse but not (26b).

¹⁶ Japanese will be an argument for the PCCD and against the CCD if we can establish that V topicalization is not ruled out in Japanese by some other independent principle. I hope to pursue the question in future research.

- (26) a. (*das Buch*) (*verschenkt hat*)
 the book given has
 b. *(*das Buch*) (*verschenkt*) (*hat*)

However, the lower copy of (V, V) is deleted when V is topicalized, as seen in (27).¹⁷

- (27) *verschenkt hat er das Buch verschenkt*
 given has he the book

Bayer concludes that the PCCD does not hold, since β deletes even though nothing in the actual pronunciation indicates that # is at its p edge. Hinterhölzl and Truckenbrodt give similar arguments.

This is a valid criticism: the lack of a perceived prosodic boundary between V and Aux in (26) is a real challenge for the PCCD. My assumption is that Selkirk's Rule is sensitive only to the XP/non-XP distinction, and that its output is related to actual pronunciation by other rules of phonology and phonetic implementation. Thus, I would have to say that the # between V and Aux, generated by Selkirk's Rule, is eventually not interpreted by the phonetics.¹⁸ I am aware that my assumption, at this point, is motivated solely by the desire to keep the PCCD. My hope for the future is to find empirical arguments for it from other corners of grammar. Of course, as long as this remains a hope, the challenge posed by Bayer, Hinterhölzl and Truckenbrodt remains.

Note, nevertheless, that saying # may have no phonetic effect does not mean saying pronunciation is irrelevant. Facts about actual pronunciation can pro-

¹⁷ Note that the auxiliary verb *hat* in (27) is not right peripheral: it has undergone head-to-head movement to C. However, this does not undermine Bayer's critique, since I assume that head-to-head movement is post-syntactic, which means that at the point where the main verb *verschenkt* undergoes topicalization, *hat* is in situ.

¹⁸ In other words, I adhere to the view that syntactic derivation is constrained by some but not all aspects of prosody. Specifically, copy deletion is sensitive to the presence of prosodic boundaries, not to their final phonetic interpretation. I believe that a similar view of syntax underlies Richards' (2010) proposal, which seeks to derive the presence/absence of overt wh-movement in a language from properties of its prosody. Richards postulates a universal condition which requires that there be no phonological phrase boundary between wh and C. The reader is invited to consult Richards (2010) for more details. Relevant to our discussion here is the premise of Richards' argument: prosodic boundaries are associated with every XP in the relevant phrase marker, regardless of how XP will eventually be pronounced. In other words, Richards assumes that Selkirk's Rule applies "blindly", and that the relation between its output and actual pronunciation is indirect, mediated by rules of phonology and phonetics, among others. I thank Norvin Richards for the discussion of Richards (2010).

vide evidence as to how Selkirk's Rule is implemented in the language, and this can bear on the truth of the theory. For example, suppose we encounter an SOV language which has V topicalization and does not allow V doubling. The PCCD predicts that XPs and phonological phrases are right aligned. If there happens to be overwhelming evidence from pronunciation that XPs and phonological phrases are actually left aligned, we will have to modify or abandon our analysis.

7. Intransitives

Finally, I turn to the discussion of intransitive verbs. In his commentary, Roland Hinterhölzl points out that my account “predicts that preposing of intransitive verbs should allow for the deletion of the lower copy in VO languages like Hebrew and Vietnamese [. . .]”. Hinterhölzl is correct, and what he predicts is indeed consistent with the facts: topicalizing intransitives in Vietnamese and Hebrew does allow for the deletion of the lower V copy.¹⁹

(28) Vietnamese

ngu thi no nen (ngu)
sleep TOP he should sleep

(29) Hebrew

lalexet Dan kiva (lalexet)
walk.INF Dan hoped walk.INF

To account for this fact, I appealed to the view that intransitives are really hidden transitives with silent internal arguments (Hale and Keyser 1993). This view allows us to say that bare predicate fronting in case of intransitives is structurally ambiguous: the topic is either a V or a VP. Since Vietnamese and Hebrew are SVO, double pronunciation will result if V is the topic, and deletion will result when VP is the topic. Hence the optionality in (28) and (29).

Josef Bayer and Gereon Müller question the crucial assumption of this account. They ask how a silent XP can disrupt the adjacency of a phonologically overt constituent and a phonological phrase boundary. But note that *wanna*-contraction is blocked by a silent XP. In fact, *wanna*-contraction is taken to be

¹⁹ I thank Omer Preminger for his Hebrew judgments.

evidence that a silent XP is there. Thus, my hope for future research is to show that the difference between transitives and intransitives with respect to V topicalization, which is otherwise quite puzzling, will turn out to be supporting evidence for Hale and Keyser's theory, which has been more or less conceptually motivated.

The discussion of intransitives brings me to Shinichiro Ishihara's commentary. If I understand him correctly, Ishihara proposes two constraints, ALXP and MAX, to account for the fact that V topicalization forces doubling in SVO but deletion in SOV languages. Basically, ALXP requires the main stress of VP to be VP-final, and MAX requires all copies to be pronounced. Crucially, ALXP is ranked above MAX.²⁰ Now assuming that the main stress of VP always falls on the object, V topicalization in an SOV language forces the lower V to delete because if it does not delete, the main stress of VP would not be VP-final and ALXP would be violated. V topicalization in an SVO language, on the other hand, does not force the lower V to delete, because the object is VP-final in this case. Given MAX, V must be overt. Hence the difference between German and Hebrew, for example.

Ishihara's proposal is very elegant, but appears to fail when intransitives are taken into consideration. Specifically, Ishihara seems to predict that topicalizing an intransitive verb always shows V doubling: there is no object which can bear phrasal stress, so ALXP cannot be violated, hence MAX will always force double pronunciation. This is not borne out by facts: fronting intransitives in Vietnamese and Hebrew does not require doubling, and fronting intransitives in German requires deletion.

8. Conclusion

In Trinh (2009), I set out to derive some patterns of pronunciation and interpretation from a principle of chain linearization. The proposal is admittedly speculative. The architecture of grammar it assumes awaits extensive elaboration, and large numbers of languages have yet to be examined carefully. Hence, I am very grateful for the critical input that I have received from my commentators. This reply is written in the hope of convincing the readers that the project does

²⁰ For the sake of clear presentation and the lack of space, I simplify what Ishihara said. Needless to say, I take full responsibility for any misrepresentation of his ideas.

have some chance of being non-futile. Whether I am correct in my assessment, only future research will tell.

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