V(P) -Topicalization and the Role of Traces

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I. INTRODUCTION

In this paper, I want to address the question of topicalization in German and the problem that is set up in this language by the fact that intermediate X-bar categories and even X-zero categories seem to be able to undergo topicalization. In the context of the more recent GB-framework (cf. Chomsky, 1986a), X'- or X^0- movement to SpecCP is disfavored, because under a restrictive theory of structure preservation it is generally accepted that only XPs can move to SpecCP and heads can only move to head positions. Intermediate categories have no status as constituents, and should not move at all.[1] The problem is exemplified by the following grammatical sentences from German:

(1)   a.   Den Kindern zeigen wollte   der Hans diese Bücher nicht
                 the kids   show wanted the Hans these books   not
        b.   Zeigen wollte der Hans den Kindern diese Bücher nicht
             show   wanted the Hans the kids   these books not

This problem has been met by different theoretical accounts of which I want to compare here two:

(A) Following Thiersch (1985), den Besten and Webelhuth (1987) suggest that even in (1a,b) it is the whole VP that moves to SpecCP. Since German allows for scrambling, it is possible that the VP is first fully or partially emptied and then undergoes movement. At S-structure, then, there are traces in VP which are not bound according to standard assumptions.

(B) Fanselow (1993), Frey and Tappe (1991) and Haider (1990 and subsequent work), on the other hand, suggest that the grammar should never allow for unbound traces, and that the phenomenon in question should receive a different analysis. They propose a V-projection according to which the transitive verb by itself may count as a maximal projection of the verb, and that its arguments may adjoin to this V^{max}. Once the inner shell of this VP is preposed, it will, of course, not contain a trace of the argument, because the argument is generated in a higher VP-shell.
into an NP by attaching an indefinite article.

Example (1b) thus receives a quite different analyses under these two approaches:

(2) Thiersch (1985) ; den Besten and Webelhuth (1987)
     [$_{VP}$ e_2 e_1 zeigen] wollte der Hans [den Kindern]$_2$ [diese Bücher]$_1$ e_{VP} nicht

(3) Fanselow (1993); Frey and Tappe (1991); Haider (1990)
     [$_{VP}$ zeigen] wollte der Hans [$_{VP}$ den Kindern [$_{VP}$ diese Bücher [$_{VP}$ e_{VP}]]] nicht

II. PROBLEMS

W.r.t. the scrambling analysis in (2) a number of problems have been pointed out in the literature. Den Besten and Webelhuth (1990) observe that there are cases of scrambling which leave behind constituents that nevertheless cannot undergo topicalization. Consider the data in (4) and (5):

(4)   a.   weil der Hans nichts [$_{PP}$ da+von] hält
                because Hans nothing there+of   holds
                "because Hans does not like this"
       b.   Davon$_2$ hält der Hans nichts e_2 (TOPICALIZATION)

(5)   a.   weil der Hans da$_1$ nichts [$_{PP}$ e_1 von] hält   (SCRAMBLING)
       b.   *[$_{PP}$ e_1 von]$_2$ hält der Hans da$_1$ nichts e_2 (SCRAMBLING + TOPICALIZATION)

Den Besten and Webelhuth (1990) try to repair problems of this kind with special assumption that we will not be concerned with in this paper. Another problem was noticed by Fanselow (1993). Constituents which undoubtedly contain traces in German, namely those from which a wh-phrase has been extracted, cannot be topicalized:[2]

(6)   a.   Ich wüßte nicht [wen$_1$ er gesagt hat [e_1 daß Anette e_1 liebt]]
                "I don't know who he said that Anette loves"
       b.   *[$_{VP}$ Gesagt [e_1 daß Anette e_1 liebt]]$_2$ wüßte ich nicht [wen$_1$ er e_2 hat]

Fanselow concludes that topicalized constituents must never contain traces, and that, as a consequence, an approach like in (3) must be on the right track. Fanselow goes even further, and argues that since there cannot be any traces in topicalized constituents, the different orders of arguments that appear in the examples in (7), must be base generated:[2]

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[2] Let us assume that in (6a) the complement CP is base generated to the left of the matrix verb.

(7)   a.   Solche Bücher zeigen würde ich meinen Kindern nie

                such books show would I   my   children never

        b.   Meinen Kindern zeigen würde ich solche Bücher nie

                my   children show would I   such   books   never

(7b) is a more marked albeit fully grammatical option. According to widespread consent among syntacticians, a di-transitive verb like *zeigen* has the base serialization <u>dative < accusative</u>, in which the indirect argument is +human and the direct one is –human, and would thus derive from a marked order of arguments as in (8):

(8)   weil ich [solche Bücher]$_{acc}$ [meinen Kindern]$_{dat}$ nie zeigen würde

where the acc-DP may have been scrambled to the left.[3] A rather puzzling fact is that topicalizations of this sort can also appear with a pronoun that is coreferent with the topicalized material. For most speakers, the following variant of (7a) is also grammatical:

(9)   [Solche Bücher zeigen] <u>das</u> würde ich meinen Kindern nie

In this case it is not quite plausible that there should be a trace involved, because what has actually been moved to SpecCP is the pronoun <u>das</u>. The remnant VP in left-dislocation position must somehow have been base generated. A trace in this constituent cannot easily be argued to be licensed by reconstruction.[4] Judgements begin to diverge with examples like (10), which is a variant of (7b):

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     [3]Haider (1990) suggests that such verbs allow for two base orders; thus, there would not be a trace in (7b). For him, certain other verbs, however, do invoke a scrambling trace. In these cases VP-topicalization should not be able to carry a scrambling trace along; *unterziehen,* for example, triggers <u>acc < dat</u> order. (i) must then contain a trace:

(i)   weil   der Arzt [seinem abscheulichen Test]$_{dat}$ [diesen Patienten]$_{acc}$ e$_{dat}$ erst einmal
        because the doctor (to) his gruesome   test   this patient   only once
        unterzogen hat
        subjected   has
        "because the doctor has subjected this patient to his gruesome test only once"

For me the loss of grammaticality in (ii) is not quite as strong as Haider's prediction would suggest:

(ii) ? [Seinem abscheulichen Test unterzogen) hat der Arzt diesen Patienten erst einmal

But there is certainly a difference between these cases and the di-transitive ones mentioned above which should ultimately be explained.

     [4]About reconstruction we will talk in later sections in more detail, as well as in the appendix.

(10)   [Meinen Kindern zeigen] <u>das</u> würde ich solche Bücher nie

For Fanselow and his informants, sentences like (10) seem to be acceptable. If this is the case, (10) would corroborate his base generation theory. I myself find (10) plainly ungrammatical, and so did most of the speakers I asked for judgements. For the argumentation below I will rely on my own judgement of this case.

The problems for the alternative theory which analyzes VP-topicalizations without traces seem to be less severe. The problems seem to be more of a theory-internal nature. One could, of course, argue that a strict application of the X'-schema has been given up for the description of the German V-projection. Frey and Tappe (1991) comment on this on this point as follows:

Wir weisen darauf hin, daß die vorgeschlagene Änderung in Konzeptionen wie der von <u>BARRIERS</u> keine problematischen Konsequenzen hat: zwar kann die Definition von <u>government</u> nicht so interpretiert werden, daß alle Schwestern von X^{max} vom lexikalischen Kopf der Projektion regiert werden können, weil es weiterhin wünschenswert ist, daß Adjunkte unregiert bleiben. Da aber für Zwecke des <u>ECP</u> und des <u>L-marking</u> nicht <u>government</u>, sondern <u>theta-government</u> relevant ist, bleiben alle unter den Bedingungen des Englischen erfassten Sachverhalte auch unter denen des Deutschen erfassbar. (p.5)

Be this as it may, a consequence of their theory is that German must differ quite substantially from English: English is implicitly assumed to follow X' -syntax in its expansion of the verbal projection, while German permits the single transitive verb to fulfill the role of a VP and the arguments to attach in the sense of left adjunction to VP. In my view, this is a stipulation similar to the one that divides languages into scrambling and non-scrambling languages, useful at first sight, but ultimately too crude. In Fanselow's base generation account, there is only one such stipulation, namely that the German V-projection is different from the one in English. As such, it will allow for the base generation of different constituents in the sense of scrambling. In Frey and Tappe (1991), on the other hand, it is in addition assumed that there is scrambling in the sense of move-α. Assuming that a special verbal projection system is intrinsically linked to the scrambling phenomenon, it would seem to me more desirable to derive the scrambling phenomenon from the projection mechanism.

In the rest of this paper, I will try to show that the assumption of a special V-projection system may be unnecessary or even undesirable, and that the differences between English and German syntax are less prominent than suggested by the adoption of such a mechanism for German. I will in particular discuss some novel facts about VP-topica1ization that were brought up in Huang (1993), and which corroborate theory (A)[5.] In the following, I will also address the longstanding problems w.r.t. V-, V'-, VP-topicalization in German exemplified in (5), (6), (9) and (10)

III. HUANG (1993)

Assume that theory (A) is not misguided. The important question then is: Can the scrambled material bind the traces in the remnant VP when this presupposes reconstruction? Huang (1993) shows that this may indeed be true. His main concern is the status of the subject, and in particular its syntactic role in the so-called Internal-Subject-Hypothesis (ISH). The languages that are mainly discussed in this article are English and Chinese, but there is also a section on Dutch and German. Huang argues that whenever VP-topicalization is possible it will (universally) carry a long the trace of the VP-internal subject, and that this trace in order to get bound - forces the VP to reconstruct to the place at which it is the subject in SpecIP can A-bind it.[6]

It is a well-known fact that in English binding principle A can be satisfied in each cycle of a derivation in which an appropriate antecedent of an anaphor or a reciprocal can be accessed.[7] In the following example of DP-topicalization from Huang (1993: 108), there are two options of binding the reflexive pronoun:

(11)   Those pictures of himself$_{1/2}$, John$_1$ thinks Bill$_2$ will buy

Notice that while there is a trace of those pictures of himself after buy, it is obviously the case that in reconstructing to this trace position the wh-phrase can "stop halfway" and select the matrix subject John as an antecedent of himself. One can see this clearly in those cases where the low reconstruction possibility would lead to morphological ill-formedness, but which are nevertheless grammatical:

(12)   Those pictures of herself$_{1/*2}$, Mary$_1$ thinks Bill$_2$ will buy

Central to Huang's argumentation is the fact that such reconstruction ambiguities are absent in VP-topicalizations:

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[5]Huang presented this work at NELS Montréal, November 1990; since his contribution did not appear in the proceedings of this conference, his analysis was not accessible to most of the linguists working on German syntax until recently.

[6]In the appendix, I will show that Huang 's notion of reconstruction can be translated into the framework of Chomsky (1993), where reconstruction in the literal sense of downwards movement has been dispensed with in favor of a copy-and-deletion mechanism. For Huang's central point, it is not essential which particular theory of reconstruction is chosen (see his footnote 2, p. 104).

[7]Cf. Barss (1986).

(13) a. [$_{VP}$ Criticize himself$_{*1/2}$] John$_1$ thinks that Bill$_2$ will not e$_{VP}$

      b. *[Criticize herself$_1$] Mary$_1$ thinks that Bill will not e$_{VP}$

The same is true for AP-topicalization:

(14) a. [How proud of himself$_{*1/2}$] does John$_1$ think Bill$_2$ will be?
      b. *[How proud of yourself$_1$] do you$_1$ think Bill will be?

Huang explains the difference between DP-topica1ization and VP/AP-topicalization with the ISH: In each predicate there is a subject position, namely the specifier (SpecVP/SpecAP). The subject has been shifted by NP-movement to the specifier of a functional category.[8] VP-topica1ization then involves the trace of the subject. If there is only reconstruction to an intermediate position as is necessary in (13b) for <u>herself</u> to get bound by <u>Mary</u>, this subject trace remains unbound and is thus in conflict with the ECP.[9] According to Huang's explanation, the representation of (13a) is the one in (15):

(15) [$_{VP}$ e$_2$ criticize himself$_{*1/2}$] John$_1$ thinks that Bill$_2$ will not e$_{VP}$

In section 5.3 of his article, Huang presents data from Dutch and German which indicate that the reconstruction effects are reproduced in these languages.[10]

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[8]I will henceforth speak about VP-topicaization only (and assume that the situation in AP—topica1ization is accordingly).

[9]Here the ECP is fulfilled when a trace is properly antecedent governed. It is immaterial to the present discussion whether a different version of the ECP should be chosen.

[10]One caveat is necessary, however, namely that contrary to the situation in English the facts are only clear w.r.t. reciprocals, but not reflexives, as Werner Frey has pointed out to me. Here I will have to ignore this difference. The following examples with reciprocals behave like in English:

(i)   Bilder von einander$_{1/2}$ dachten die Maler$_1$ würden wir$_2$ mit   Freude kaufen
       pictures of   each other thought the painters would we with joy   buy
(ii)   Bilder   von einander$_{1/*2}$ dachten die Maler$_1$ würde ich$_2$ mit Freude kaufen
       pictures of each other thought the painters would I   with joy   buy
(iii) Bilder von einander$_{*1/2}$ kaufen dachten die Maler$_1$ würden wir$_2$ mit Freude
       pictures of each other buy   thought the painters would we with joy
(iv)   Bilder   von einander$_{*1/2}$ kaufen dachten die Maler$_1$ würde ich$_2$ mit Freude
       pictures of   each other buy   thought the painters would I   with joy

IV. VARIABLE TRACES - NP-TRACES

There is one important obstacle to this approach that has been recognized by Huang and Fanselow:[11] Wh-traces in topicalized phrases cannot be reconstructed. This problem has already been mentioned above w.r.t. example (6b).

This effect can also be observed in English as shown by (16a), which is from Huang (1993), and (16b):

(16) a. *[which pictures of e_1]$_2$ do you wonder who$_1$ are on the table e_2
      b. *[e_3 talk about e_1]$_2$ the professor wonder what$_1$ he$_3$ should e_2

Huang puts this aside as a separate problem, while Fanslow takes it as evidence that topicalized phrases should not contain traces at all. While we will have to leave the derivation of this effect for future research, it is quite interesting to observe that it is contingent upon the non-availability of an NP-movement type or scrambling operation that precedes Wh-movement. Once there is the possibility of first moving the Wh-phrase to an A-position like in SpecVP to SpecIP, the result is by and large grammatical.

(17) ?[$_{VP}$ Talk to Mary] I wonder who would e_{VP}

Given that variables cannot reconstruct, the proper analysis of (17) must be as in (18), where the trace in VP is not a variable, but the NP-trace bound by e_1':

(18) ?[$_{VP}$ e_1 talk to Mary] I wonder [$_{CP}$ who$_1$ [$_{IP}$ e_1' would e_{VP}]]

Thus, it is not the mere physical intervention of the wh-operator between the topicalized VP and its trace, but rather the status of the trace within the topicalized VP. Once this trace can be shown to have A-status, the result will be grammatical.[12]

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[11]See especially footnote 3 in Huang (1993:105f)

[12]This makes a negative prediction for AGRo in English. Assume that objects have to be externalized in English for reasons of object agreement as suggested by Chomsky (1993) and Chomsky and Lasnik (1991). SpecAGRo would certainly be an A-position. Thus a topicalized VP would not contain a variable, but rather an A-trace, and the result should be grammatical. This prediction is not borne out:

(i) *Seduce with her dance everybody wondered who(m) Mata Hari would next

This makes a clear prediction for German, which is allowed to scramble objects. In German one can argue that the object-DP first moves to an (L-related) A-position, and from there to SpecCP. In this case there should be no ban on reconstruction, as in the (slightly marginal) English example (17). The expectation is indeed fulfilled as shown by Fanselow's example in (19a), which in the present account receives the analysis in (19b):

(19)　a.　　　Geküßt wüßte ich gerne wen　　sie hat
　　　　　　　 kissed knew I　really who(m) she has
　　　　　　　 "I'd really like to know who she has kissed"

　　　b.　　　$[e_1 \ e_2 \ gek\ddot{u}\beta t]_3$ wüßte ich gerne $[_{CP}$ wen$_2$ $[_{IP}$ sie$_1$ e_2' e_3 hat$]]$

 The important piece in (19b) is the scrambling trace e_2' which like e_1' in (18) - guarantees that e_2 – or e_1 in (18) – in the topicalized VP is not a variable.

　　　If we would reject the option of traces, we would not only have to argue against remnant VP-topicalization in German, but also against the ISH in English; it would be impossible to maintain the analysis of (17) given in (18).

　　　Yet another piece of evidence in favor of Huang's analysis of VP-topicalization is that in English it is possible to topicalize passive VPs:

(20)　　[Kissed by Mary] John already has been twice

If we want to maintain the standard analysis according to which there is NP-movement in the English passive, it is quite unavoidable to conclude that the fronted VP in (20) contains the trace of the thematic object John:

(21)　　$[e_1$ kissed by Mary$]_2$ John$_1$ already has been e_2 twice

These considerations show that VP-topicalization with stranded VP-related material is not really special in German. One can rather easily see that the phenomenon exists in English as well, and that as a consequence any theory which rejects traces that are unbound at S-structure would have to reject the standard analysis of English NP-movement. The difference between German and English seems to boil down to a difference that is independently attested, namely that objects have more freedom to scramble in German.

Below I want to point to yet another difference that has some importance, but before I do that let me make some further remarks about the interaction of scrambling and wh-movement .

V. WEAK CROSSOVER

In conjunction with the generalization that variables cannot be reconstructed, the VP-topicalization theory requires that certain cases of wh-movement are preceded by scrambling. This has been shown in (19), which is repeated here for convenience:

(19)   a.   Geküßt wüßte ich gerne wen   sie hat
                      kissed knew I   really who(m) she has
                      "I'd really like to know who she has kissed"

        b. $[e_1 \ e_2 \ \text{geküßt}]_3$ wüßte ich gerne $[_{CP} \ \text{wen}_2 \ [_{IP} \ \text{sie}_1 \ e_2' \ e_3 \ \text{hat}]]$

This analysis is incompatible with theories of scrambling as A'-movement in which it is sometimes claimed that a scrambling position is immune to wh-movement (cf. Müller and Sternefeld, 1991). There is evidence, however, that precisely such a combination of scrambling and operator-chains is independently motivated. The evidence comes from cases in which a loss of grammaticality due to <u>Weak Crossover</u> (WCO) would be expected, but does not show up. Consider the following English/German contrasts:

(22)   a. $*[\text{Which of you}]_1$ has his_1 mother scolded e_1 most?
        b. $*[\text{Which secretary}]_1$ have you not yet shown her_1 boss e_1 ?

(23)   a.   Welchen   von euch_1 hat $[\text{seine}_1 \ \text{Mutter}]$ am öftesten e_1 geschimpft?
                   which-one of you has his   mother the most   scolded
        b.   Welche Sekretärin_1 hast du $[\text{ihrem}_1 \ \text{Chef}]$ noch nicht e_1 vorgestellt?
                   which   secretary have you (to) her boss yet   not   introduced

There is a surprising contrast between the WCO-effect in English and its absence in German. Does this mean that WCO is not a valid diagnostic? If the S-structure representations were as in (23), one could come to this conclusion. However, the German datum in (24) shows a clear WCO-effect:

 (24) $*$Welchen   von euch_1 hat $[\text{seine}_1 \ \text{Mutter}]$ gesagt $[_{CP} \ e_1 \ \text{daß}$ $[_{IP} \ \text{wir} \ e_1 \ \text{rauswerfen sollen}]]$
          which-one of   you   has his   mother said   that   we   out-throw   should

The conclusion that WCO is not a valid diagnostic is likely to be wrong, and we must ask whether (23a,b) are the right kind of representations. Let us therefore follow the idea that an argument may first undergo scrambling (in the sense of object- shift or NP-movement), as we have done in the above account of VP-topicalization. Shifting of the argument first to an L-related A-position and then moving it on to an operator position will essentially create the chain {A', A, A}. Under this assumption, the representation of (23a, b) will be as in (25) where the scrambling trace e_1' voids the WCO-effect:[13]

(25)   a.   Welchen   von euch$_1$ hat e$_1$ [seine$_1$ Mutter] am öftesten e$_1$ geschimpft?
              which-one of you   has   his   mother the most   scolded

        b.   Welche Sekretärin$_1$ hast   du e$_1$' [ihrem$_1$ Chef] noch nicht e$_1$ vorgestellt?
              which   secretary   have you   (to) her boss yet   not   introduced

Since German does not permit scrambling from a tensed CP, there is no way of licensing a trace to the left of seine Mutter in (24); also notice that such a trace would illicitly bind the A'- trace in SpecCP. Thus, the difference between English and German can be explained on principled grounds, and also the difference between German cases with and without the WCO-effect. I think that these observations give rather strong support to a theory of VP-topicalization according to which NP-traces but not variables can be topicalized with the verb.

VI. RESTRICTIONS ON TOPICALIZATION

As Lasnik and Saito (1992: ch.3) among others notice, not everything that can be topicalized in an embedded clause can also serve as a topic in the root clause. A descriptive generalization for root clause like the following seems to be correct: Only those categories can serve as topics which can be picked up by a pronoun of some sort. This is reminiscent of Koster's (1978) suggestion to analyze Dutch and German topicalizations as cases of Left Dislocation (LD). According to this theory there is a base generated topic phrase in LD-position, and this topic phrase is coindexed with an overt or zero pronoun in SpecCP. What undergoes movement is not the topic phrase itself but the pronominal.[14]

I do not want to defend Koster's original theory for those cases which do not overtly show LD.[15] One basic insight that can be derived from it, however, is that any phrase in the initial position of a root clause

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[13]Tilman Höhle (p.c.) still finds a mild WCO-effect in these examples. This is no problem given that scrambling sometimes leads to a degradation of acceptability

[14]The idea goes back to Chomsky (1977).

[15]This would be difficult given the fact that certain constituents can appear in initial position which cannot be picked up by a pronominal e.g. quantified phrases:

(i)   Jeden Studenten (*den) hat man eingeladen
(ii)   every student   him has one invited

is subject to a restriction that requires potential pronominalizability. To see this, consider the following examples:

(26) a.   Wegschmeissen (das) würde er diese Bücher nie
             throw-away   this   would he those books never

      b.   Treu (das) war er ihr leider   nicht
             dear   this was he her unfortunately not

      c.   Wasser (das) bekam er immer genug
             water   this got   he always enough

      d.   Autos (solche) sieht man dort viele
             cars   such   sees one there many

      e.   Damit   (?da) hat er nicht gerechnet
             there-with there has he not   reckoned

      f.   Auf (?das) hat er nur die Tür gemacht
             open this   has he only the door made

In each case it is (more or less) possible to find a pronominal that matches the topic phrase. In the following examples this is not possible. Notice that cases like (27b) have been mentioned and discussed as a problem for their analysis by den Besten and Webelhuth (1990), and have been taken as evidence against remnant-XP topicalization by others:

(27) a.   ? *Auto (???) sah man dort ein schmutziges
              car   saw one there   a   dirty-one

      b.   *[$_{PP}$ e$_1$ mit]$_2$ (???) hat er da$_1$ nicht e$_2$ gerechnet
                  with   has he there not   reckoned
          intended: "He has not reckoned with this"

      c.   *Ab (???) hat er das Geschirr gewaschen
          intended: "He has done (washed) the dishes"

The main question here is why (27b) is deviant. Claiming that the source of its ungrammaticality is the unbound trace would clearly miss a generalization that could as well capture the deviant cases in (27a) and (27c). In my view, the restriction on possible topics as reflected by the pronoun test indicates that certain categories cannot function as topics irrespective of the traces that they may contain. (27a), which is deviant for many but not all speakers of German, shows a nominal category that can never appear as such as a syntactic phrase - as opposed to Autos in (26d), which is a regular bare plural.[16]

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[16]There is a discussion in early work by Hannes Kniffka which I could, however, not trace. related to this obsevation is also that southern dialects "rescue" such constructions by regeneration (see footnote I and van Riemsdijk, 1989). In these dialects (27a) turns out as (i) which is then perfectly grammatical:

Thus a first requirement seems to be that the topic must be a category that is in the language a potential XP.[17] If this is true, how come that a single transitive verb (or a remnant VP) can be a topic? I want to suggest that by its form a single transitive verb is indistinguishable from an intransitive verb (which exhausts the whole predicate). There is no formal reflex in German such as object agreement etc. that could signal the presence or absence of an internal argument. It is in this way that I believe that the Frey and Tappe (1991) analysis follows the right intuition. The fronted constituent is by its form non-distinct from a full-blown XP. With this assumption we get a different reason for the ungrammaticality of (27b). A preposition by itself never counts as a potential PP. Notice that the same holds in English. In the English extraction from a prepositional PP is possible as in the pseudo-passive (28):

(28)   [This topic]$_l$ has never been talked [$_{PP}$ about e$_l$] much

As can be expected, remnant PP topicalization is impossible here:

(29)   *About, this topic has never been talked much

Before we turn to further discussion of this phenomenon, let us now consider the difference between the ungrammatical (27c) and the grammatical (26f). The difference is immediately clear: Both ab and auf are separable prefixes, but ab in (27c) as opposed to auf in (26f) is semantically non-transparent and cannot invoke a set of entities with which it could contrast as seems necessary to satisfy the semantics of the topicalization construction. For a sentence like Er hat die Tür aufgemacht ("He has opened the door") there is a converse, namely Er hat die Tür zugemacht ("He has Closed the door"). Clearly the semantic difference rests in the selection of the respective morpheme. The discourse condition on the acceptability of the topicalization case Auf hat er die Tür gemacht is that speaker and hearer share the presupposition λx [er hat die Tür x gemacht], where the variable x ranges over the meanings corresponding to auf and zu. Uttering the topicalized sentence satisfies this presupposition by selecting a value for x. For the deviant case *Ab hat er das Geschirr gewaschen no sensible presupposition exists, because it remains unclear over which meanings x could range. This is immediately clear when we inspect the German lexicon for semantically transparent alternatives to the entry abwaschen. There are well entries such as aufwaschen, wegwaschen, nachwaschen, vorwaschen etc., but the prefixes auf, weg, nach, vor are not induced as alternatives to the prefix ab. All I can conclude from this is that abwaschen and the like are not composed according to the Fregean principle of semantic composition,

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(i)   [Ein Auto] sah man dort ein schmutziges
         Notice that the topic here is a possible DP.

[17]See Bayer (1990) for discussion and a different conclusion for V(P) -topicalization than the one of this paper.

although they are syntactically analyzable.[18] Take alternatively <u>vor</u> and <u>nach</u>. Given the right discourse environment it is possible to say (30):

(30) VOR hat   sie die Gläser zwar gewaschen, aber leider
        pre   has she the glasses well washed   but unfortunately
        nicht NACH
        not   after
        "She has 'pre-cleaned' the glasses, but unfortunately not 'post-cleaned'"

In (26f), <u>Auf (?das) er nur die Tür gemacht</u>, we are dealing with a slightly different case. Here the focus ("new information") is on the constituent <u>die Tür</u>. The presupposition is roughly λx [er hat x aufgemacht]. Thus the sentence seems equivalent to <u>Aufgemacht (?das) hat er nur die Tür</u>; <u>aufmachen</u> serves as a <u>discourse topic</u>. Whatever the best account of these constructions is, these observations make it rather clear that we are dealing here with restrictions that go far beyond syntax proper. Informally, there seem to be at least the following factors that control the appearance of a topic phrase:

(31) <u>Restrictions on topic phrases</u>
        (i)   a topic must show formal resemblance to a maximal constituent in the language in
                question
        (ii)   a topic must be a potential discourse topic

As far as words are concerned, for German (i) selects occurrences of the class {N, V, A}, because these may be formal representatives of NP/DP, VP and AP, but it excludes the class (P). Prepositions can be used as predicates, however, - at least according to the <u>small clause analysis</u> of separable prefixes that is assumed by some linguists.[19]

In this role, they can be topics, given that they can in addition function as possible discourse topics. A definition of the notion <u>potential discourse topic</u> is clearly outside the scope of the present considerations, but it is intuitively sufficiently clear to allow for a separation of purely syntactic from discourse semantic restrictions.

In connection with (31)(i), it is also worth noting that there are important morphological differences between English and German verb forms. The infinitive in English equals the root, while the infinitive in German is an inflected form that equals the neuter nominal form (gerund) . In picking a

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[18] As shown by head movement in German (i) and Dutch (ii):

(i)   [das Geschirr ab+waschen] zu => das Geschirr ab e_1 zu waschen$_1$
(ii)   [de bordjes af+wassen] willen heeft => [de bordjes af e_1] heeft willen wassen$_1$

[19] Most prominently by Teun Hoekstra.

German infinitival verb with a pronoun as in (26a), <u>wegschmeissen (das) würde er diese Bücher nie</u>, there is no featural conflict. It may be the case that once there is a pronominal in SpecCP, the verbal form in LD-position is converted to a coindexable nominal form. In English, this is impossible as shown by the ill-formedness of (32):

(32)   *Kiss, (this) John certainly will Mary

As the grammatical case in (21) above shows it is not the presence of an NP-trace that gives rise to ill-formedness, but the root form that does not all ow for the conversion process that seems necessary to allow for coindexation with a nominal category.[20]

VII. LEFT DISLOCATION

Let us now briefly return to some cases that had been introduced earlier. I repeat the data in question with my own judgements.

(7b)   [Meinen Kindern zeigen] würde ich solche Bücher nie
(9)   [Solche Bücher zeigen] <u>das</u> würde ich meinen Kindern nie
(10)   *[Meinen Kindern zeigen] <u>das</u> würde ich solche Bücher nie

We have argued above that the fronted VP is allowed to contain an NP-trace, and that this trace is bound after reconstruction of the VP in its original position. Assuming that the <u>acc < dat</u> order underlying (7b) is the result of scrambling, the fronted VP must contain the trace of <u>solche Bücher</u>. The cases in (9) and (10) show V-projections in LD-position, assuming that the pronoun <u>das</u> resides in SpecCP. According to conservative assumptions, <u>das</u> is unable to reconstruct a trace.

Since there is a trace in the left-dislocated VP which cannot be reconstructed, this trace violates the ECP; thus, there seems to be an explanation for the ungrammaticality of (10). The interesting question is why (9) is grammatical or at least significantly better than (10). If there were a scrambling trace in the left-dislocated VP, (9) should be as bad as (10). We have to conclude that there is no trace involved; and this seems to bring us back to the Frey and Tappe analysis. I will try to show now that we are not forced to the latter consequence.

        In order to do so, we have to take a look at the role of the pronominal <u>das</u>. Consider the following examples:

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[20] There is a prediction involved. Consider English gerunds, which must be nominal to allow for cases like <u>kissing is fun</u>. We could then expect that (32) becomes acceptable when the infinitive is replaced by a gerund. <u>*Kissing, (this) John certainly has been Mary</u> remains bad, however. I am not sure what the precise reason for this could be.

(33)   a.   weil ich meinen Kindern <u>das</u> nie würde
         b.   *weil ich solche Bücher <u>das</u> nie würde

(33a) is a natural utterance in a context where the showing of certain books has been established as a discourse topic. No such context can be found for (33b).[21] The pronoun <u>das</u> in (33a) refers to an entity that must have been established in the discourse.[22] The important thing is that this copy must be the copy of a <u>verbal projection</u>. Following standard assumptions about the restoration of elided material at the level of LF,[23] in the present discussion we would have to conclude that it corresponds to the category [$_{VP}$ e_1 e_2 <u>solche Bücher zeigen</u>] where e_1 is the trace of the subject- and e_2 of the indirect object-DP. If <u>das</u> were a placeholder, however, that can insert traces into the structure at LF, it would be unclear Why the same process fails in (33b).[24] Let us stick to the assumption that *das* is a copy that does not involve traces. The question then is how the arguments <u>ich</u> and <u>meinen Kindern</u> can still be licensed. I assume here that argument shift is basically as envisaged in Chomsky (1993). Chomsky suggests that DPs leave the VP for the purpose of having certain features checked. The landing sites of these cases of A-movement are the specifiers of various functional categories. I will not be specific about the nature of these features; for instance, I would not like to argue that any of the arguments in German has to be externalized for Case checking, because many arguments have been brought forward to the extent that Case including nominative - must be available inside VP. Ignoring this piece of vagueness, we can then follow Chomsky (1993: 28f.) and say that movement to the specifier of a functional category is movement to a <u>narrowly L-related position</u>. Slightly extending Chomsky' s own definition, I want to suggest the following:

(34)   A position P is <u>narrowly L-related</u> if both (i) and (ii) hold: (i) P is SpecXP; (ii) by virtue of head movement the head X is non-distinct from the head Y that theta-licenses a category in P.

A verb that theta-licenses a DP will undergo movement to a functional category such as AGR. This movement erases the distinctness of V and AGR in the sense of Baker (1988). SpecAGRP is then narrowly L-related to V. Notice that according to this definition SpecIP is not automatically L-related to

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[21]<u>Showing to children</u> does not seem to qualify as a natural discourse topic.

[22]For reasons that are not central to the present discussion, this copy cannot be an empty category in German.

[23] Cf. Sag (1976).

[24]The entire explanation would then rest on the somewhat unclear notion <u>possible discourse topic</u>; we would have to say that <u>Bücher zeigen</u> is a possible discourse topic, while <u>Kindern zeigen</u> is not. But this argumentation would be rather circular, because there is no independent (extra-grammatical) notion of <u>discourse topic</u> that could avoid making reference to the syntactic status of the category involved.

the verb. To see this, consider a passive sentence like <u>John was presumably killed</u>; due to the intervention of the adverb, V cannot have moved to the auxiliary, and the checking domains of the two remain distinct. As we will see shortly, this is a desirable consequence. Returning to the definition in (31), it seems intuitively clear that arguments in a narrowly L-related position can be identified per se i.e., without extra computation that identifies their traces. Their checking domain is morphologically connected to the position in which they are theta-licensed. In this case, their traces could delete without getting in conflict with established principles of grammar. In a sentence like <u>John laughed</u>, the relation that the DP <u>John</u> bears to the lexical item <u>laugh</u> can be uncovered without undoing head movement of V to AGR.[25] We face a more challenging case when we consider sentences with more than one argument chain. There are two cases to be distinguished: Movements which leave the relative D-structure order untouched, and those which don't. Only the latter are usually subsumed under the term scrambling. I want to extend my proposal of trace deletion now to those cases in which the relative D-structure order as induced by the selection of a certain verb remains unaffected. In this case the entire set of arguments may be dislocated in order to permit feature checking; since the order of arguments as well as the link to their D-structure origin in VP can be discovered at S-structure, trace deletion is an option that does not seem to offend any principles.[26] Take next classical scrambling as exemplified in German cases in which the relative D-structure order gets destroyed. Unless powerful additional mechanisms are invoked, trace deletion would in this case lead to a destruction of lexically induced information. Take again the verb <u>unterziehen</u> ("to subject to") that was mentioned in footnote 3.

This verb induces <u>acc < dat</u> order; deviation from this relative order leads to various effects of binding, focus and scope.[27]

It is, of course, a theory-internal question whether these effects should be connected to the presence of a trace, but given the assumptions underlying the Principles and Parameters approach, it is natural to search for an implementation of this in terms of an established operation in syntax, namely move-α.[28] With classical scrambling we have then found a case of argument shift in which the deletion of traces would destroy important information. If these considerations are on the right track, we can formulate the following restriction:

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[25]A parsing analogue can make this even clearer: In syntactic parsing it seems unnessecary to engage in additional morphological parsing once a morphologically complex structure can be accessed in pre-computed form in the lexicon. This assumption does not trivialize morphology as is sometimes suspected.

[26]One can compare this with <u>vacuous movement</u>. It is a scrambling operation that does not affect the relative order of constituents that undergo the process.

[27]See Frey (1990) and Pafel (1993) for German, as well as Aoun and Li (1989).

[28]For a different derivation of scrambling in terms of complex category formation see Bayer and Kornfilt (1990; forthcoming).

(35)   Restriction on Deletion
        Traces of n arguments in narrowly L-related positions may delete if the relative D-structure order
        of these arguments is preserved at S-structure.[29]

(34) and (35) enable us to give an account of the problem of left-dislocated VP and the contrast
exemplified in (33a,b):

(33)   a.   weil ich meinen Kindern <u>das</u> nie würde
        b.   *weil ich solche Bücher <u>das</u> nie würde

The verb <u>zeigen</u> ("to show") induces the order <u>IO(dat) < DO(acc)</u>. Once this order is preserved at S-
structure, the restriction on trace deletion in (35) is not operative, and we can assume a representation in
which the traces of the shifted arguments have disappeared. Such a structure is compatible with the
substitution of the VP in (36), where *** signals a deleted trace:

(36)   [$_{VP}$ ***$_{su}$ ***$_{io}$ DO V]

        The "antecedents" of ***$_{su}$ and ***$_{io}$ are assumed to be in L-related positions that retain the
relative D-structure order.[30]

(i)   weil meinen Kindern$_{io}$ ich <u>das</u> nie würde

It is, however, unnecessary to assume only one-step scrambling of the IO across SU. As we have seen
already w.r.t. WCO and the status of variables in VP-topicalization, there are important reasons to adopt
successive movement from scrambling positions. The underlying representation of (i) would then be:

(ii) weil meinen Kindern$_{io}$ ich$_{su}$ e$_{io}$ <u>das</u> nie würde

i.e. once the IO had left VP it has changed its position relative to SU, but the trace left by this second
move is subject to a licit deletion operation. A question that arises here is what would motivate successive
scrambling. I cannot answer this question at this point, but certain phenomena in German syntax strongly
suggest that a one-to-one relation of trace and L-related position cannot be maintained. A discussion of
these facts is outside the scope of this paper.

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[29]If we would seriously adopt Chomsky's Minimalist Program, this restriction as well as various
other assumptions in this paper would have to be reformulated, because the MP-grammar has only the
interface levels LF, PF and the lexicon.

[30]An objection could be that the following sentence is also grammatical:
(7b') [Meinen e$_1$ Kindern zeigen]$_2$ würde ich [solche Bücher]$_1$ nie e$_2$

With this theory we get a straightforward explanation for the datum in (9):

(9)   [Solche Bücher zeigen] das würde ich meinen Kindern nie

The representation is almost as it stands because the VP in left-dislocated position does not contain any trace. The traces that are normally required could disappear because their antecedents are in L-related positions that retain their D-structure order. Nothing more needs to be said. (10) and (33b), however, are bad. If zeigen is as argued above, the left-dislocated VP in (10) must contain the trace of the DO. The correct representation is then:

(10')   *[Meinen Kindern e_1 zeigen] das würde ich [solche Bücher]$_1$ nie

Given the well-motivated assumption that the pronominal copy of the LD-phrase (discourse topic) cannot reconstruct a trace, e_1 remains unbound and violates the ECP. Take finally the datum in (7b), which I think is marked but grammatical. At first sight, it seems to differ from (10) only minimally, but in fact it differs quite dramatically: It is not an LD-construction. The fronted VP is itself in SpecCP. Given what we have said so far, this fronted VP must at least contain the trace of the DO. This trace is rescued under reconstruction. The underlying structure of (7b) is then as in (7b'):

VIII. CONCLUSION

We compared two theories of V(P) -topicalization in German, one which allows for the fronting of a remnant VP which contains scrambling traces, and one which disallows traces which can only be bound under reconstruction. The latter theory instead adopts a non-standard verbal projection for German. There is one remarkable observation that is compatible with the former but not with the latter, namely Huang's (1993) observation that VP-topicalization exhibits less freedom for binding principle A than DP-topicalization. Huang 's explanation of this effect in terms of the ISH makes crucial use of the presence of the trace of the subject in the fronted VP. In the present paper I have made an attempt at developing Huang's proposal more in the direction of German syntax and some of its special problems. In this context we have found a number of cases which point to the basic correctness of remnant-VP topicalization. We have also shown that some data which seem to be problematic for this account are likely to be in need of an independent explanation in terms of discourse semantics. One major problem that has been noticed could not be addressed in a serious way, however, namely the question why wh-traces cannot undergo the reconstruction process. I leave this interesting issue for future research.

APPENDIX: REMARKS ON RECONSTRUCTION

Reconstruction is a process that has not been met with approval. It makes little sense to assume movement of a phrase to a place where it is ultimately unwanted, and to then move it back to its original position. Chomsky (1992:49) shares this feeling:

"Reconstruction is a curious operation, particularly when it is held to follow LF-movement, thus restoring what has been covertly moved, as often proposed […] If possible, the process should be eliminated."

This remark is followed by an ingenious proposal as to how reconstruction could be substituted by a <u>copy and deletion</u> theory. In this theory, operator/wh-movement has a physical effect only in the PF-component of the grammar. At LF (which in the Minimalist Program is the only truly syntactic level of representation), there is a copy of the moved phrase left in situ. Next, there is a PF-deletion process that removes this copy, but only for the interface side of the grammar that is visible to phonetic interpretation. Consider now a sentence like

(1)   (Guess) [in which house] John lived?

The fact that the lexical material <u>in</u> and <u>house</u> is fronted to SpecCP is rather irrelevant for the semantic component if we follow the natural assumption that the purpose of wh-movement is to assign scope to an operator. The copy theory gives the following representation:

(2)   [in which house] John lived [in which house]

At PF, (2) appears as

(2')   [in which house] John lived [ ]

but (2) persists in LF. Here, wh needs scope over the proposition. There are two ways of extracting wh, as shown in (3a) and (4a) with the respective interpretations in (3b) and (4b):

(3)   a.   [which]$_1$ [in [e$_1$ house]]
        b.   which x, x a house [in x]

(4)   a.   [which]$_1$ [in [e$_1$ house]]
        b.   which x [in [x house]]

I will ignore the pied-piping case in (3) and just concentrate on the option shown by (4) where which counts as the operator.[31] Parallel to the PF-deletion process there is a deletion going on in LF, as Chomsky points out on p. 51. According to this process everything but the operator deletes. Taking (4) as our example, the full sentence looks like (5) before LF-deletion:

(5)   [which]$_1$ [in e$_1$ house]] John lived [[which]$_1$ [in e$_1$ house]]

There is no need for the wh-element in situ;[32] likewise there is no need for the PP headed by in in SpecCP (which is now exclusively the locus of the operator).

Both of these will delete, and (5) is turned into (5'), which is the form that interacts with the conceptual intentional system (p. 3):[33]

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[31] Chomsky makes some informal remarks about a meaning difference that should hold between (3) and (4). He suggests that there must be an ambiguity in the question In which house does John live? which shows up in the two answers the old one corresponding to the pied piping case and that (one) corresponding to the pure operator case. (p. 49) In the first case the variable corresponds to a DP and semantically ranges over houses; in the second case it corresponds to D only and is said to range over "entities". I am not sure that I can follow the semantic side of this statement. In my view even in the latter case it is not possible to consider a different set of entities than houses when providing an answer which respects the presupposition of the question. In other words, the restriction on the operator does not go away.

[32] Indeed it is not allowed there by the Principle of Full Interpretation (see Chomsky, 1986b), because it would represent structure that would not receive an interpretation, just like a deviant sentence such as *John likes Mary Bill.

[33] As before I represent deletion sites which result from non-PF-type deletions with ***.
From the representations in (11) it is obvious that the anaphor in (11a) will select John as its antecedent, while in (11b) it will select Bill. Using letters as subscripts to show anaphoric relations, the LFs will roughly be as in (12):

(5')   [[which]$_l$ [***]] John lived [***] [in e$_1$ house]]

The important aspect of this representation is that everything but the operator appears as "reconstructed". "Reconstruction" is then a conventional label like "passive" or "clefting"; as a process with an ontological status in the grammar it has disappeared.

Let us now turn to the more reconstruction cases which show binding alternatives. Chomsky (p.53f) discusses among other examples the following case:

(8)   John wondered which picture of himself Bill saw

The copy theory provides the form

(9)   John wondered [which picture of himself] Bill saw [which picture of himself]

Now the optional use of the pied-piping mechanism leads to the following two forms:

(10)   a.   John wondered [which picture of himself$_1$] e$_1$] Bill saw [[which picture of himself$_1$] e$_1$]
       b.   John wondered [[which$_1$] e$_1$ picture of himself] Bill saw [[which$_1$] e$_1$ picture of himself]

 Deletion in LF yields:

(11)   a.   John wondered [[which picture of himself$_1$] ***] Bill saw [*** e$_1$]

       b.   John wondered [[which$_1$] ***] Bill saw [*** e$_1$ picture of himself]

(12)   a.   John$_i$ wondered [[which picture of himself$_i$]$_l$ ***] Bill$_j$ saw [*** e$_1$]
       b.   John$_i$ wondered [which$_l$ ***] Bill$_j$ saw [*** e$_l$ picture of himself$_j$]

With this in mind, let me finally come back to VP-topicalization. In German it is clear that the fronted VP is in an operator position. In English it is not perfectly clear whether the fronted (adjoined) position can engage in a uniform chain with intermediate SpecCP positions.[34] Since this question is not really relevant at this moment, I will for simplicity assume that the topicalized VP in English can head an A'-chain with chain-links to SpecCP. Consider now (13a) with the conventional representation in (13b):

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[34] See the discussion in Lasnik and Saito (1992) and in Müller and Sternefeld (1991).

(13)   a.   Criticize himself, John thinks that Bill will not
       b.   [Criticize himself]$_1$ John thinks [$_{CP}$ [e$_1$ ' [$_{C'}$ that [$_{IP}$ Bill will not e$_1$]]]

The ISH together with the copy theory suggests the representation in (14) instead:

(14)   [e$_1$ criticize himself] John thinks [$_{CP}$ [e$_1$ criticize himself] [$_{C'}$ that [$_{IP}$ Bill$_1$ will not [e$_1$ criticize himself]]]]

The desired LF is one in which the anaphor is bound by <u>Bill</u>, not by <u>John</u>. The situation here is not entirely parallel to Chomsky's wh-example, because there is no obvious operator involved that would undergo LF-raising.[35] Let us assume that the semantic reason for VP-fronting is that the constituent is focused. I want to propose a feature +F for focus that is associated with that part of the fronted constituent that has a phonetic manifestation. In the case of our example, this is <u>criticize himself</u>. These yields:

(15)   [$_{VP}$ +F$_{VP}$ [$_{VP}$ e$_1$ criticize himself]] John thinks [$_{CP}$ [$_{VP}$ +F$_{VP}$ [$_{VP}$ e$_1$ criticize himself]] [$_{C'}$ that [$_{IP}$ Bill will not [$_{VP}$ +F$_{VP}$ [$_{VP}$ e$_1$ criticize himself]]]]]

On the PF-side, the copies of the VP in SpecCP and in situ are deleted. On the LF-side, these VPs will in principle remain. The feature +F$_{VP}$ in the intermediate and in the in-situ copy is deleted. The central point is now that at LF the traces and the anaphors must be bound. There is only one way in which this can be achieved: The VP in situ must remain, and all the others have to delete. This process turns (15) into (16):

(16)   [$_{VP}$ +F$_{VP}$ [***]] John thinks [$_{CP}$ [$_{VP}$ ***] [$_{C'}$ that [$_{IP}$ Bill will not [$_{VP}$ e$_1$ criticize himself]]]]

One problem may be that the operator feature +F must associate with the lowest VP in the sense of an A'-chain. I assume here that this is achieved by remnant categorial shells that remain at the deletion sites. One could also implement this with traces. In that case we would have to assume that focus raising leaves a trace. However this is going to be done, it seems to be more a notational problem. The important issue here is that there is only one representation that does not "crash" at LF, to use Chomsky's terminology, and this is (16). Only (16) shows a "reconstructed" VP which satisfies both anaphor binding and the ECP: <u>himself</u> is bound by the trace e$_1$' and e$_1$ is locally bound by <u>Bill</u>. If the VP had been LF-

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[35] For reasons of space I will ignore <u>LF-cliticization</u>, and refer the interested reader to Chomsky (1992: 57ff).

   The purpose of the exercise in this appendix was to show that there is a technical implementation in the sense of Chomsky's (1992) copy-and-deletion mechanism which preserves the reconstruction effect while avoiding the absurdity of literal reconstruction. "Reconstruction" in this framework reduces to a <u>façon de parler</u>.

deleted in situ and left in the intermediate SpecCP, the anaphor would be bound by $e_{1'}$ but the binder of e_1 would be the wrong DP, namely <u>John</u>. <u>John</u> bears the subject role of a VP which is a different argument complex. The non-ambiguity of (13a), as shown by the LF in (16), is precisely what Huang's reconstruction theory in conjunction with the ISH predicts.

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