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Reconstructing the A/A-bar Distinction in Reconstruction

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1 Introduction

This paper addresses some long-standing puzzles regarding reconstruction—the phenomenon that a moved phrase is interpreted for scope and binding (though see below) in a position lower than its surface position. A common characterization of scrambling in German and Japanese is that only Ā-scrambling (also referred to as long/medium or IP scrambling) can reconstruct ((1)a for German, (1)b for Japanese), whereas A- (short or VP) scrambling does not reconstruct (cf. (2); see Frey, 1989; Haider, 1989; Saito, 1989, 2003; Mahajan, 1990; Tada, 1993; Nemoto, 1993; Lasnik, 1999, among many others).[1]

(1) a. weil   dieses Bild von sich$_i$ der Hans$_i$ seinen Freunden t_{ACC} schenken wollte
        since this picture of himself the John   his friends t_{ACC} give   wanted
        'since H. wanted to give this picture of himself to his friends'   [Lechner, 1998b:297]

   b. Otagai-o$_i$ [Taroo-to Itiroo]$_i$-ga   Mari-ni t_{ACC} syookaisita
      each other-ACC   Taro-and Ichiro-NOM   Mari-DAT t_{ACC} introduced
      'Taro and Ichiro introduced each other to Mari.'   [Yamashita, to appear]

(2) a. weil   sie   [ein Bild von seinem$_{*i}$ Auftritt]   [jedem Kandidaten]$_i$ t_{ACC} zeigte
        since she   [a.ACC picture of his appearance]   [every.DAT candidate] t_{ACC} showed
        'since she showed a picture of his appearance to every candidate'   [Lechner 1998b:299]

   b. *Taroo-ga   otagai-o$_i$ [Mari-to Hanako]$_i$-ni t_{ACC} syookaisita
      Taro-NOM   each.other-ACC   Mari-and Hanako-DAT t_{ACC} introduced
      Lit. 'Taro introduced each other to Mari and Hanako.'   [Yamashita, to appear]

It is also well-known, yet often ignored, that the lack of A-reconstruction only concerns binding—in both Japanese and German, A-movement does allow reconstruction for scope (cf. (3) for Japanese). As pointed out by Lechner (1996, 1998a, 1998b), this split is particularly striking in (2a), since, despite not allowing reconstruction for binding, this example is scopally ambiguous—the accusative QP can take scope under the dative QP, but crucially in neither interpretation is a bound variable interpretation of the pronoun embedded in the moved QP possible.

(3) Taroo-ga   huta-ri-no otoko-o   san-nin-no onna-ni t_{ACC} syookaisita
    Taro-NOM   2-CL-GEN men-ACC   3-CL-GEN women-DAT t_{ACC} introduced
    'Taro introduced two men to three women.'   [Hoji, 1985:2»3/3»2]

The lack of reconstruction in A-scrambling contexts is also puzzling when compared to A-movement in English (see Fox, 1999, 2000, 2003; Wurmbrand and Bobaljik, 1999, for arguments for the claim that A-movement exists). As shown in (4a), a pronoun embedded in an A-moved subject can be bound by a lower quantified indirect argument. Since, in contrast to cases such as (4b), where there is no trace of the subject below the indirect argument, no *weak cross-over* violation arises, this variable binding relation must be the result of reconstruction of the subject rather than QR of the universal QP across the subject.

(4) a. Someone from his$_i$ class seems to every professor$_i$ t_{SUBJ} to be a genius.   [Fox, 1999:161]
   b. ??Someone from his$_i$ class shouted to every professor$_i$ to be careful.   ″

[1]There are certain differences between German and Japanese regarding examples such as (2a), which I cannot address in this paper.

This paper provides (the summary of) a uniform account of the distribution of reconstruction in (1) through (4). While these facts have received accounts in the literature, there is no uniform account explaining the entire distribution above, in particular no account that answers the following questions: Why does A-movement in English reconstruct for both scope and binding, but A-scrambling only for scope? Why does Ā-scrambling reconstruct for scope and binding, but A-scrambling only for scope?

2 ScoT

The account I propose is set in the economy approach to scope put forward in Bobaljik and Wurmbrand (2008). I first summarize the basic workings of this account and then return to the reconstruction puzzles.

2.1 Basic Workings of ScoT

While sentences such as (5a) are scopally ambiguous in English, languages such as Japanese or German are considered to be scope rigid in the sense that in sentences with the order subject»object, only the surface scope interpretation is available, as in (5b). That is, (5b) cannot be used in a situation where each book is read by a different person. To express that meaning, the order of the quantified phrases must be inverted—i.e., scrambling has to be used, as in (5c).

(5) a. Some toddler read every book. $\exists\text{»}\forall; \forall\text{»}\exists$
   b. dareka-ga   subete-no   hon-o   yonda   [Kuroda, 1970]
      someone-NOM   all-GEN   book-ACC   read
      'Someone read all the books.' $\exists\text{»}\forall; *\forall\text{»}\exists$
   c. subete-no   hon-o   dareka-ga   yonda
      all-GEN   book-ACC   someone-NOM   read
      'Someone read all the books.' $^{OK}\forall\text{»}\exists$

Bobaljik and Wurmbrand (2008) [henceforth B&W] follow the intuition presented in many works that the availability of inverse scope (i.e., an interpretation where two quantifiers are interpreted in the opposite surface order) is a direct consequence of the word order options available in a language (see for instance, Lenerz, 1977; Uszkoreit, 1987; Bobaljik, 1995, 2002; Brody, 1995; Diesing, 1997; Szabolcsi, 1997; Vikner, 1997; Pesetsky, 1989; Büring, 2000; Müller, 2000, 2002; Lidz and Musolino. 2006, and the general frameworks of Williams, 2003; Reinhart, 2005; and Broekhuis, 2008). To derive that intuition, B&W suggest the *economy* condition in (6), which renders word orders (i.e., PFs) that are not isomorphic to a particular scope order (i.e., LF) costly, and thus licenses inverse scope (covert movement) only as a last resort.

(6) Scope Transparency (ScoT):   [Bobaljik and Wurmbrand, 2008]
      If the order of two elements at LF is A»B, the order at PF is A»B.
      »: typical hierarchy at the relevant level (e.g., c-command, precedence…)

To illustrate how this system works, consider the derivation for (5c) and the illicit inverse scope derivation for (5b) in (7).[2] B&W crucially assume a Single-Output model of syntax, where all movement is overt, and the overt/covert distinction is the result of different copy choices. Thus, to arrive at an LF where the object takes scope over the subject, overt movement occurs as in (7b). Furthermore, as stated in (6), and motivated at length in B&W, PF is determined *after* LF. If the language is a scrambling language, both PFs in (7d) are in principle possible. However, in this context, ScoT comes into play. Depending on the LF chosen, only one of the PFs will be isomorphic to the respective LF and the non-isomorphic PF will be excluded. If, as in (7c), the LF object»subject is chosen, ScoT favors the matching PF in (5c) and rules out the non-matching PF in (5b). Thus, a sentence with the PF in (5b) cannot correspond to a "QR" LF such as (7c). The only

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[2]The specific technical implementation of ScoT presented here is somewhat different from the way it was presented in B&W.

way that LF can be expressed is by the PF in (5c).

(7) a. Syntax: [*someone*]-NOM [*every book*]-ACC *read*
    b. 'Overt' QR: [*every book*] [*someone*] [*every book*] *read*
    c. Output of syntax—LF: [*every book*] [*someone*] [~~*every book*~~] *read*
    d. Output of syntax—PF1:   [*every book*] [*someone*] [~~*every book*~~] *read*   ✓ ScoT (5c)
       Output of syntax—PF2:   [~~*every book*~~] [*someone*] [*every book*] *read*   *ScoT *(5b)

How then is inverse scope possible in English? The answer lies in the economy nature of ScoT. English is not a scrambling language, which in this framework is accounted for by the (language-specific) assumption that in QR/scrambling contexts, in English, PF cannot choose the higher copy. Since, in the derivation in (8), there is only one PF available (the scrambling PF is excluded independently in English), that PF will be licensed, despite violating ScoT, since there is no 'better' option available.

(8) a. Syntax: *Some toddler read every book*
    b. 'Overt' QR: [*every book*] [*some toddler*] *read* [*every book*]
    c. LF: [*every book*] [*some toddler*] *read* [~~*every book*~~]
    d. PF1:   *[*every book*] [*some toddler*] *read* [~~*every book*~~]   excluded independently
       PF2:   [~~*every book*~~] [*some toddler*] *read* [*every book*]   *ScoT, but tolerated

Equipped with ScoT, we can now return to the reconstruction puzzles. In the following section, I will show how ScoT accounts for the basic reconstruction properties in A-movement contexts. Section 2.3 then turns to reconstruction in Ā-movement contexts.

2.2 Back to Reconstruction—the A Part

The ScoT model immediately predicts that reconstruction for binding is impossible in German and Japanese A-scrambling. As shown in the derivation in (9), if the reconstructed (DAT»ACC) LF is intended (as required to meet Condition A), ScoT rules out the non-matching (ACC»DAT) PF in (9)/(2b). That PF will only be licensed as a PF corresponding to an LF ACC»DAT (which, in a sentence such as (9)/(2b), is problematic, since Condition A could not be met).

(9) *Taroo-ga   otagai-o$_i$ [Mari-to Hanako]$_i$-ni   t$_{ACC}$ syookaisita   =(2b)
    Taro-NOM   each.other-ACC   Mari-and Hanako-DAT   t$_{ACC}$ introduced
    Lit. 'Taro introduced each other to Mari and Hanako.'   [Yamashita To appear]
    a. Syntax: [*M&H*]   [*each other*]   *introduced*
    b. A-scrambling: [*each other*] [*M&H*]   [*each other*]   *introduced*
    c. LF: [~~*each other*~~] [*M&H*] [*each other*]   *introduced*
    d. PF1:   [~~*each other*~~] [*M&H*] [*each other*]   *introduced*   ✓ ScoT
       PF2:   [*each other*]   [*M&H*]   [~~*each other*~~] *introduced* *Scot ➡ *

What about scope reconstruction in A-scrambling contexts then? To account for the mismatch between reconstruction for scope and reconstruction for binding, I follow the works on semantic reconstruction (Cresti, 1995; Rullmann, 1995; Sharvit, 1999), in particular, Lechner (1996, 1998a,b). According to the semantic reconstruction approach, traces (or in the current framework, non-privileged copies) can be interpreted (in semantics) as higher types, yielding the effect of scope reconstruction *without* actual reconstruction of the quantifier at LF.[3] A full derivation for (2a) is given in (10). As before, in German, ScoT only allows a PF that matches the intended LF, hence reconstruction for binding (an LF phenomenon) is ruled out as in (9). The only way the PF in (2a)/(10) is licensed, is under an LF as in (10c), that is, an LF that does not allow a bound variable interpretation of *his*. However, at the LF-semantics interface, a higher type interpretation is

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[3]Following Fox (1999, 2000), Sauerland (1998), non-privileged copies are not simply deleted at LF, but interpreted after various trace conversion operations apply. To allow semantic reconstruction as outlined in the text, an additional trace conversion operation needs to be assumed.

available for non-privileged copies of quantifiers, resulting in the effect of scope reconstruction, by nevertheless prohibiting syntactic reconstruction.

(10) weil   sie   [ein Bild von seinem∗ᵢ Auftritt]   [jedem Kandidaten]ᵢ   t_ACC   zeigte
      since   she   [a.ACC picture of his appearance]   [every.DAT candidate] t_ACC   showed
      'since she showed a picture of his appearance to every candidate'   [Lechner, 1998b:299]
      a. Syntax: [*every candidate*] [*a pix… his*] *showed*
      b. A-scrambling: [*a pix… his*] [*every candidate*] [*a pix… his*] *introduced*
      c. LF: [*a pix… his*] [*every candidate*] [~~*a pix… his*~~] *introduced*
      d. PF: [*a pix… his*] [*every candidate*] [~~*a pix… his*~~] *introduced*   ✓ ScoT
      e. Semantics: [*a pix… his*] [*every candidate*] T<<e,t>t>   *introduced*

Before turning to A-reconstruction in English, let us briefly compare the ScoT-based account to other accounts of the lack of reconstruction in A-scrambling contexts. An often-cited view is Lasnik's (1999) claim that A-movement does not leave a trace. This approach, however, fails to account for scope reconstruction. Since semantic reconstruction is only possible when there is a trace which can be interpreted as a higher type trace, the availability of semantic scope reconstruction entails the presence of a trace in A-movement contexts. Hence, Lasnik's claim is untenable. Similarly, the possibility of scope reconstruction is mysterious in accounts that deny the existence of short scrambling and assume that both orders, DAT»ACC and ACC»DAT, are base-generated. Under these structures, too, there is no trace which could be interpreted as a higher type trace, and hence scope reconstruction remains unaccounted for.

Finally, ScoT, together with an independently motivated property of English, offers a straightforward answer to the question of why A-reconstruction is available in English. As is well-known, English is subject to the EPP. The specific version of the EPP I assume is the requirement that the specifier of IP must be filled at PF. I assume that the EPP is a hard constraint, which, if not satisfied, causes the derivation to crash. The derivation for a sentence involving A-reconstruction in English is given in (11). The subject moves overtly to the matrix subject position (to check features with T). At LF, the lower copy must be chosen to achieve a bound variable interpretation of the pronoun embedded in the subject. At PF, however, there is no choice in English: a ScoT satisfying PF where the lower copy of the subject is pronounced is excluded since the resulting PF would violate the EPP. For the derivation to converge, the higher copy must be pronounced, despite the fact that this PF ordering violates ScoT.

(11) Someoneᵢ from hisᵢ class seems to every professorᵢ t_SUBJ to be a genius.

      a. Syntax: *seems to every professor to be* [*someone…*] *a genius*
      b. A-movement: [*someone…*] *seems to* [*every prof*] *to be* [*someone…*] *a genius*
      c. LF: [~~*someone*~~*…*] *seems to* [*every prof*] *to be* [*someone…*] *a genius*
      d. PF1:   *[~~*someone*~~*…*] *seems to* [*every prof*] *to be* [*someone…*] *a genius.*   *EPP
          PF2:   [*someone…*] *seems to* [*every prof*] *to be a genius.*   *ScoT tolerated

To complete the discussion of A-movement in English, we also need to look at cases where the EPP is met by the insertion of an expletive. One such case is given in (12). Importantly, *there*-insertion contexts show an important property regarding scope (see den Dikken, 1995; Bobaljik, 2002, among many others): only a low scope interpretation is possible for the subject in (12b), whereas (12a) is ambiguous (see the authors above for further examples illustrating this claim).

(12) a. Someone from NYC seems to be at John's parties.   ∃»*seem*; *seem*»∃
      b. There seems to be someone from NYC at John's parties.   *∃»*seem*; ^OK*seem*»∃

B&W argue, following Bobaljik (2002), that this distribution follows from the interaction of ScoT with another economy constraint, namely a constraint (dubbed DEP) that makes the insertion of an expletive costly.

(13) DEP (Economy Condition): Don't insert Expletive Pronoun

The derivations for the two scope relations in (12) are given in (14) (high scope of the subject) and (15) (low scope of the subject). For the wide scope of the subject, there is only one possible PF—the PF corresponding to overt movement. This PF satisfies both ScoT and DEP, and hence wins out over a PF which involves the insertion of an expletive (which violates both ScoT and DEP).

(14) a. Syntax: *seems to be* [*someone…*] *at John's parties.*
     b. A-movement: [*someone…*] *seems to be* [*someone…*] *at John's parties.*
     c. LF: [*someone…*] *seems to be* [~~*someone*~~*…*] *at John's parties.*
     d. PF1:   [*someone…*] *seems to be* [~~*someone*~~*…*] *at John's parties.* ✓ ScoT, ✓ DEP
        PF2:   *there*   *seems to be* [*someone…*] *at John's parties.*   *ScoT, *DEP

On the other hand, low scope of the subject yields a quandary. The PF/syntactic resources of English permit the subject to be pronounced in the lower position in this example, satisfying ScoT, but this then requires a costly expletive to occupy the matrix subject position to avoid an EPP violation. On the other hand, pronunciation of the higher copy of the subject is possible as well. The EPP is satisfied by the higher copy of the subject, and there is no need for an expletive. Thus, DEP is not violated, but now the cost is a ScoT violation—a PF that is non-transparent with respect to scope relations. The result: both options are possible since neither PF choice is more economical than the other.

(15) a. Syntax: *seems to be* [*someone…*] *at John's parties.*
     b. A-movement: [*someone…*] *seems to be* [*someone…*] *at John's parties.*
     c. LF: [~~*someone*~~*…*] *seems to be* [*someone…*] *at John's parties.*
     d. PF1:   [*someone…*] *seems to be* [~~*someone*~~*…*] *at John's parties.* *ScoT, ✓ DEP
        PF2:   *there*   *seems to be* [*someone…*] *at John's parties.* ✓ ScoT, *DEP

The derivations in (14) and (15) yield exactly the distribution in (12a): low scope of the subject can be expressed in two ways—by the expletive construction or by overt movement (in the traditional sense). However, if high scope of the subject is intended, only the overt movement option is possible; 'covert' movement of the subject is not possible in the expletive construction.

To conclude, in this section, I have argued that the ScoT account, together with the possibility of semantic reconstruction and certain independently motivated constraints (the EPP, a constraint that disfavors expletive insertion, and a language-specific setting for scrambling), derives the basic distribution of reconstruction in A-movement contexts in English, German, and Japanese.

2.3 Ā-Reconstruction

The last question to address is why Ā-scrambling allows reconstruction for binding in German and Japanese. At first, ScoT seems to make the wrong prediction here—as in the case of A-scrambling, syntactic reconstruction should be unavailable, given the existence of a more economical matching PF. However, a quick detour to QR in German will show that there is an interfering factor, which will allow us to distinguish A- from Ā-scrambling and derive the difference in syntactic reconstruction.

Although German is typically considered to be a scope rigid language, it is also well-known that inverse scope is possible in subject»object contexts when a special (rise-fall) intonation is used (Jacobs, 1982, 1983, 1984; Lötscher, 1984; Löbner, 1990; Féry, 1993; Höhle, 1992; Büring, 1997a, b; Krifka, 1998; Sauerland and Bott, 2002).

(16)   weil   mindestens /EIN Student   \JEDen Roman   gelesen   hat
       since   at.least one student   every novel   read   has
       'since at least one student read every novel.'   ∃»∀; ∀»∃

B&W, following Büring (1997a, b), assume that the special intonation represents a TOPIC»FOCUS accent. Furthermore, similar to Williams's (2003) proposal, ScoT (somewhat a misnomer now) picks the best PF match for both information structure and LF. Lastly, information structure orders

TOPICS before FOCUS (Neeleman and van de Koot, 2008, among many others). Returning to (16), the derivation is as in (17). To end up with a wide scope reading of the object, overt QR has to apply as in (17b). Typically, as discussed above, ScoT then favors a PF which matches the LF, yielding rigidity effects. However, once the scope of ScoT is extended to information structure, there is one special case in which ScoT does not force a PF that matches the LF, even in a scrambling language like German. That special case is a context in which the intended information structure and the intended LF yield the opposite orders, exactly as in (17c). In this case, the information structure order is subject (TOPIC)»object (FOCUS), whereas the LF (scope) order is object»subject. Assuming that ScoT compares PF to both LF and information structure, there is then simply no PF that will be a better match than the other; that is, either PF in (17d) will be non-isomorphic to one representation, LF or information structure. Since neither PF-order is better or worse than the other, both orders are licensed.[4]

(17) a. Syntax: [*a student*]$_{TOP}$ [*every novel*]$_{FOC}$
     b. QR: [*every novel*]$_{FOC}$ [*a student*]$_{TOP}$ [*every novel*]$_{FOC}$
     c. LF: [*every novel*]$_{FOC}$ [*a student*]$_{TOP}$ ~~[*every novel*]$_{FOC}$~~
        IS: ~~[*every novel*]$_{FOC}$~~   [*a student*]$_{TOP}$ [*every novel*]$_{FOC}$
     d. PF1:   [*every novel*]$_{FOC}$ [*a student*]$_{TOP}$ ~~[*every novel*]$_{FOC}$~~   *ScoT (IS)
        PF2:   ~~[*every novel*]$_{FOC}$~~   [*a student*]$_{TOP}$ [*every novel*]$_{FOC}$ *ScoT (LF)

Returning to Ā-reconstruction, I suggest that the availability of syntactic reconstruction in Ā-scrambling contexts is also the result of a mismatch between the LF-scope order and the information structure of these examples. Specifically, I assume that in Ā-movement contexts such as (18), in contrast to the A-movement contexts discussed in section 2.2 (but see below), the moved element is interpreted as a TOPIC (see also Neeleman, 1994). Thus in (18a), movement of the object to the left of the subject creates an optimal information structure configuration TOPIC»COMMENT/ FOCUS. Assuming again that ScoT aims at aligning word order with scopal LF on the one hand, and with information structure on the other, examples such as (18) create a ScoT conflict: there is no word order which will perfectly match both LF and information structure, and as a result, both PFs are licensed.[5]

(18) weil   seinen$_i$ Sohn   jeder Vater$_i$ t$_{ACC}$ liebt
     since   his.ACC$_i$ son   every.NOM father$_i$ t$_{ACC}$ loves
     'since every father loves his son'
     a. Syntax: [*every father*]   [*his son*]$_{TOP}$ *loves*
     b. Scrambling: [*his son*]$_{TOP}$ [*every father*]   [*his son*]$_{TOP}$ *loves*
     c. LF: ~~[*his son*]$_{TOP}$~~   [*every father*]   [*his son*]$_{TOP}$ *loves*
        IS: [*his son*]$_{TOP}$ [*every father*]   ~~[*his son*]$_{TOP}$~~   *loves*
     d. PF1:   ~~[*his son*]$_{TOP}$~~   [*every father*]   [*his son*]$_{TOP}$ *loves*   *ScoT (IS)
        PF2:   [*his son*]$_{TOP}$ [*every father*]   ~~[*his son*]$_{TOP}$~~   *loves*   *ScoT (LF)

Note that in this account, the syntactic distinction (i.e., landing site) between A- and Ā-movement is effectively irrelevant. Rather, reconstruction is possible whenever overt movement yields a 'better' information structure. Contrary to previous views, which simply stipulate that A- and Ā-movement differ regarding their syntactic reconstruction potential (and as result, short scrambling must be A-movement, whereas medium/long scrambling must be Ā-movement), the current approach provides an independent property distinguishing between (so-called) A- and Ā-movement:

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[4]This analysis predicts that the scope options will be different in contexts where the topic/focus relations are reversed. In Wurmbrand (2008), I provide initial support for this prediction.

[5]Although the relevance of information structure properties is well-documented for German QR and reconstruction, the exact definition of what counts as a TOPIC is somewhat controversial. I basically follow Neeleman and van de Koot's (2008) definition, which is sufficient for covering the German facts. However, this definition might be too narrow, and further investigation of the information structure properties is necessary, in particular, if the account is to be extended to Japanese. Thanks to Satoshi Tomioka for enforcing this point.

the information structure properties (see also Neeleman, 1994; Neeleman and van de Koot, 2008). It is therefore predicted that when the information structure is set up differently and the TOPIC/FOCUS properties are changed, the A-/Ā-distinction should be overridden, and the effects of reconstruction should change. There are two pieces of evidence showing that this prediction is on the right track.

First, it is predicted that short VP-scrambling should also allow syntactic reconstruction, as long as the moved element is clearly interpreted or marked as a topic. Initial testing with a number of German speakers confirms this prediction. Marking examples such as (2a) with a clear TOPIC-FOCUS intonation (Büring, 1997a, 1997b; Krifka, 1998) changes the reconstruction pattern. In contrast to (2a), a bound variable interpretation where *his* is bound by the universal quantifier is available in (19).

(19) weil   sie   [/EIN Bild von seinem Auftritt]$_{TOP}$ [JEDem\ Kandidaten]$_{FOC}$ t$_{TOP}$ zeigte
      since   she   [a picture of his appearance]$_{TOP}$ [every candidate]$_{FOC}$ t$_{TOP}$ showed
      'since she showed a picture of his appearance to every candidate'

Second, it is predicted that if the accusative argument in (18) is (clearly) not interpreted as a topic, reconstruction should be impossible. The context in (20) is intended to set up such a context. While judgments are subtle for these examples, and better ways need to be developed to ensure they have the relevant information structure properties, there is clearly a contrast between the two orders in (20a) and (20b), which confirms the initial plausibility of the analysis proposed here.[6]

(20) Was ist mit den Müttern? Wen glaubst du liebt jede Mutter? Das weiß ich nicht, aber ich
      bin sicher…
      What about the mothers? Who do you think every mother loves? I don't know, but I'm
      sure…   subject (TOPIC) » object (FOCUS)
   a. dass   [jeder Vater]$_i$ [seinen$_i$ Sohn]   liebt
      that   [every.NOM father]   [his.ACC son]   loves
      'that every father loves his son'   ✓ bound variable
   b. #dass   [seinen$_i$ Sohn]   [jeder Vater]$_i$ t$_{ACC}$ liebt,
      that   [his.ACC son]   [every.NOM father]   t$_{ACC}$ loves
      'that every father loves his son'   ???bound variable

The ScoT-based approach has interesting consequences not only for the theory of reconstruction but also for the distinction between A- and Ā-scrambling. Although there are various accounts of this distinction in the literature, the main difference in the reconstruction behavior has typically been stipulated. The difference between (2a) and (19), as well as the difference between (18) and (20) shows that a simple syntactic, that is, structural definition of A- vs. Ā-movement is not sufficient to explain the scope properties. Rather, the possibility vs. impossibility of syntactic reconstruction needs to be closely tied to information structure properties. It would, of course, be possible to redefine A- vs. Ā-movement via topic (or other information structure) properties. However, this would then still leave open the questions of why only Ā/topic scrambling reconstructs but A/non-topic scrambling does not (and it would not explain why A-movement in English does reconstruct). The ScoT approach, on the other hand, provides a uniform answer to all of these questions.

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[6]One complication is that it is fairly easy to make implicit accommodations to the context that will alter the information structure. For instance, (20b) would be entirely fine if the object is changed into a topic by the second speaker along the lines of "What about the mothers? Who do you think every mother loves? I don't know, but if we're talking about sons, I'm sure…" (see also Neeleman and van de Koot, 2008 for a discussion of the methodological hurdle of this topic-focus swap).

3 Conclusion

In this paper, I have argued that the distribution of reconstruction with scrambling is not deter-mined by a structural A/Ā distinction, but instead by economy considerations regulating interac-tions among LF, PF, and information structure (similar to Williams, 2003). More generally, whether reconstruction is possible or not is determined by a (soft) economy constraint, together with certain language specific properties, independently at work in the languages considered. The following table summarizes the relevant constraints:

Construction	Constraints
A-movement in English	ScoT, EPP (hard), DEP (soft)
Ā/topic-scrambling	ScoT (LF and information structure)
A/non-topic-scrambling	ScoT; semantic reconstruction
Scope rigidity	ScoT; independent PF properties of a lan-guage (±scrambling…)

Further theoretical consequences of the account provided in this paper are that i) A-movement leaves a trace; ii) syntactic and semantic reconstruction exist; and iii) the A/Ā-distinction for scrambling may be dispensable in favor of an information structure characterization of the con-figuration.

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