More on (the lack of) reconstruction in *tough*-constructions

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1. *Tough*-constructions and reconstruction

Tough-constructions (TCs) have long been, and continue to be, a controversial topic, with even fundamental aspects of their syntax remaining under dispute. One question that has figured prominently in the literature is whether the *tough*-subject—*Alex* in (1)—is able to reconstruct into the embedded gap. This question is of interest because different views about the relation between the *tough*-subject and the embedded gap—which we will refer to as the '*tough*-dependency'—give rise to different predictions. If the *tough*-dependency is (long) movement (e.g., Rosenbaum 1967, Postal 1971, Brody 1993, Hicks 2009, Hartman 2012, Longenbaugh 2015, 2016, 2017), reconstruction should be possible, all else equal. By contrast, if the *tough*-subject is base-generated in the matrix clause and the relationship with the embedded gap is one of predication (e.g., Ross 1967, Akmajian 1972, Chomsky 1977, Lasnik and Fiengo 1974, Rezac 2006, Keine and Poole 2017, Salzmann 2017, Gluckman 2018), reconstruction is predicted to be impossible.

(1) [Alex] is tough to please ___ .

The empirical facts about reconstruction in TCs have been the subject of much debate, with some recent studies arguing for the possibility of reconstruction (e.g., Hicks 2009, Pesetsky 2013, Longenbaugh 2015, 2017) and others against it (e.g., Rezac 2006, Fleisher 2013). We will start by briefly reviewing quantifier scope and pronominal binding.

It has long been recognized that scope reconstruction is impossible in TCs (2a) (Postal 1974, Epstein 1989, Rezac 2006, Fleisher 2013). In this respect, TCs differ markedly from raising, which allows scope reconstruction (2b).

(2) a. [Few girls] would be difficult for Jim to talk to ___. (Postal 1974:224)
(*few* ≫ *difficult; *difficult* ≫ *few*)

b. [Few girls] are likely ___ to be sick. (*few* ≫ *likely; likely* ≫ *few*)

Fleisher (2013:324–325) shows that scope reconstruction in TCs is likewise blocked for *how many*-questions. Evidence from quantifier scope, then, suggests that no reconstruction is possible. Interestingly, at first glance, binding connectivity appears to suggest the opposite conclusion. Based on examples like (3), Pesetsky (1987, 2013) and Hicks (2009) argue that it is possible for the *tough*-subject to reconstruct for binding (though see Rezac 2004:189–190).

(3) [This aspect of **herself**$_1$] is easy for **Mary**$_1$ to criticize ___. (Pesetsky 2013:146)

In response to this argument, Bruening (2012) points out that the relevant examples all involve *picture*-NPs, which are well-known to allow binding even in the absence of c–command, as shown in (4), where *herself* is not c–commanded by its antecedent even if reconstruction were to take place.

(4) [This aspect of **herself**$_1$] was tough for [**Sarah Palin's**$_1$ autobiography] to present ___ in a good light. (Bruening 2012:ex. (11))

If no c–command is required for such (presumably logophoric) binding, (3) does not provide an argument for reconstruction being possible in TCs. We add to Bruening's argument the observation that if the binder is not a logophoric center, reconstruction for binding is indeed impossible in TCs (5). This indicates that genuine reconstruction for binding (as opposed to logophoric binding) is impossible in TCs, converging with the evidence from scope.[1,2]

[1] Pesetsky (2013) also shows that there is no Condition C connectivity with the embedded gap in TCs. This fact does not, however, indicate whether reconstruction is possible or not, only that it is not obligatory.

[2] There is some disagreement in the literature concerning idiom chunks in the *tough*-subject; see Lasnik and Fiengo (1974) and Hicks (2009). For reasons of space, we do not address this issue here.

(5) a. It was hard for Alex to tell **every farmer**$_1$ [the bad news about **her**$_1$ goat].

b. *[The bad news about **her**$_1$ goat] was hard for Alex to tell **every farmer**$_1$ ___ .

This squib contributes to the debate about reconstruction in TCs by presenting three new arguments that the *tough*-subject cannot reconstruct into the embedded gap. The key claim is that the *tough*-subject is able to undergo SHORT RECONSTRUCTION within the matrix clause, which can give the appearance of reconstruction into the embedded gap. Short reconstruction of the *tough*-subject, however, does not involve the *tough*-dependency itself and thus is possible on both the base-generation and long-movement accounts of TCs. We will show that the kind of reconstruction relevant to the syntax of TCs, namely LONG RECONSTRUCTION into the embedded gap, is indeed impossible. It is important, then, to recognize that "reconstruction in TCs" henceforth means long reconstruction of the *tough*-subject. The first two arguments examine, respectively, two classes of examples that Longenbaugh (2015, 2017) claims involve long reconstruction. We argue that upon closer scrutiny, these classes of examples actually involve short reconstruction. Moreover, we argue that the second class, which involves comparative quantifiers, in fact offers novel evidence against long reconstruction. The third argument involves special syntactic positions that independently require reconstruction, which are crucially unable to host *tough*-gaps. The picture to emerge is thus remarkably cohesive in that a considerable range of disparate evidence converges on the anti-reconstruction property of the *tough*-dependency. We conclude by considering some of the theoretical consequences of this property and contend that, all else equal, the available evidence favors the base-generation account of TCs over the long-movement account.

2. Short vs. long reconstruction

Longenbaugh (2015, 2017) raises several intriguing examples of TCs that appear to allow for reconstructed readings, calling into question the generalization that there is no reconstruction

in TCs. We divide these examples into two classes, discussing them over this section and the next section, respectively.

The first class of examples is given in (6).[3] The *tough*-subjects in (6) all have nonspecific readings. For example, (6a) has an interpretation where for any two books, it is hard for Mary to write those two books. This reading is nonspecific in that it is not about specific books. In this respect, the sentences in (6) have an interpretation that resembles the (most salient) interpretation of their respective expletive counterparts in (7).

(6) a. [Two books] might be hard for Mary to write ___ .
b. [A joke about Sally] will only be easy to convince SUE to tell ___ .
c. [A picture of Bill] should be easy to persuade any artist to draw ___ .
d. [Three questions] would be easy to answer ___ in ten minutes.

(Longenbaugh 2017:20)

(7) a. It might be hard for Mary to write [two books].
b. It will only be easy to convince SUE to tell [a joke about Sally].
c. It should be easy to persuade any artist to draw [a picture of Bill].
d. It would be easy to answer [three questions] in ten minutes.

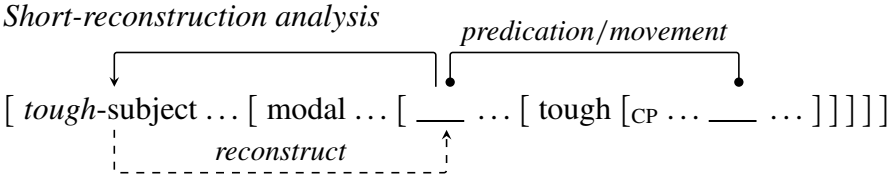
Longenbaugh claims that the nonspecific readings in (6) are the result of reconstructing the *tough*-subject into the embedded gap; that is, LONG RECONSTRUCTION of the *tough*-subject.

However, while the nonspecific readings in (6) do require that the *tough*-subject take scope below a modal operator (to achieve a *de dicto* interpretation), that modal operator does not necessarily need to be the *tough*-predicate. Crucially, all of the examples in this class contain an independent modal operator in the matrix clause. Most of them have an overt modal, as in (6); the others involve genericity, which we discuss in the next section. We propose that the nonspecific readings in (6) are generated by SHORT RECONSTRUCTION

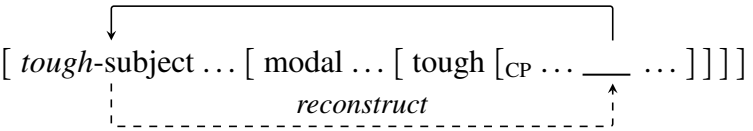
[3] The examples in the first class are all given in Longenbaugh (2017:18–21). In that paper, he also raises several examples of purported reconstruction for binding in TCs, but we hold that these examples fall under Bruening's (2012) argument about *picture*-NPs, discussed above.

of the *tough*-subject into a lower position within the matrix clause, below a matrix modal operator (e.g., into matrix [Spec, *v*P]). Thus, in (6), there is no long reconstruction of the *tough*-subject, contrary to first appearance. This analysis is schematized in (8a), and the long-reconstruction analysis in (8b).

(8) a. *Short-reconstruction analysis*



b. *Long-reconstruction analysis*



What differentiates the two analyses in (8)? On the short-reconstruction analysis, the nonspecific reading depends on the presence of a matrix modal operator, which predicts that removing the modals in (6) should bleed the nonspecific readings. This prediction is borne out, as shown in (9). The examples in (9) lack a nonspecific reading, as predicted.

(9) a. [Two books] were hard for Mary to write ___ . *cf. (6)*

b. [A joke about Sally] was only easy to convince SUE to tell ___ .

c. [A picture of Bill] was easy to persuade any artist to draw ___ .

d. [Three questions] were easy to answer ___ in ten minutes.

It should be noted that in the presence of a modal, it is generally difficult to differentiate between the short- and long-reconstruction analyses on the basis of the truth conditions that they produce. Consider the TC in (10) on the nonspecific reading. For concreteness, here and throughout, we assume a simplified version of the semantics of *tough*-predicates from Keine and Poole (2017).[4] On the short-reconstruction analysis, (10) has the interpretation

[4] Specifically, we treat the particular property associated with the *tough*-predicate (e.g., easiness and toughness) as a restriction on the modal base. On Keine and Poole's (2017) semantics, this is treated as a property of the embedded proposition. For instance, on their analysis, (10a) would have the interpretation

in (10a); it describes a situation in which you have evidence that there are two books that are difficult to read (e.g., from a reading list), but you do not known which ones. On the long-reconstruction analysis, (10) has the interpretation in (10b); it describes a situation in which any two books from the domain are difficult to read. The difference between the two interpretations is that in (10b), any pair of books is difficult to read in every world, whereas in (10a), only one pair of books is difficult to read, but per world.

(10) [Two books] must be hard to read ___ .

a. *Interpretation on short-reconstruction analysis*
$\forall w \in \text{Acc}_{\text{MUST}}[\exists x\,[x \text{ are books} \wedge \#x = 2 \wedge \forall w' \in \text{Acc}_{\text{HARD}}[\,\text{PRO}_{\text{ARB}} \text{ read } x \text{ in } w'\,]]]$

b. *Interpretation on long-reconstruction analysis*
$\forall w \in \text{Acc}_{\text{MUST}}[\forall w' \in \text{Acc}_{\text{HARD}}[\exists x\,[x \text{ are books} \wedge \#x = 2 \wedge \text{PRO}_{\text{ARB}} \text{ read } x \text{ in } w'\,]]]$

While we believe that (10a) more accurately represents the meaning of (10), this claim cannot be easily tested. Differentiating between (10a) and (10b) requires constructing a situation in which one is true and the other is false, and then judging whether or not (10) is true in that situation. The complication is that (10a) is *stronger* than (10b). Thus, any situation that verifies (10a) also verifies (10b). It is unclear to us how to construct a judgeable instance of the reverse, a situation that verifies (10b) but not (10a), given the double layers of modality.

In sum, both the short-reconstruction and long-reconstruction analyses can in principle generate nonspecific readings of the *tough*-subjects in (6). Differentiating these two analyses on the basis of their truth conditions is not obvious. However, the fact that removing the matrix modal bleeds the nonspecific reading, as was shown above in (9), favors the short-reconstruction analysis, in which there is no reconstruction of the *tough*-subject into the

in (i.a) (where j is the judge). This simplification does not affect the arguments in this paper concerning reconstruction of the *tough*-subject.

(i) a. $\forall w \in \text{Acc}_{\text{MUST}}[\exists x\,[x \text{ are books} \wedge \#x = 2 \wedge \forall \langle w', j' \rangle \in \text{Acc}_{w,j}[\text{HARD}_{w',j'}(\lambda w''.\ j' \text{ reads } x \text{ in } w'')]]]$

b. $\text{Acc}_{w,x} = \{\langle w', y \rangle : \text{it is compatible with what } x \text{ believes in } w \text{ for } x \text{ to be } y \text{ in } w'\}$

c. $\text{HARD}_{w,j}(p) \Leftrightarrow p$ is hard to j in w

embedded gap. Therefore, this first class of examples in (6) raised by Longenbaugh (2017) is not evidence for long reconstruction in TCs.

3. Comparative quantifiers

The second class of examples from Longenbaugh involves comparative quantifiers.[5] Like the first class of examples, TCs that have comparative quantifiers as their subject have a nonspecific reading. For example, (11a) has an interpretation according to which for any group of less than four professors, it is easy to talk to that group, which resembles the (most salient) interpretation of the corresponding expletive construction in (11b).

(11) a. [Fewer than four professors] are easy to talk to ___ (at once).

b. It is easy to talk to [fewer than four professors] (at once).

Longenbaugh claims that the nonspecific reading of (11a) involves reconstruction of the *tough*-subject into the embedded gap. However, a truly long-reconstructed reading of a comparative quantifier would involve the interpretation of the modified numeral, not specificity (Heim 2000, Hackl 2001, Nouwen 2010). The relevant contrast is illustrated by (12), whose ambiguity is the result of the comparative quantifier *fewer than six*—in particular its maximality operator, discussed immediately below—scoping above or below *required*.

(12) Alex is required to read **fewer than six books**.

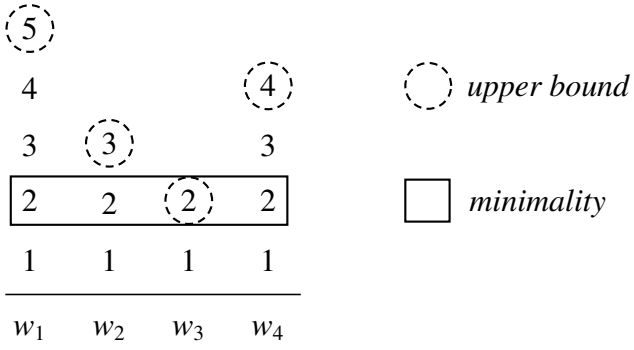
a. *Upper-bound reading* (*require* ≫ <6)
$\forall w \in \text{Acc}_{\text{REQUIRE}}\,[\,\text{MAX}\{d : \text{Alex reads } d\text{-many books in } w\} < 6\,]$
≈ Alex isn't allowed to read more than 5 books.

b. *Minimality reading* (<6 ≫ *require*)
$\text{MAX}\{d : \forall w \in \text{Acc}_{\text{REQUIRE}}\,[\,\text{Alex reads } d\text{-many books in } w\,]\} < 6$
≈ The minimal number of books that Alex is required to read is less than 6 (but he is free to read more).

[5] This kind of example is raised in Longenbaugh (2015), but is not discussed in Longenbaugh (2016, 2017).

The difference between (12a) and (12b) is due to the maximality operator (MAX) associated with the comparative quantifier. Consider the simple model in (13), where (i) $w_1 \ldots w_4$ are worlds in which the requirements are met and (ii) the numbers indicate the amount of books Alex read in that world. (Crucially, if Alex read five books, they also read four books, etc.) When it scopes below *require*, MAX picks out the maximum amount of books that Alex read *within each individual world*, indicated in (13) with dotted circles. On this reading, the amount of books can vary across worlds, but it will never be higher than five, thereby conveying an upper-bound. When it scopes above *require*, MAX picks out the maximum amount of books read by Alex that holds *across all the worlds*, indicated in (13) with the solid square. This amount will be the maximum amount of books in the world(s) where Alex reads the fewest books, thereby conveying a minimum.

(13)



As such, long reconstruction of the *tough*-subject in (11a) should be diagnosed by the existence of an upper-bound reading with respect to the *tough*-predicate.[6] Crucially, (11) does

[6] If there is a matrix modal, short reconstruction of the *tough*-subject produces an upper-bound reading with respect to the modal. For example, (i.a) with a modal has an upper-bound reading, while (i.b) without a modal does not. It is unclear to us how to differentiate the modal upper-bound reading from the *tough*-predicate upper-bound reading, so we limit our attention to examples without a matrix modal.

(i) a. Exactly four books would be easy to fit on the shelf.
b. Exactly four books are easy to fit on the shelf.

not have an upper-bound reading (14a), only a minimality reading (14b).[7] (Note that the logical structures in (14) are isomorphic to those in (12).)

(14) a. *Upper-bound reading* (*easy* ≫ <4)

$*\,\forall w \in \text{Acc}_{\text{EASY}}\,[\,\text{MAX}\{d : \text{PRO}_{\text{ARB}}\text{ talks to } d\text{-many professors in } w\} < 4\,]$

b. *Minimality reading* (<4 ≫ *easy*)

$\text{MAX}\{d : \forall w \in \text{Acc}_{\text{EASY}}\,[\,\text{PRO}_{\text{ARB}}\text{ talks to } d\text{-many professors in } w\,]\} < 4$

To better appreciate the absence of upper-bound readings in TCs, consider (15), in which the context is set up in a way that requires the upper-bound reading. In this context, the expletive construction (15a) is felicitous, but the TC (15b) is not. This demonstrates that while an upper-bound reading is available in expletive constructions, it is unavailable in TCs.

(15) *Context:* Jane is worried about a test that she must take. If she makes fewer than 10 mistakes on the test, she will pass. Otherwise, she will fail. Alex wants to console Jane by saying that it is fairly easy to make fewer than 10 mistakes on this test, so she shouldn't worry. Alex says:

a. It is easy to make [fewer than 10 mistakes] on this test. (*easy* ≫ <10)

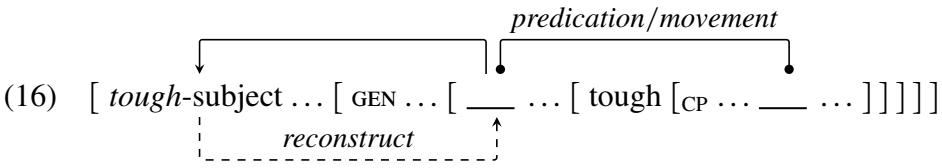
b. #[Fewer than 10 mistakes] are easy to make ___ on this test. (**easy* ≫ <10)

Crucially, if long reconstruction of the comparative quantifier were possible in TCs, then (15b) would be felicitous, like (15a). This indicates that such reconstruction is impossible.

If long reconstruction of comparative quantifiers must be blocked, then what produces the nonspecific reading in (11a)? Extending the analysis from the previous section, we propose that this reading is the result of short reconstruction of the *tough*-subject below a matrix modal operator, namely a generic operator (GEN), as schematized in (16).

[7] Technically, on Keine and Poole's (2017) semantics, and base-generation analyses more generally, the existential quantification over individuals encoded in the modified numerals would also take scope above the *tough*-predicate, as in (i). (14b) simplifies this aspect of the meaning for the sake of comparison with (14a).

(i) $\text{MAX}\{d : \exists x[\#x = d \wedge x\text{ are professors} \wedge \forall w \in \text{Acc}_{\text{EASY}}\,[\,\text{PRO}_{\text{ARB}}\text{ talks to } x\text{ in } w\,]]\} < 4$



It is well-known that TCs with indefinite subjects are interpreted generically, as in '*A cheap apartment is hard to find in NYC*' (Postal 1971:29, Lasnik and Fiengo 1974:544–546). It has furthermore been noted by Fox and Sauerland (1995) and Lohndal (2010) that genericity may give rise to so-called "scope illusions". We propose that the nonspecific reading of (11a) is one such illusion. Being a generic sentence, (11a) comprises an additional layer of modality that quantifies over situations, in the form of GEN (e.g., Heim 1982, Wilkinson 1991, Chierchia 1995, Krifka et al. 1995): every relevant situation is a situation that contains fewer than four professors such that it is easy to talk to these professors. The generic operator allows *fewer than four professors* to pick out different individuals in every situation quantified over.[8] The nonspecific interpretation thus follows from short reconstruction and the semantics of genericity, not from long reconstruction into the embedded gap.

Independent evidence for this analysis comes from anaphora, pointed out to us by Angelika Kratzer (p.c.). On a generic interpretation, *fewer than four professors* cannot antecede a pronoun (17a), as expected. If genericity is taken out of the picture, for example, by forcing an episodic interpretation, then anaphoric reference becomes possible and the nonspecific reading disappears (17b).

(17) a. *Generic*
#[Fewer than four professors] are easy to talk to. **They**'re sitting over there.

b. *Episodic*
[Fewer than four professors] were easy to talk to at the luncheon this morning. **They**'re sitting over there.

[8] This raises the question of whether the GEN operator can produce an upper-bound reading, since it quantifies over situations. While this does appear to be possible (e.g., *Generally, Alex reads fewer than four books in the summer*), space limitations preclude discussion (though see fn. 6). What is crucial for reconstruction in TCs is that the upper-bound reading *with respect to the tough-predicate* is absent; this is what renders (15b) infelicitous in the given context.

In sum, not only do comparative quantifiers not provide evidence for long reconstruction in TCs, they in fact constitute new evidence against it.

4. Property positions

Poole (2017, 2019) observes that when a DP moves from a syntactic position requiring a property-denoting DP (henceforth, 'property position'), the DP must reconstruct into that position. This reconstruction requirement is illustrated in (18) for one such position: the color term of a change-of-color verb. In (18b), only narrow scope of *how many* with respect to *should* is possible. (18c) further shows that QR cannot target property positions; assuming that QR cannot reconstruct (as it would render it vacuous), the reconstruction requirement is what blocks QR.

(18) a. Alex painted the house **magenta**.

b. [**How many colors**] should Alex paint the house ___ ?
(**how many* ≫ *should; should* ≫ *how many*)

c. A (#different) contractor painted the house **every color**.
(*a* ≫ *every; *every* ≫ *a*)

The source of this particular restriction need not concern us here; see Poole (2017, 2019) for a proposal. What matters for present purposes is that property positions offer a new domain in which reconstruction in TCs may be assessed. If the *tough*-subject can reconstruct, then it should be possible to form a TC on a property position. Crucially, this prediction is not borne out, as demonstrated in (19b); a TC cannot be formed on a property position.

(19) a. It is easy to paint the house [this color / green].

b. *[This color / green] is easy to paint the house ___ .

The examples in (20) and (21) show this same restriction for two other property positions: the pivot of an existential construction (20) and a predicate nominal (21).

(20) a. It was easy for there to be [five books] on the table.

b. *[Five books] were easy for there to be ___ on the table.

(21) a. It was tough for Alex to become [a teacher].

b. *[A teacher] was tough for Alex to become ___.

Therefore, property positions provide a novel argument supporting the claim that, in TCs, the *tough*-subject cannot reconstruct into the embedded gap.

5. Consequences for the syntax of TCs

We have presented three novel arguments that the *tough*-dependency in TCs does not allow reconstruction; that is, the *tough*-subject cannot long reconstruct into the embedded gap. Two of these arguments involved reevaluating claims in the literature that such reconstruction is possible. We argued that these cases actually involve short reconstruction within the matrix clause, and thus they are independent of the *tough*-dependency. These findings contribute to our empirical understanding of TCs, as they reconcile observations in the literature that otherwise appear incompatible. Methodologically, these findings also highlight the need to be careful that tests for reconstruction target the intended reconstruction site.

The anti-reconstruction property of the *tough*-dependency has various consequences for our understanding of the syntax of TCs. As mentioned in section 1, there are two predominant views about the *tough*-dependency. On the long-movement approach, the dependency is one of movement. On the base-generation approach, the dependency is indirect: the *tough*-subject is base-generated in the matrix clause and a null operator $\overline{\text{A}}$-moves to the edge of the embedded clause, associating with the *tough*-subject via the semantics. The empirical conclusions reached above bear on this theoretical division. On a base-generation analysis, because there is no movement out of the embedded clause, it follows immediately that there can be no reconstruction. Put differently, this approach derives the lack of reconstruction from the basic syntax that it postulates for TCs. It provides

an explanation for why reconstruction is impossible in TCs. On a long-movement analysis, though, there is no principled reason to expect reconstruction to be blocked, especially since both A-movement and $\overline{\text{A}}$-movement are independently able to reconstruct in English (see also Fleisher 2013). Some additional stipulation(s) or constraint(s) is needed to explicitly block reconstruction in the case of TCs.[9]

Therefore, the base-generation analysis provides a more parsimonious account of the lack of (long) reconstruction in TCs than the long-movement analysis. Moreover, on the base-generation account, anti-reconstruction in TCs parallels similar bans on reconstruction in other null-operator constructions, in particular parasitic gaps (Nissenbaum 1998, 2000) and gapped-degree phrases (Nissenbaum and Schwarz 2011). As such, anti-reconstruction in TCs falls out as one analytically unremarkable instance of a larger class of anti-reconstruction effects. This result contributes towards deducing the properties of TCs from general syntactic and semantic principles.

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[9] Fleisher (2013) argues that the long-movement approach can be reconciled with anti-reconstruction if one adopts Hicks' (2009) smuggling analysis of TCs. The argument is as follows: (i) the complex null-operator structure of the smuggling analysis resembles Boeckx's (2003) stranding analysis of resumptive pronouns; (ii) in many languages, the antecedents of resumptive pronouns must be D-linked; (iii) weak islands generally only allow extraction of D-linked elements; (iv) thus, Boeckx's (2003) 'big DP' structure for resumptive pronouns and—by extension—Hicks' (2009) complex null-operator structure erect a weak island (which, on standard assumptions, would block reconstruction). There are two arguments against this proposal: First, if the complex null-operator is a weak island and only D-linked elements may be extracted from it, this incorrectly predicts that the *tough*-subject needs to be D-linked (e.g., '*Who is easy to please?*'). Second, reconstruction with resumptive pronouns is widely attested, as Boeckx (2003:156) himself notes. Such reconstruction is found in, e.g., Arabic, Hebrew, Scots Gaelic, and Spanish (see Sichel 2014:661). Therefore, a smuggling analysis faces the same problem that a standard long-movement analysis does: it must invoke an additional stipulation or constraint to block reconstruction of the *tough*-subject.

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