The two predicates *tough*

Introduction: Recent investigations of *tough*-movement (TM) have revealed that the presence of an intervening PP (see (1), (2)) or adverb (see (3)) between the *tough*-movement predicate (TMP) and its infinitival argument blocks TM (Hartman 2009; Bruening 2014; Keine & Poole (K&P) 2015). Hartman treats PP intervention as an instance of *defective intervention* (Chomsky 2000): matrix PP arguments block the A-movement step he assumes is involved in TM, as in, e.g., Romance A-raising. K&P instead derive (1-3) via a type-theoretic approach that blocks TM past all intervening adjuncts. Both accounts assume PPs universally intervene and must treat grammatical TM past *for*+DP sequences as involving the interpretation of these sequences as the complementizer+subject of a *for-to* infinitive, not a matrix PP argument (see (4)).

(1) a. It was tough on me to give up sugar.
　　 b. *Sugar was tough on me to give up.
　　　　 (Hartman 2009)

(3) a. It was hard yesterday to visit Mary.
　　 b. *Mary was hard yesterday to visit.
　　　　 (Breuning 2014)

(2) a. It was hard [for John] [for Mary to visit Bill]
　　 b. *Bill was hard [for John] [for Mary to visit]
　　　　 (Chomsky 1973)

(4) a. Mary is hard [$_{CP}$ for me to talk to]
　　 b. *Mary is hard [for me] [$_{CP}$ PRO to talk to]

I show that the generalization that TM cannot cross an intervening matrix PP is incorrect, casting doubt on extant treatments of (1-3). To account for these data, I argue that TMPs are ambiguous between a Super-Equi (SE) reading akin to *damaging* and a use as an ability predicate akin to *be able to* (cf. Lasnik & Fiengo 1974), with TM precluded with the SE reading. Assuming that SE predicates involve obligatory infinitival extraposition (Landau 2001), I subsume (1-3) under a ban on TM out of extraposed infinitives.

Not all PPs intervene: First, TM can cross unambiguous matrix PPs (see (5)) and even DPs (see (6)).

(5) a. It was foolish of you to say that.
　　 b. That was foolish of you to say.
　　　　 (cf. discussion in Stowell 1991)

(6) a. It irritated me to have to read that.
　　 b. ?That book irritated me to have to read.
　　　　 (Pesetsky 1995)

Next, contra Hartman, TM past a *for*+DP sequence does not involve interpreting this sequence as the complementizer+subject of a *for-to* infinitive. *for*+DPs under TM behave like matrix PPs and unlike complementizer+subject sequences: ellipsis/infinitive-omission can strand the *for*+DP sequence under TM but not with *for-to* infinitives (see (7)); the subject of a *for-to* infinitive but not the associate to *for* under TM (see (8)) can bear an initial *not* (Postal 1974 shows only subject DPs can bear an initial *not*); the possibility for partial control is preserved under TM (see (9); Rezac 2004); a quantificational associate to *for* takes wide-scope with respect to TMPs under TM, an impossibility for the subject of a *for-to* infinitive (see (10)).

(7) Ellipsis
　　 a. Mary wanted [for Sue to win] but Bill needed [for her *(to)]
　　 b. Cucumbers are easy for Sue to grow but they're hard for Bill (to)

(8) Initial *not*
　　 a. ?It would be difficult for not many students to accept the offer.
　　 b. *The offer would be difficult for not many students to accept.

(9) Partial Control
　　 a. It will be tough [for Mary] [PRO to meet at that café]
　　 b. That café will be tough for Mary to meet at.

(10) Scope effects
　　 a. The Bar Exam is hard for every lawyer to pass
　　 b. ✓ *every >> hard*; ??*hard >> every*

In fact, configurations where the *for*+DP sequence is unambiguously the complementizer+subject of a *for-to* infinitive reject TM. (11) and (12) involve non-thematic associates to *for* which must be interpreted as surface subjects. Minimal pairs show the obligatory *for-to* infinitive construal is the key factor in blocking TM.

(11) Expletive-*there* (Lasnik & Fiengo 1974; a.o.)
　　 a. It would be easy for there to be a party in the park.
　　 b. *The park would be easy for there to be a party in.
　　 c. The park would be easy to hold a party in.

(12) Idiom chunks
　　 a. It's easy for the shit to hit the fan in situations like this.
　　 b. *Situations like this are easy for the shit to hit the fan in.
　　 c. Situations like this are hard to be in.

I conclude that PPs do not, in general, intervene (see (5)); *for*+DP sequences under TM are interpreted as matrix PPs and not complementizer+subject sequences of *for-to* infinitives (see 7-11), which TM appears to be precluded out of (see 11, 12). This undermines the key empirical observation on which Hartman's and K&P's accounts of (1-3) are based, suggesting a new approach is necessary.

The two *toughs*: To account for data like in (1-3), I propose that bivalent uses of TMPs, which take a PP and an infinitive as their arguments, are two ways semantically ambiguous. The first reading attributes the action or state described in the infinitive as *damaging* to the PP (see (13-a)). This reading i) permits Super-Equi (see (13-b)), ii) is obligatory in the presence of an *on*-PP argument, iii) is in some cases possible with *for*-PP arguments (see (13-c)), and iv) is readily compatible with *for-to* infinitives (see (13-c)).

(13)   a.   It's hard on John [PRO to be yelled at by Sue] ≈ It's damaging to John to be yelled at by Sue
        b. $Mary_1$ knows it's tough [on the environment] [PRO_1 to leave her_1 lights on]
        c.   It was easy [on/?for the rich] [for the poor to do the work]

The second bivalent reading of *tough* takes an agentive causer PP and describes the ease with which it is able to carry out or cause the action/event in the infinitive. That this reading exists apart from the *damaging* reading is on display in (14) (the infinitive is preposed to force a bivalent control reading), where it is implausible to assume that ending world hunger would damage UNICEF. This reading is i) incompatible with Super-Equi (see (15)), suggesting that we are dealing with different argument structure (see Landau 2001), and ii) severely degraded with *for-to* infinitives (see (16)).

(14)   [PRO_1 to end starvation] is tough [for $UNICEF_1$]   (15) $Mary_1$ knows it's tough for $John_2$ [PRO_1 to talk
        =UNICEF has trouble ending world hunger   to $herself_1$ in public]
        ≠The end of world hunger damages UNICEF   ≠ John has trouble making Mary talk to herself

(16)   It's tough for the Professor [for the students to pass the exam]
        =??The professor has difficulty effectuating student success

Analysis: TM is precluded with the *damaging* reading. The ungrammaticality of (1), which involves an *on*-PP and hence the *damaging* reading, follows. Example (2) likewise instantiates the *damaging* reading: this is intuitively clear and confirmed empirically by the fact that only the *damaging* reading is compatible with a *for-to* infinitive (cf. (13-c), (16-c)), which (2) unambiguously contains. To derive the incompatibility of TM with the *damaging* reading, I follow Landau (2001) in treating predicates that license Super-Equi as involving an infinitive that is first merged structurally above the PP argument and then obligatorily extraposed to the right edge of vP/VP (Landau 2001) for phonological reasons. This analysis makes it possible to unify the PP intervention examples in (1) and (2) with Bruening's adverbial intervention cases, which also involve extraposition of the infinitive, under the generalization that TM is impossible with extraposed infinitives.

(17)   *Sugar was [$_{vP}$ hard e_1 [on John]] [to give up]$_1$ (18)   *Mary was [$_{vP}$ hard e_1 yesterday] [to visit]$_1$

Under null operator approaches to TM (see discussion below), extraposition can simply be taken to interfere with the predication step that relates the derived infinitival predicate with the subject of the TMP. With approaches that derive predication via Agreement with the null operator at the left periphery of the infinitive (Rezac 2004), extraposition can be taken to move the infinitive outside the command domain of the Agreeing functional head, thus blocking predication and TM.

Outlook The apparent blocking effect of PPs was the strongest argument for improper-movement-based accounts of TM, whereby A′-movement to the left-periphery of the infinitive feeds an A-movement step into subject position of the TMP. This claim was always suspicious, given that English A-movement can ordinarily cross PPs, as in *John seems to Mary to be upset*, and is now untenable: TM can cross not only PPs (e.g. (5)) but also DPs (see (6)), which do block A-movement in English. This also removes the strongest argument that English exhibits defective intervention effects, suggesting Romance A-raising is the true outlier case. My proposal thus offers strong support for the null-operator analysis of TM: A′-movement of a null operator to the left periphery of the infinitive creates a derived predicate that is then predicated of the TMP subject. This analysis derives the expanded empirical picture without special mechanisms and captures TM's lack of weak-crossover effects (Lasnik & Stowell 1991) and reconstruction for scope and Condition C (Postal 1974).

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