

*Some things are not susceptible to thinking about**
The Historical Development of
tough-Complementation

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1 Introduction

The modern English **gapped** *tough*-construction (TC) (a.k.a. *object shift* or *complement object deletion*), illustrated in (1), manifests an array of difficult problems for generative syntactic analysis.

- (1) This road's safe to go 55 on. (from McCawley (1991:37))

Among the unsolved issues raised by the modern TC are:

- Should the modern TC be treated as a long-distance dependency construction like *wh*-movement or *topicalization*?¹
- How are TCs with *easy*-type adjectives related to (superficially) similar constructions with so-called *pleasure*-nouns (Flickinger and Nerbonne 1992) (illustrated in (2) or *too/enough* constructions (illustrated in (3) and (4)):²

*M. Liberman, 23 Apr 87 (McCawley 1991: 38)

¹See Calcagno (1999) for a long-distance dependency analysis of the modern TC. I assume that the dependency in the Old English TC was a bounded dependency (like the passive); see Wurff (1990), Demske-Neumann (1994). See Wurmbrand (1998) for arguments that modern German, Italian, and French TCs are A-type, bounded dependencies. See Abeillé *et al.* (1998) for a treatment of French bounded dependencies including the TC.

²I summarize here why I treat the TC independent of *pleasure*-nouns, *too*, and *enough*. Lasnik and Fiengo (1974) (also Chomsky (1981:309), Flickinger and Nerbonne (1992), among others) collapsed the *pleasure*-noun constructions (a.k.a. *subbinding* (Bouma *et al.* 1999:30)) with the TC. Jones (1983) argues that the TC and *pleasure*-noun constructions (what he calls “fused adnominal constructions”) are non-related on the basis of examples like (i) and (ii) in which the adnominal construction does not have a TC counterpart (Jones 1983:136):

- (i) This is a wicked principle on which to base your actions.

(2) “Roger, are the Chicago Bulls a good team to watch \emptyset play?” (Fox Trot, 4 Feb 91 quoted in McCawley (1991:37))

(3) “There are too many /t/’s to look at all of \emptyset ” (Haj Ross, 23 Apr 87 quoted in McCawley (1991:38))

(4) The football is soft enough to kick \emptyset . (Lasnik and Fiengo (1974:(10c)))

- What is the syntax of *tough*-complementation in sentences like (5)?

(5) The hard work is pleasant for the rich to do. (Chomsky 1973)

Two constituent analyses of *tough*-complementation are prominent in the literature. (6) illustrates the clausal analysis of *tough*-complementation. (7) illustrates the “bare” VP analysis of *tough*-complementation.

(6) The hard work is pleasant [_{CP} for_C [_S the rich to do]] (e.g. Gazdar *et al.* (1985), Hukari and Levine (1990))

(7) The hard work is pleasant [_{PP} for_P the rich] [_{VP} to do] (e.g. Bresnan (1971), Lasnik and Fiengo (1974), Brame (1979), Jacobson (1992))

(8) gives a third possible constituent analysis of *tough*-complementation:

(8) The hard work is pleasant [_{CP} for_C [_{NP} the rich] [_{VP} to do]] (e.g. Ginzburg and Sag (1999), Reinhart (1983:24) and Sag (1997))

(ii) *This principle is wicked to base your actions on.

The evidence given in Jones (1983) is persuasive and I follow him in distinguishing the *pleasure*-noun construction from the TC.

I also distinguish *too/enough* constructions from the TC. Hukari and Levine (1991) argue that it is natural to treat *too/enough* constructions in parallel fashion to the TC on the basis of the fact that extraction from finite clauses is not permitted for both and that multiple extraction is (Hukari and Levine 1991:123). However, there are some important differences between the two constructions; e.g. *too/enough* constructions allow an overt (resumptive) pronominal to alternate with a gap corresponding to the clausal subject (iii). Overt resumptive pronominals are not possible in the TC; see (iv) (examples from Cinque (1990:(171b), (169b)), see also Mulder and Dikken (1992:305)):

(iii) This book is too biased for us to adopt (?it).

(iv) The problem is not easy to solve (*it) immediately.

Cinque (1990:(174), (176)) also notes the contrast between (v) and (vi); i.e. *easy*-type adjectives in the TC don’t allow unslashed complements:

(v) *The problem is easy (for us to get through the exam).

(vi) The coach is too incompetent (for the team to win any games).

With respect to *tough*-complementation, some of the earliest generative analyses (e.g. Lees (1960), Postal (1971), Rosenbaum (1967)) adopted the constituent analysis of *tough*-complementation given in (6). Bresnan (1971), Chomsky (1973), and Lasnik and Fiengo (1974) provided some of the initial detailed argumentation for the (“bare”) VP analysis of *tough*-complementation illustrated in (7).

This paper endeavors to resolve the issue of *tough*-complementation. I argue that the complement of *pleasant* in (5) is accurately characterized by the constituent analysis in (8). The complement of *easy*-type adjectives in the TC is syntactically clausal and semantically propositional with certain semantic features (i.e. volitionality) of the embedded subject constrained by the selecting *easy*-type adjective.

The problem for an analysis which adopts (8), then, is to provide a non-stipulative account of why semantic properties of the complement clause’s subject are available to *easy*-type adjectives. I argue that independent developments in the history of English explain the mixed properties of the TC. The two factors which I argue played a role in the development of the mixed properties of the TC are given in (9) and (11):

- (9) *The evidence that easy-type adjectives took an optional PP argument became opaque.*

easy-type adjectives were lexically related to subject control adjectives like *eager* in Late Middle English/Early Modern English, as in (10) as a result of lexical borrowing.

- (10) He_i was too easy PRO_i to enter into any employment that might bring him into favour. (1715 Burnet *Own Times* I. 529)
- (11) *The complementizer use of for in tough-complementation arose on analogy with the analysis of for as a complementizer in other constructions in the late nineteenth century.*

In section 2 I give a synchronic analysis of Modern English *tough*-complementation. In section 3 I explain the mixed properties of *tough*-complementation historically.

2 Modern English *tough*-complementation

In this section I argue that the modern gapped *tough*-construction (TC) exhibits mixed properties. While *tough*-complementation is syntactically clausal, *easy*-type adjectives place semantic restrictions on the subject of their clausal complement. When *tough*-complementation is analyzed diachronically, as I do below, this combination of properties, clausal complement with a semantically restricted subject, satisfies a definition of *hybrid construction*; see Tabor (1994), Malouf (1998:227): the *syntactically* clausal status of *tough*-complementation is a late development in the history of English. In section 3 I show how the hybrid properties of the TC arose diachronically.

2.1 Towards a clausal syntax of modern *tough*-complementation

Much of my argument that *tough*-complementation is syntactically clausal is based on Hukari and Levine (1990) and Levine (1999). Evidence for the clausal analysis comes from (1) PP extraction and (2) parasitic gapping.

PP extraction NP extraction is possible following an unambiguous PP[for] as in (12).

(12) Who_j is it most pleasant for \emptyset_j for the poor to do hard work?

As Ross (1967:6.3.2) pointed out, a subject NP cannot be removed from a complement clause marked by the complementizer *for*.³

(13) It bothers me for her to wear that old fedora. (Ross 1967:(6.181))

(14) * The only girl it bothers me (for) to wear that old fedora is Annabelle. (Ross 1967:(6.182b))

NP extraction following *for* in the TC is unacceptable.

(15) * Who_j is hard work_i difficult for \emptyset_j to do \emptyset_i ?

(16) * Who_j is Kim_i easy for \emptyset_j to please \emptyset_i ?

(17) * Kim is the only board member_j the president said Sandy_i would be easy for \emptyset_j to convince \emptyset_i .

The unacceptability of (15-17) cannot be *solely* explained via a nested dependency constraint effect. As Levine (1999) points out, similar crossing patterns are acceptable with *cost* and *take*:

(18) How much_j will these cars_i **cost** \emptyset_j to recall \emptyset_i ?

(19) \$100,000 is about the amount of money_i this university_j would **cost** \emptyset_i to send your child to \emptyset_j

(20) How long_j will this car_i **take** \emptyset_j to drive \emptyset_i to San Diego?

³Ross (1967:6.3.2) formulated the following constraint (Ross 1967:(6.83)) on extraction following the complementizer *for*:

- (i) No element in the environment [for - VP] can be chopped.

This constraint in (i) allowed extractions following the preposition *for* (example from Bresnan (1977:(9b))):

- (ii) Who(m) will it be hardest for \emptyset to follow the lectures?

- (21) One full day is the length of time_i Kim said this car_j would **take** \emptyset_i to drive \emptyset_j to San Diego.

Also, note that adverb amelioration is possible with *tough*-complementation as in (22).

- (22) ? This is the type of guy who_j Kim_i is easy for, under normal circumstances, \emptyset_j to please \emptyset_i .
- (23) * This is the type of guy who_j Kim_i is easy for \emptyset_j to please \emptyset_i .

Parasitic gapping As Hukari and Levine (1990:133) and Levine (1999:15) note, sentences like (24) and (25) are acceptable for many speakers.

- (24) These books_i proved tough for critics of \emptyset_i to praise \emptyset_i sincerely. (Levine 1999:(29a))
- (25) That hypothesis_i was easy for opponents of \emptyset_i to poke holes in \emptyset_i . (Levine 1999:(29b))

Consider (26) and (27), where no gap is present to license the extraction of the complement of *for*:

- (26) *These books_i were tough for critics of \emptyset_i to praise Mr. McTavish. (Hukari and Levine 1990:(43))
- (27) *Which books_i did Kim say critics of \emptyset_i praised Mr. McTavish? (Hukari and Levine 1990:(43))

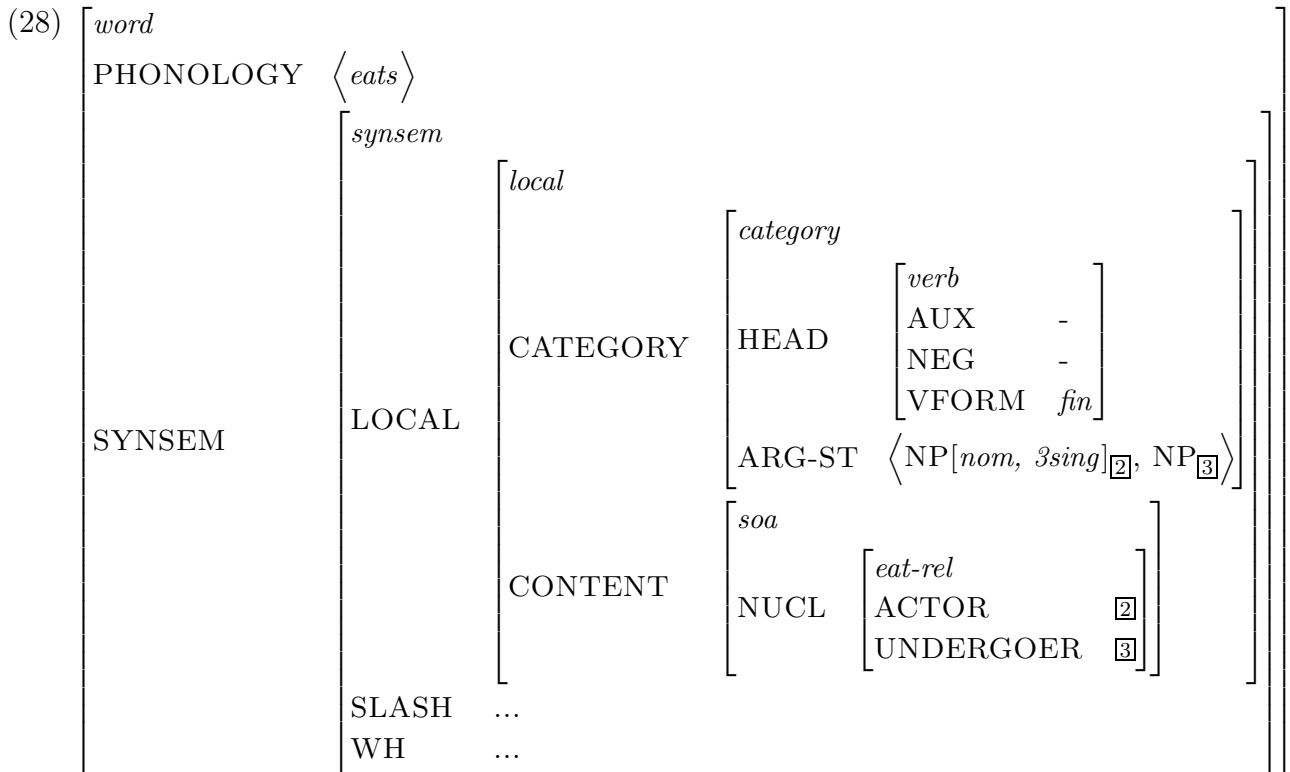
If *tough*-complementation in (24) and (25) were analyzed as in (7) (the bare VP analysis of *tough*-complementation), there would not be a licensing gap for [*critics of* \emptyset] or [*opponents of* \emptyset]. With a clausal analysis of *tough*-complementation, extraction from the embedded subject is possible because it is in the domain of *tough*-extraction (see Hukari and Levine (1990) and Levine (1999) for discussion).

2.2 The Syntax of *tough*-complementation

In this section I present a syntactic analysis of *tough*-complementation, modeling the empirical claim that *tough*-complementation is syntactically clausal. The version of Head-driven Phrase Structure Grammar (HPSG) I am adopting here, the version presented in Ginzburg and Sag (1999), provides an explicit formal analysis of the syntax of English non-finite clauses. I show that this theory can be easily extended to model *tough*-complementation.

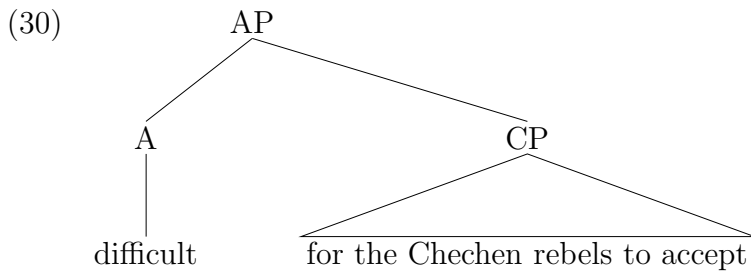
Theoretical Preliminaries HPSG is a sign-based theory of grammar. The version of HPSG I am adopting here takes the (technical) notion of *construction* as central: “a syntactic construction picks out a set of syntactic objects (the instances of the construction) by stipulating some formal conditions that these objects must satisfy and a procedure for determining the semantics for these objects” (Zwicky 1994:611).

All linguistic objects are modeled formally as a typed feature structure of some sort. Formally, a sign is pairing of a PHONOLOGY value and a SYNSEM value. As an illustration of what the formal apparatus looks like, (28) is (part of) the lexical entry for *eats*.



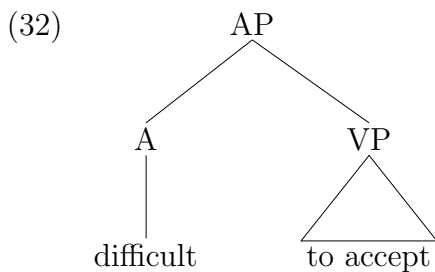
The Argument Structure of *easy*-type adjectives As I argued in Section 2.1 the argument structure of *easy*-type adjectives has two members in TC examples like (29) where *difficult* takes a CP complement.

(29) The stern disarmament terms attached to the Russian offer would be **difficult** for the Chechen rebels to accept. (01/09/95, New York Times, 0367)



difficult can also take a bare VP complement, as in:

(31) ... would be difficult to accept.

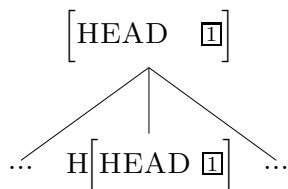


Rather than having two lexical entries for *easy*-type adjectives, one in which *difficult* takes a CP complement and the other in which it takes a VP complement, *easy*-type adjectives will have the argument structure in (33), where the complement is specified as [VFORM inf] (note that (33) is only a partial representation of the ARG-ST of *easy*-type adjectives):

(33) $\left[\text{ARG-ST} \left\langle \text{NP}, [\text{VFORM } \textit{inf}] \right\rangle \right]$

The feature VFORM corresponds to familiar classifications of verb forms (e.g. *fin(ite)*, *inf(initive)*, *part(iciple)*). Following Ginzburg and Sag (1999), the complementizer *for* and the auxiliary *to* (see Pullum (1982)) are both classified in the lexicon as [VFORM inf]. By giving *for* and *to* the same VFORM value, *to*-phrases and *for/to* phrases form a natural class that *easy*-type adjectives can select for. VFORM is a head feature so the Head Feature Principle (given in (34)) insures that a phrase carries the same VFORM value as its head.

(34) **Head Feature Principle**



Complementizer *for* I assume the lexeme entry in (35) for the complementizer *for* (from Ginzburg and Sag (1999)).

(35) *for* (MODERN ENGLISH)

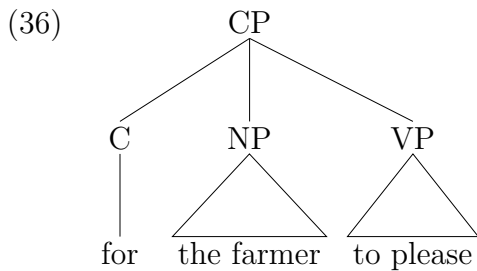
PHON	$\langle for \rangle$				
SS LOC	CAT	HEAD	$\left[\begin{array}{l} comp \\ VFORM \quad inf \end{array} \right]$		
		SUBJ	$\langle \rangle$		
		ARG-ST	$\langle \boxed{4} \left[\begin{array}{l} canon-ss \\ LOC \quad \boxed{2} \end{array} \right], \boxed{5} \left[\begin{array}{l} VFORM \quad inf \\ SUBJ \quad \langle [LOC \quad \boxed{2}] \rangle \\ CONT \quad \boxed{1} \end{array} \right] \rangle$		
		COMPS	$\langle \boxed{4}, \boxed{5} \rangle$		
	CONT	<i>proposition</i>		SOA	$\boxed{1}$

Note that *for* has two arguments on its ARG-ST list. The LOCAL value of the first argument is identified with the LOCAL value of the subject of the second argument of *for*⁴. The first argument must be a *canon(ical)-ss*; i.e. it cannot be a gap or an unexpressed pronominal. This accounts for the judgments in (15)-(17) while leaving the adverb-amelioration facts unexplained.

The second argument of *for* is an infinitival phrase whose CONT(ent) value is identified with the SOA (*state of affairs*) value of *for*. Essentially, *for/to* phrases are analyzed as propositions semantically which have as their semantic argument the CONT value of the *to*-phrase.

A key difference between this analysis of complementizer *for* (essentially that of Sag (1997)) and others (e.g. Haegeman (1994:117)) is that *for* has two complements. The complementizer *for* projects a Head-Complementizer phrase like that in (36) with a flat (ternary) structure:

⁴By sharing the LOCAL values of the first argument and the unexpressed subject of the second argument, the CATEGORY and CONTENT values of the two synsem-strucs are unified. By **only** identifying the LOCAL values, certain differences between the two arguments are allowed; e.g. the extraction information encoded in the SLASH feature is not shared between the two arguments.



Two pieces of evidence support this constituent analysis of *for/to* phrases.

First, the ternary analysis makes case assignment in *for/to* phrases just like ordinary object case assignment ("non-nominative subjects and nodes in COMP are the only constituents that can 'escape' from a clause" (Reinhart 1983:24)).

Second, note that adverbial material cannot be interposed between *for* and the hypothetical sentential constituent that follows *for* (see (37) and (38)). As Emonds (1976:196), Lightfoot (1979:197), Sag (1997:460) and others have noted, you generally are not able to interpose material between *for* and its NP complement (see (39a,b)).

(37) * Kim is easy for, in most circumstances, Bill to please.

(38) * We are eager for, in this circumstance, Bill to fail.

(39) a. * Mary arranged for, in St. Louis, John to rent a house cheap. (Emonds 1976:196)

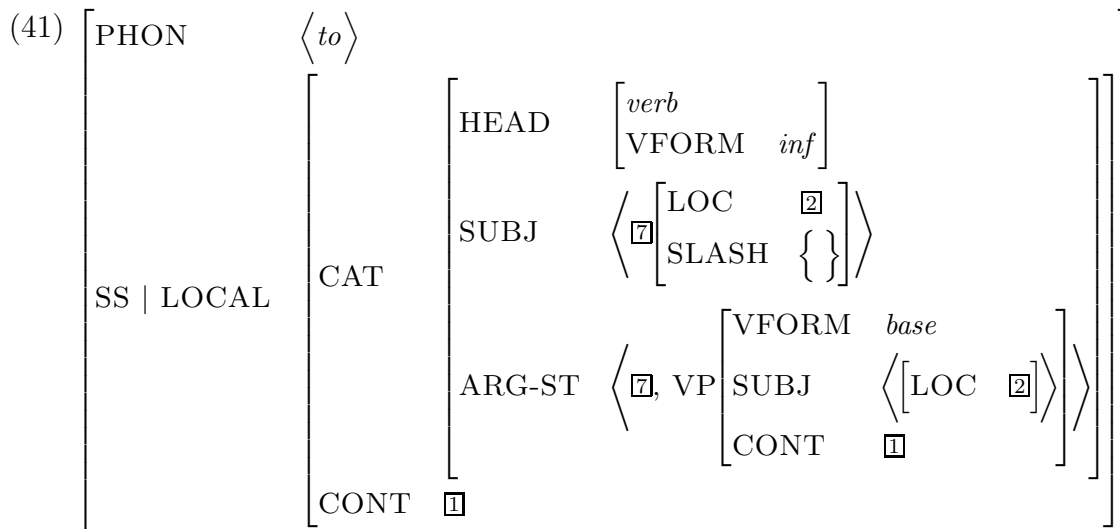
b. * He doesn't intend for, in these circumstances, us to be rehired. (Emonds 1976:196)

Contrast (40)

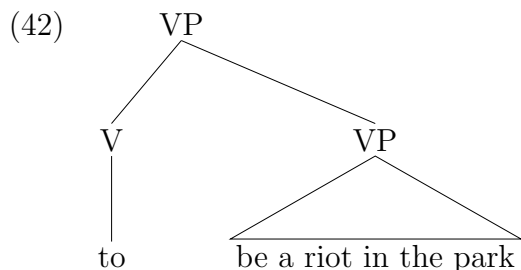
(40) Mary asked me if, in St. Louis, John could rent a house cheap (Emonds 1976:196)

(37) and (38) are ill-formed because the NP and VP complement to *for* appear to be right-shifted over the adverbial phrase *in most circumstances* as in * *persuaded in St. Louis John to rent a house cheap* (Sag 1997:460).

The auxiliary verb *to* I assume *to* is a [VFORM inf] auxiliary verb (see Pullum (1982) for early argumentation defending the auxiliary analysis of *to*). (41) (from Ginzburg and Sag (1999)) is the lexical entry for *to*.



Note that *to* is a subject raising verb- the LOCAL value of the unexpressed subject of its second argument is identical to the LOCAL value of its first argument. Another key thing to note is that the CONT value of *to* is identified with the CONT value of its VP complement. Hence, the CONT value of *to*, like that of its complement, is a *soa* rather than a *proposition*. Infinitival *to*-phrases like that in (42) can serve as a complement to a raising verb like *continue* (e.g. *There continues to be a riot in the park*).



With Ginzburg and Sag (1999) I assume that the auxiliary *to* can head a declarative clause. Here, I provide evidence that the *to* phrase in bare VP *tough*-complementation is a declarative clause with a referential, non-reflexive PRO subject (interpreted generically (Chung and Gamon 1996) as *for one* (Steedman 1996)).

(43) provides evidence that the unexpressed subject of the *to*-phrase in bare VP *tough*-complementation must be referential (i.e. carries a referential index in the sense of Pollard and Sag (1994)):

(43) *[to snow] would be impossible. (cf. [For it to snow] would be impossible.)

(44) [to please Kim] is impossible. (cf. [For one to please Kim] is impossible.)

This same restriction applies to all unexpressed subjects of *to*-phrases in non-raising contexts in English (Ginzburg and Sag 1999):

(45) a. To incite a riot in the park would be embarrassing.

b. *To be a riot in the park would be embarrassing.

(46) a. I want to incite a riot in the park.

b. *I want to be a riot in the park.

One key difference between *to* phrases in *tough*-complementation and *to* phrases in complement control is that the unexpressed subject of the *to* phrase is non-reflexive. This is true also of infinitival relatives and purpose clauses.

(47) a. Kim_i was eager PRO_{i,*j} to eat. (*complement control*)

b. Kim_i was easy PRO_{*i,j} to please. (*tough-construction*)

c. The gun [to shoot at dawn] is waiting for you in the store. (*infinitival relative*)

d. I donated money [to feed the hungry]. (*purpose clause*)

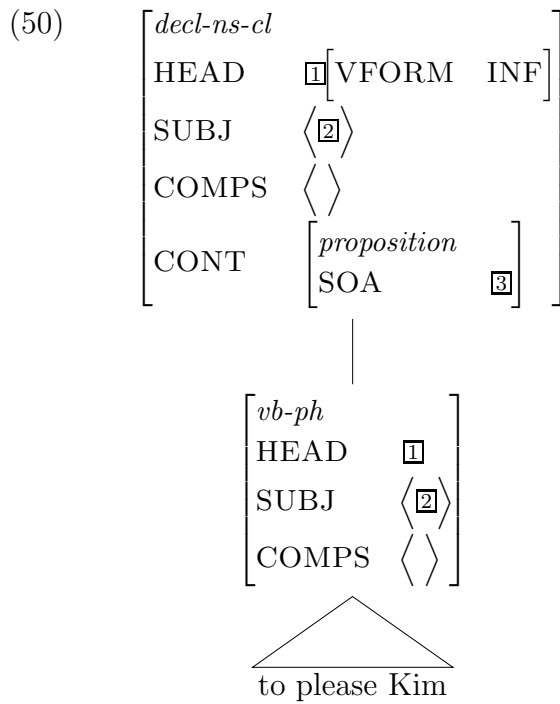
I analyze the unexpressed subject of *to* phrases in *tough*-complementation as a personal pronoun (much like obviative PRO in Chomsky (1981)). The constraint in (48) captures these properties (a phonetically unrealized pronominal (*ppro*) as in Pollard and Sag (1994:252)):

$$(48) \quad p(ersonal)pro\text{-}ss \quad \Rightarrow \quad \left[\begin{array}{l} \text{HEAD} \quad \textit{noun} \\ \text{CONT} \quad \left[\begin{array}{l} \textit{ppro} \\ \text{INDEX} \quad \textit{ref} \end{array} \right] \end{array} \right]$$

Along with Ginzburg and Sag (1999) I assume a type *declarative clause* (*decl-cl*) (see Ginzburg and Sag (1999) for information about where *decl-cl* fits in the spectrum of clause types in English). The constraint on *decl-cl* is given in (49). Note that instances of the type *decl-cl* have a *propositional* semantics which take as their *soa* argument the CONTENT value of their head.

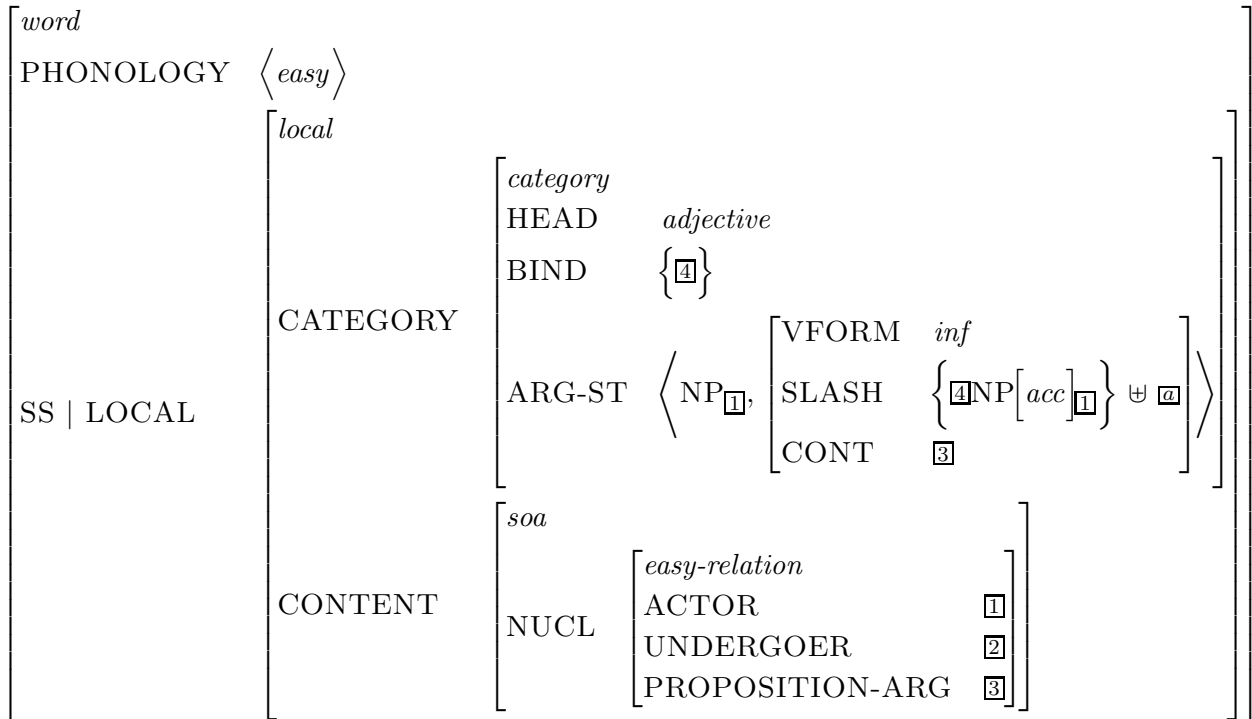
$$(49) \quad \textit{decl-cl} \Rightarrow \left[\begin{array}{l} \text{CONT} \quad \left[\begin{array}{l} \textit{propositional} \\ \text{SOA} \quad \boxed{\text{I}} \end{array} \right] \\ | \\ \text{H} \left[\text{CONT} \quad \boxed{\text{I}} \right] \end{array} \right]$$

Controlled complement *to*-phrases and *to*-phrases with a unexpressed personal pronoun subject like *tough*-complementation are instances of a special type of declarative clause called a *declarative-nonsubject-cl* (*decl-cl*) which have a non-empty SUBJ list. *to*-phrases in *for*-less *tough*-complementation have the structure in (50):



Easy-type adjectives (51) is the lexical entry for *easy*-type adjectives which show up in the gapped TC (a class including the adjectives *amusing*, *annoying*, *boring*, *comfortable*, *confusing*, *depressing*, *difficult*, *exhausting*, *fun*, *good*, *great*, *hard*, *important*, *impossible*, *impressive*, *nice*, *painful*, *tiresome*, *terrible*, *tough* (Flickinger and Nerbonne 1992)).

(51) ***easy-lxm***



In the next section I will justify and elaborate upon the semantics in (51).

One thing left to mention is that the second synsem-struct on the ARG-ST list of *easy*-adjectives has a non-empty SLASH value. Note that the NP gap is accusative. The non-empty value of the BIND feature of *easy* ensures that the NP[acc] gap doesn't get passed up to its mother (reflecting the fact that there is no filler corresponding to the gap). More can be said, of course, about the unbounded dependency properties of the gapped TC (for recent analyses see Bouma *et al.* (1999) and Calcagno (1999)). I will take the analysis in (51) as adequate for present purposes.

2.3 The Semantics of TC

Minimally, *easy*-type adjectives denote a three-place relation between an individual \mathbf{x} (denoted by the subject argument), an individual \mathbf{y} (denoted by the (unexpressed or expressed) *for*-NP argument) and a proposition \mathbf{P} (denoted by the gapped [VFORM inf] clausal complement). That is, \mathbf{x} , \mathbf{y} and \mathbf{P} stand in the *easy* (*difficult*, *tough*, *impossible* ...) relation (Jacobson 1992).⁵ In this section I provide evidence for the hypothesis that *easy*-type adjectives place semantic restrictions on the embedded subject of the *tough*-complement. I also provide evidence that the subject of the gapped TC is a semantic

⁵Chung and Gamon (1996) argue that *easy*-type adjectives in the Old English TC take three arguments: a stimulus-subject, experiencer-oblique, and infinitival complement. I also analyze the subject of the gapped TC as a stimulus subject in the sense that stimulus subjects are subsumed by the semantic role ACTOR (see below).

argument of *easy*-type adjectives contra the claims of Lasnik and Fiengo (1974), Postal (1974), Abney (1987), Comrie and Matthews (1990) and others.

Semantic restrictions on the complement of *for* Bresnan (1971) provided some of the initial evidence that the embedded subject in *tough*-complementation is semantically restricted by *easy*-type adjectives. Bresnan (1971:264) notes that *there*-insertion is not possible in *tough*-complementation for the impersonal *tough*-construction:

(52) It will be tough for at least some students to be in class on time.

(53) *It will be tough for there to be at least some students in class on time.

The same holds for the gapped TC .

(54) * This park would be impossible for there to be a riot in.

The *there*-insertion facts suggest, at least, that the complement of *for* in *tough*-complementation must be referential.

Related to the *there*-insertion facts, is the fact that there are semantic restrictions placed on the complement of *for* in the TC that do not show up in other constructions which involve an uncontroversial *for*-complementizer; e.g. after subject control adjectives like *eager*, *anxious*, and *lucky*. Bresnan (1971:264) notes that “the *for*-complementizer of a true sentential complement allows many types of objects which the preposition *for* after *tough* does not”. Her examples include the (55) and (56):

(55) Emmy was eager for that theorem on modules to become known. (Bresnan 1971:(21))

(56) * It was tough for that theorem on modules to become known. (Bresnan 1971:(21))

(57) is odd:

(57) * John is tough for a book on Hittite to please.

Compare (58a) and (58b). This and the evidence given in (57) suggests that non-volitional arguments are **not** possible subjects in *tough*-complementation.

(58) a. * Kim was difficult for that movie to frighten/freak out/disturb/horrify.

b. Kim was difficult for her little brother to frighten/freak out/disturb/horrify.

(59a,b) are from Jacobson (1992:276):

(59) a. John is easy for Mary to show that picture to.

b. * John is easy for that picture to be shown to by Mary.

This distribution cannot be explained syntactically, as non-volitional arguments are possible complements of the preposition *for* (as noted by (Hukari and Levine 1990)):

- (60) I've been waiting for favourable circumstances before making my move. (Hukari and Levine 1990:127)

This evidence suggests that the complement of *for* must be volitional in *tough*-complementation.⁶

I will assume that *easy*-type adjectives assign the subject of their [VFORM inf] complement the role UNDERGOER (Davis 1996).⁷

The semantic index of the embedded subject of the [VFORM inf] complement must be visible to *easy*-type adjectives in the TC. This means that semantic information about the subject must be visible at the level of the CP (or bare *to* phrase) complement of *easy*-type adjectives. Under standard assumptions about CP complements in HPSG, the *for/to* phrase complement in *tough*-complementation has an empty SUBJ attribute. This means that semantic information about the embedded subject is not accessible through the SUBJ feature of the CP complement. Levine (1999) argues that binding facts such as those in (61) suggest that at least the semantic index of the embedded subject is available to *easy*-type adjectives.

- (61) Kim_i is tough for herself_i/*her_i to believe in.

Compare (62):

- (62) Kim_i is eager for herself_i/*her_i to win.

That the restriction is really placed on the embedded **subject**, rather than some participant in the eventuality denoted by the CP complement is illustrated in (63a-b).

- (63) a. The hype was easy for Kim to be fooled by.
b. * Kim was easy for the hype to fool.

An analytical issue that arises is how to make the semantic information about the downstairs subject available without sacrificing other locality predictions in the grammar. The solution I adopt here is motivated by similar patterns in cross-linguistically

⁶Berman (1974:42) attributes the example in (i) to Stanley Peters.

(i) The Titanic is impossible for any iceberg to sink.

As Berman (1974) notes, a number of speakers find (i) acceptable. I do not think there is a problem here once we distinguish entailments of a predicate from entailments of the sentence as a whole (Dowty 1991).

⁷In the linking theory of Davis (1996) (see also Davis and Koenig (to appear)), UNDERGOER is essentially the grammatical encoding of the proto-patient role of Dowty (1991). Much more can be said about the semantic restrictions that are placed on the embedded subject in *tough*-complementation- the key point I wish to make here is that the embedded subject is a semantic argument of *easy*-adjectives.

(e.g. English *tag*-questions (Bender and Flickinger 1999), copy-raising or the “Richard”-transformation (see Rogers (1971), Rogers (1972) and Rogers (1974)), obligatorily controlled clausal complements in Serbo-Croatian (Zec 1987), Halkomelem Salish (Gerdts 1988)). The solution I adopt for *tough*-complementation is essentially the solution of Levine (1999).

A constraint is placed on all verb lexemes that their subject’s CONT value is shared with the value of the feature SUBJ-CONT in their CONT value. The Semantics Principle of Pollard and Sag (1994) (or the Generalized Head Feature Principle of Ginzburg and Sag (1999)) will insure that this information is visible at the level of CP.

$$(64) \quad \textit{verb-lexm} \Rightarrow \left[\text{LOCAL} \left[\begin{array}{l} \text{CAT | SUBJ} \left\langle \left[\text{CONT} \quad \boxed{1} \right] \right\rangle \\ \text{CONT} \left[\begin{array}{l} \textit{soa} \\ \text{SUBJ-CONT} \quad \boxed{1} \end{array} \right] \end{array} \right] \right]$$

The attribute CONT now has the revised geometry in (65).

$$(65) \quad \left[\begin{array}{l} \textit{local} \\ \text{CONT} \left[\begin{array}{l} \textit{soa} \\ \text{SUBJ-CONT} \quad \boxed{1} \\ \text{NUCLEUS} \quad \boxed{2} \end{array} \right] \end{array} \right]$$

In summary, I have argued that the embedded subject in *tough*-complementation is role-assigned. A minor modification, supported cross-linguistically, was made to the feature geometry of CONT and a constraint was placed on the type *verb-lexeme*.

The semantic role of the subject of *easy*-type adjectives In this section I show that the subject of *easy*-type adjectives is role-assigned. The role I argue *easy*-type adjectives assign to their subject, ACTOR, is also motivated.

Earlier analyses of the TC have argued that the subject of *easy*-type adjectives is not role-assigned; e.g. Abney (1987), Berman (1974), Chomsky (1981), Comrie and Matthews (1990), Postal (1971), Postal (1974) and others. This position has been disputed, though; e.g. Jacobson (1992), Lasnik and Fiengo (1974), Pollard and Sag (1994) and others. I will call the former position ‘*no-θ*’ and the latter ‘*θ*’.

Two pieces of evidence support the ‘*no-θ*’ position: (1) idioms and (2) entailment relations. First, certain idiom chunks can appear as the subject of *easy*-type adjectives; see Berman (1973), Jacobson (1992), cf. Lasnik and Fiengo (1974).

- (66) a. Careful attention was hard to pay to that boring lecture. (Jacobson 1992:(5))
 b. Tabs are easy to keep on this suspect. (Comrie and Matthews 1990:(9))

The claim that this data is an argument for the ‘*no-θ*’ position is controversial (Lasnik and Fiengo 1974). First of all, some idioms cannot appear as the subject of *easy*-type adjectives (Berman 1974:41).

- (67) a. * Advantage is easy to take of her. (Berman 1974:41)
 b. * Heed will be difficult to pay to the warning. (Berman 1974:41)
 c. * Recourse is easy to have to illegal methods. (Berman 1974:41)

The flexibility/inflexibility of a particular idiom to show up in the TC probably has to do with the compatibility of the particular idiom's semantics with that of the TC (Nunberg *et al.* 1994:531). Second, sentences like (68a-b) are ill-formed. If *easy*-type adjectives assign a semantic role to their subject, the illformedness of (68a-b) is readily explained- expletive *there* bears a non-referential index so it cannot be role-assigned.

- (68) a. * There is easy to believe to be a unicorn in the garden. (Pollard and Sag 1994:167)
 b. * There is hard to believe to be a monster in Loch Ness. (Tom Wasow, classroom example, 12.1.99)

The second argument for the '*no- θ* ' position comes from entailment relations. (69a,b) have the same truth conditions (Jacobson 1992).

- (69) a. That rock is impossible for me to move.
 b. It is impossible for me to move that rock.

However, the entailment evidence is not very convincing. Some adjectives which appear in both the gapped TC and impersonals (e.g. *appropriate, good, important, useful*) have different paraphrases depending on which construction they appear in. The examples in (70) and (71) are based on examples in Hukari and Levine (1990:134); see (Berman 1974).⁸

- (70) a. This would be good for Robin to get over with quickly.

a' ? "For Robin to get this over with quickly would be good (for someone)."

⁸The sequences in (i) and (ii) illustrate the ambiguous readings of sentences like *It would be good for Robin to get this over with quickly*:

- (i) It would be good for Shana to finish that dissertation quickly. She really needs to take a vacation.
 (ii) It would be good for Shana to finish that dissertation quickly. The department really needs her office for some incoming students.
 (iii) and (iv) illustrate that sentences like *This would be good for Robin to get over with quickly* are unambiguous:
 (iii) That dissertation would be good for Shana to finish quickly. She really needs to take a vacation.
 (iv) ? That dissertation would be good for Shana to finish quickly. The department really needs her office for some incoming students.

See Berman (1974:36) for an illustration of the point I am trying to make here.

a'' "To get this over with quickly is good for Robin."

(71) a. It would be good for Robin to get this over with quickly.

a' "For Robin to get this over with quickly is good (for someone)."

a'' "To get this over with quickly is good for Robin."

There are two pieces of evidence that make a convincing case for the ' θ ' position. First, *easy*-type adjectives undergo null complement anaphora; see Bayer (1990), Jacobson (1992:282) and Pollard and Sag (1994:167):

(72) a. Kim is hard to talk to but Sandy is easy. (Pollard and Sag 1994:167)

b. This rock is impossible for me to move, but that one is easy for John. (Jacobson 1992:282)

c. This rock is hard for me to move, but that one is easy. (Jacobson 1992:282)

Second, if the subject of *easy* is role-assigned then the meaning difference in interpretation between (73a) and (73b) is explained (Pollard and Sag 1994:166).

(73) a. This sonata is easy to play on that violin.

b. That violin is easy to play this sonata on.

I will take the null complement anaphora data in (72) and the differential interpretation of (73a) and (73b) as convincing evidence that the subject of *easy*-type adjectives is role-assigned.

So what is the semantic role assigned to the subject of *easy*-type adjectives? Note that some *easy*-type adjectives have (intuitively) more semantic information associated with their subject position than others. For example, *impossible* does not seem to entail anything about its subject beyond the co-indexation with the gap in the complement clause (Jacobson 1992:291) (compare, for example, *annoying*, *boring* and *confusing* (see the table in (74))).

	minimal entailments	more entailments
(74)	impossible	annoying
	tough	boring
	hard	tiresome
	easy	comfortable

This variation is problematic for an account which would try to ascribe a too fine-grained semantics to the subject of *easy*-type adjectives; e.g. entailing some single property about the subject. A possible candidate for the semantic role of the subject of *easy*-type adjectives is the θ -role **stimulus** from Case Theory ("roughly, the event or

object that brings about a psychological response in an experiencer” (Fillmore and Kay to appear)). The role **stimulus** is assigned to the stimulus subject of certain **psych-verbs** (*amuse* verbs like *calm*, *frighten*, *scare* (Levin 1993:31.1)) and stimulus subject perception verbs (e.g. *feel*, *look*, *smell*, *sound*, *taste* (Levin 1993:30.4)).⁹ In order to state the grammatical encoding of the entailments of *easy*-type adjectives which interact with linking in an independently motivated way, I assign the subject of *easy*-type adjectives the **proto-role attribute** ACTOR of the linking theory of Davis (1996).

ACTOR may seem like an unlikely candidate for the semantic role of the subject of *easy*-type adjectives, as it seems to attribute volitionality to the denotation of the subject. However, as Davis (1999:75-76) points out the ACTOR attribute is really a reification of Dowty’s proto-role **proto-agent** (Dowty 1991). The proto-role attribute ACTOR, like UNDERGOER, “entails that one or more of a specified set of proto-role entailments holds of the participant denoted by its value” (Davis 1999:76), essentially the proto-role entailments of Dowty (1991). The key entailment here is (27c) of Dowty (1991): the participant causes an event or change of state in another participant. Essentially, the subjects of *easy*-type adjectives are stimulus subjects like those of, for example, **stimulus subject perception verbs** (a.k.a. **flip perception verbs**, e.g. *looks*, *sounds*, *tastes*; see Rogers (1971), Rogers (1972). Rogers (1974)). More can be said here, of course, about the semantics of the subject of *easy*-type adjectives. I will leave that to future research.

In sum, I have argued that the subject of *easy*-type adjectives is role-assigned. The role that the subject is assigned is the proto-role attribute ACTOR discussed in Davis (1996) and Davis (1999).

Semantic Representation Hukari and Levine (1990) represent the semantics of *easy*-type adjectives in the TC in a predicate argument format. Given the argumentation in section 2.3, *easy*-type adjectives are interpreted as ternary relations between an ACTOR argument, an UNDERGOER argument, and a proposition argument. (75) is Hukari and Levine’s semantic representation of *tough* in *Robin is tough for us to please* (Hukari and Levine 1990:127).

(75) **tough'**(**Robin'**, **us'**, **please'**(**us'**, **Robin'**)) (Hukari and Levine 1990:(19))

My representation of the semantic NUCLEUS value of *easy*-type adjectives is given in (76) (roughly based on the semantic architecture given in Davis (1996), Davis (1999) and Ginzburg and Sag (1999)):

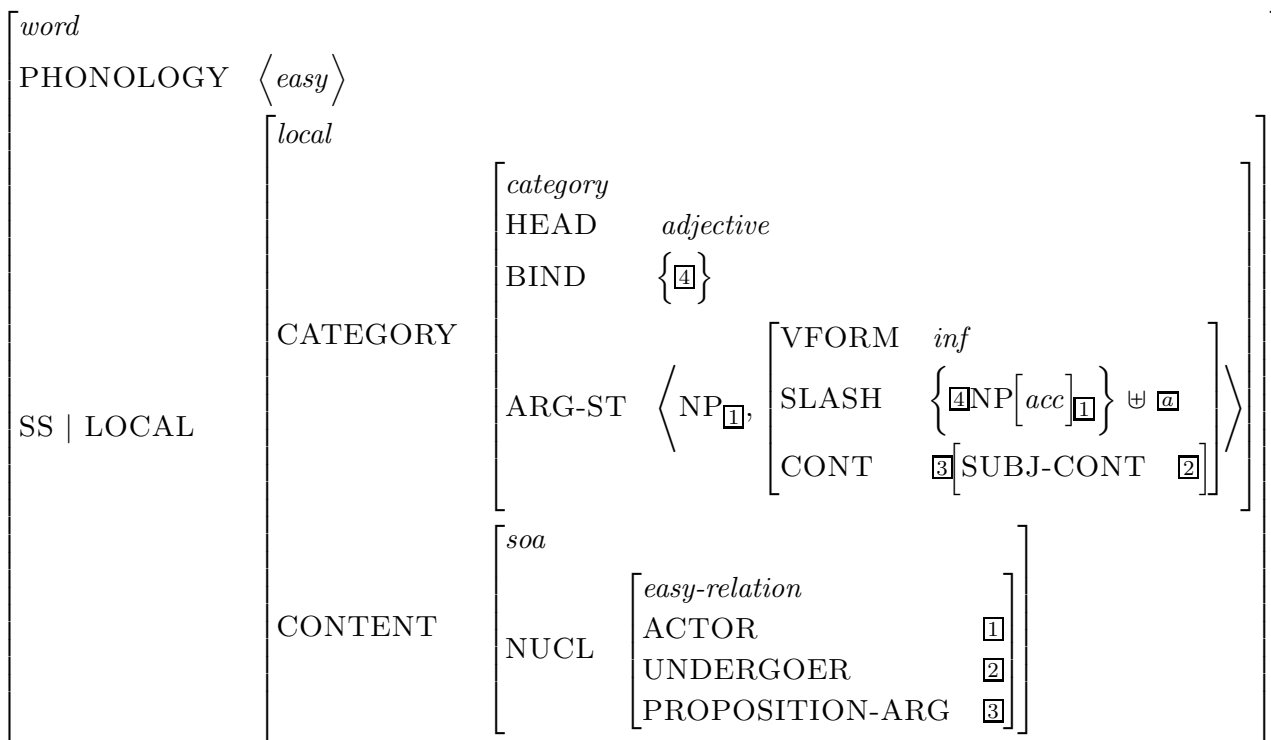
(76)
$$\left[\begin{array}{l} \textit{easy-rel} \\ \text{ACTOR} \\ \text{UNDERGOER} \\ \text{PROPOSITION-ARG} \end{array} \right] \begin{array}{l} \boxed{\text{1}} \\ \boxed{\text{2}} \\ \boxed{\text{3}} \end{array}$$

⁹Chung and Gamon (1996) assign this role to the subject of *easy*-type adjectives in Old English.

2.4 Summary

In this section I argued that the modern *tough*-construction is a mixed construction: *easy*-type adjectives in the TC select for a clausal complement while placing semantic restrictions on the embedded subject (contrary to the assumption that role-assignment is local). (77) illustrates the information I have argued that must be referenced in the lexical entries for *easy*-type adjectives.

(77) *easy*-lxm



In the next section, I argue that the historical development of *easy*-type adjectives and *for/to* phrases are the source of the mixed properties of *tough*-complementation.

3 The Origins of “Hybrid” *tough*-complementation

The goal of this section is to show that the mixed properties of the modern TC argued for in section 2 arose from independent developments in the history of English. In particular I wish to give form to the argument that the TC is a *hybrid construction* or *hybrid structure*. In this section, I argue that the subcategories (lexical items) which authors (e.g. Demske-Neumann (1994), Wurff (1990)) have identified as participating in apparent cases of the *tough*-construction throughout the history of English (the lexical class of *easy*-type adjectives; i.e. those nominals or adjectives referring to degrees of

difficulty or expressing value judgments (Mair 1987:61)) are participants in a *hybrid structure* (Tabor 1994) in Modern English.

...an element may participate in a single construction which seems best analyzed as a splicing-together of a construction associated with its old behavior and one associated with its new behavior. I'll call such splicing behavior "structural hybrid behavior" or simply "hybrid structure". (Tabor 1994:167)

Tabor represents hybrid structures via a continuous model of syntactic categories. In what follows I use the version of HPSG outlined above. I follow Malouf (1998:227) in assuming that this framework can model hybrid structures without necessarily abandoning discreteness:

Hybrids represent types with an unusual combination of syntactic properties inherited from otherwise disjoint supertypes. Thus both the regular and irregular nature of hybrids can be modeled in this kind of system (Malouf 1998:227).

tough-complementation instantiates an "unusual combination of syntactic properties" in the sense that *easy*-type adjectives in the TC denote a three-place semantic relation while only requiring two syntactic arguments, an NP subject and a clausal complement. *easy*-type adjectives seem to function like a proposition embedding verb like *think* in only taking a clausal complement. Semantically, *easy*-type adjectives function like an object control verb like *persuade* in denoting a three-place relation. It is these mixed properties that forced me to revise the feature geometry of the verbal CONT attribute by adding the feature SUBJ-CONT (see section 3). Recall that the feature SUBJ-CONT ensured that *easy*-type adjectives were able to constrain the semantics of the embedded subject of their clausal complement.

The postulation of the attribute SUBJ-CONT allows information about the subject to be available at the level of S and CP, perhaps involving a loss of locality predictions in the grammar. While a feature like SUBJ-CONT (or some other way of making this information visible at the S/CP level) is motivated independently of *tough*-complementation (e.g. by English tag-questions and obligatorily controlled complements in Serbo-Croatian (Zec 1987)), why isn't the use of this information more rampant in the grammar of English?

I argue that the *tough*-complementation facts have a historical explanation. The mixed properties of *tough*-complementation can be correlated with two developments in the history of English. (1) The grammatical distinction between *easy*-type adjectives and *eager*-type adjectives was lost in late Middle English/early Modern English; see Denison (1997) and Fischer (1991). (2) The complementizer use of *for* arose on analogy with the analysis of *for* as complementizer in other constructions. I review both of these developments in the next two sections.

3.1 The historical development of *easy*-type adjectives

In this section I review the historical development of *easy*-type adjectives. As a working definition, I define *easy*-type adjectives as adjectives that select an infinitival phrase missing an argument. I argue that the loss of the grammatical distinction between *easy* and *eager*-type adjectives in the late fourteenth century enabled the clausal reanalysis of the complement of *easy*-type adjectives.¹⁰

In Old English, *easy*-type adjectives (see Appendix A for a list of the *easy*-type adjectives that I discuss in this paper) took an optional dative NP argument and an obligatory slashed VP argument.¹¹ (78) and (79) illustrates the optionality of the dative NP argument with the Old English *easy*-type adjective *earfoðe*.

- (78) þær is swyðe god eard, ac he is **earfoðe** us to begytenne
 there is very good earth but he is difficult us-DAT to get
 “The land is very good there, but it is difficult for us to obtain”

(c1000, ÆHom 21 153 [SOURCE: Chung and Gamon (1996:64)])

with optional argument

- (79) Bere is swiðe **earfoðe** to gearcigenne.
 beer is very difficult to make
 “Beer is very difficult to make”

(c1000, ÆCHom I, 12 188.4 [SOURCE: Wurff (1990)])

without optional argument

In comparison with data I discuss below for Middle English, *eager*, *easy* and *fair*-type adjectives are all followed by the active infinitive in Old English. Callaway (1913) notes only **one** example of an adjective followed by a passive infinitive (see Demske-Neumann (1994), Fischer (1991) and Gaaf (1928) on the passive infinitive after *easy*-type adjectives):

- (80) we ðe næron **wurðe** beon his wealas gecigde.
 we who not-were worthy to-be his servants called
 “We who were not worthy to be called his servants” (c1000, Ælf. Hom. II. 316^{b2}
 [SOURCE: Callaway (1913)])

¹⁰The discussion in this section builds on Demske-Neumann (1994), Fischer (1991), Fischer (1996), Chung and Gamon (1996), MED (1952-), Mustanoja (1960), Visser (1963-1973), Wurff (1990) and Wurff (1992). The data that is original to this paper is derived from a preliminary search of the Helsinki Corpus. The lexical items that were the basis of that search are included in the right half of the table in Appendix A.

¹¹The status of *to*-infinitives in Old English is controversial. Fischer (1996:131) notes some persuasive evidence that Old English *to*-infinitives are PPs and infinitives are essentially nominal: (1) the *to*-infinitive is always inflected, (2) the *to*+infinitive appears like a word and (3) functions in common with other nominal PPs. However, Fischer also notes that some verbal features were incorporated in the infinitival (e.g. the ability to assign accusative case). I will leave the question of how the *to* infinitives in OE/ME are analyzed in the framework adopted here for future work.

Fischer (1991:154) and Chung and Gamon (1996) point out that there was a clear distinction between *easy*-type adjectives and *eager*-type adjectives (subject control adjectives) in Old English. Fischer (1991:154-155) notes that there are only two exceptions to this generalization; *wurðe* ‘worthy’ and *(un)gearo* ‘(un)ready’ show up in both *eager* and *easy*-type contexts.

The grammatical distinction between *easy* and *eager*-type adjectives was lost in Late Middle English. For the purposes of illustrating this change I focus on three *easy*-type adjectives which have their source in Old English: *hard* [OE heard], *light* or *līgt* ‘easy’ [OE lēoht] and *ethe* ‘easy’ [OE ēap(e)]. The original data in this section comes from the Helsinki Corpus and MED (1952-). Data not original to this paper is accompanied by a citation of the secondary source.

In Early Middle English (prior to 1350), the subject of adjectives like *hard*, *light/līgt* and *ethe* was coindexed with a object gap in the adjective’s infinitival complement, as in (81a-c) (all the examples in (81a-c) are of *easy*-type adjectives). That is, there were no subject control adjectival uses of these adjectives. These adjectives did not show up as subject control adjectives or with passive infinitival complements in Early Middle English.

- (81) a. þeʒʒ seʒʒdenn þuss bitwenenn hemm **Harrd** iss þiss word to fillenn.
 they said thus among themselves difficult is this word to comply-with
 “They said among themselves: ‘this word is difficult to comply with’.”

(?c1200Orm. 6326 [Source: MED (1952-)])

- b. ”Do?” quod ðe vox. ”Ich wille ðe lere. I-siist ðou a boket hongī ðere? ðere is a bruche of heuene blisse, Lep ðerinne, mid I-wisse, And ðou shalt comen to me sone.” Quod the wolf, ”ðat is **līgt** to done [that is easy to do].”

(d. ?a1300 Foxwo. 35 [Source: Helsinki Corpus])

- c. Vor he was simple and milde and eþ [vr. eisi; B:eþore, esier] to ouercome.
 For he was simple and mild and easy to overcome
 “He was simple and mild and easy to beat.”

(c1325(c1300) Glo. Chron.A 6693 [Source: MED (1952-)])

At the end of the 14th century two patterns emerged which affected the former grammatical distinctiveness of *easy* and *eager*-type adjectives. Adjectives which previously had only an *easy*-type usage were used also as subject control adjectives. Also, *easy*-type adjectives which formerly only took active infinitival complements show up with passive infinitival complements.¹² Accompanying these newer usages, adjectives

¹²Demske-Neumann (1994:226) gives the sentence in (i) (from the late sixteenth century), where the passive infinitival complement contains a *by*-phrase, as evidence for this development.

(i) *How apt her breast were to be prest by me* (d1593 Marlowe’s Ovids Elegien I, 5, 20)

like *hard*, *light*/*lizt* and *ethe* showed up in their older *easy*-type distribution. (82)-(84) illustrate the older and newer usages of these adjectives in Late Middle English. (82a)-(84a) illustrate *easy*-type usages of these adjectives. (82b)-(84b) illustrate *eager*-type usages of these adjectives. (82c) and (84c) illustrate the use of *hard* and *ethe* with a passive infinitival complement.

hard:

- (82) a. My wrecched clothes (...) to me were **hard** now for to fynde.
 my wretched clothes (...) to me were hard now for to find
 “My miserable clothes were now hard for me to find”

(c1395 Chaucer CT.Cl. E.851 [Source: MED (1952-)]) easy-type adjective

- b. Here ȝe, rebel and **hard** to byleue [WB(2):vnbileueful; L increduli], wheþer of
 Hear ye, stubborn and obstinate to believe whether of

þis stoon water to ȝow we mowe castyn out?
 this stone water to you we may cast out

“Listen up you non-believers, is it possible for us to draw water out of this stone for you?”

(a1382 W. Bible 1 Bod 959 Num.20.10 [Source: MED (1952-:206)]) eager-type adjective

- c. þe fire þat Loue had in hir brest enclosed (...) was ful **harde** for to be deposed.
 the fire that Love had in her breast enclosed (...) was very hard for to be deposed
 “The fire that Love had enclosed in her breast was hard to remove”

(a1420 Lydg. TB 1.2248 [Source: MED (1952-)]) passive infinitive

light/lizt:

- (83) a. Love (..) is (..) An hevy birthen, **lyght** to bere.
 Love (..) is (..) an heavy burden, light to bear
 “Love is a heavy burden, easy to bear”

(a1425(?a1400) RRose 4711 [Source: MED (1952-)]) easy-type adjective

- b. By þe Man, þat is ben bitokned þe Men þat ben mylde & lizth to drawn
 By the Man, that is been prophesied **the Men that been mild & light to draw**

hem to gode.
 themselves to god

“..... the men that have been good-mannered and eager to draw themselves to God.”

(c1350 Apoc. in LuSE 29 p.35 [Source: MED (1952-)]) eager-type adjective

ethe

- (84) a. Women ben **ethe** to greve whan þei be with childe.
Women are easy to anger when they be with child
“Women are easy to anger when they are pregnant”

(a1475 Ludus C. 136/20 [Source: MED (1952-)]) easy-type adjective

- b. Right of hert that ere of lytill conynge and for thi er **eth** to desaiſe.
Right of heart that are of little wisdom and for thi are easy to despair
“Just and of little wisdom and therefore easily led to despair (of sth.)”

(a1500(c1340) Rolle Psalter (UC 64) [Source: MED (1952-)]) eager-type adjective

- c. Woymen byn frele (..) and **eth** to be ouercomyn.
women are frail (..) and easy to be overcome
“Women are fragile and easy to overwhelm”

(a1500(a1415) Mirk Fest. 228/31 [Source: MED (1952-)]) passive infinitive

This data shows that in the late 14th century the grammatical distinction between *easy* and *eager*-type adjectives was less clear than it was in Old and Early Middle English. While there may be other factors which can be correlated with the collapse of the distinction between *easy* and *eager*-type adjectives¹³, I focus here on the large influx of French (and Latin) words in Late Middle English/Early Modern English; see Fischer (1990:177), Denison (1997:(260)). Burnley (1992:431) notes that the “that the density of French loans increases with the passage of time, the rate of new adoptions into English reaching a peak in the second half of the fourteenth century as the uses of French were eroded by English”. The earliest entries for French loan *easy*-type adjectives in English like *esi* ‘easy’, *difficult* and *(im)possible* (see Table 1 in Appendix A) in the MED (1952-) are around the middle of the fourteenth century.¹⁴ The important thing to note about

¹³Fischer (1990) and Demske-Neumann (1994) explicitly tie the rise of the passive infinitive to the mixed adverbial/adjectival categorial status of *easy*-type lexemes in Old English. The appearance of passive infinitivals in *tough*-complementation in Early Middle English is linked to the collapse of adjectives and adverbs morphologically in early Middle English. According to Fischer (1992:339), after the fifteenth century, when a true adverbial form is used, the infinitive is always passive. I find the argumentation that Demske-Neumann and Fischer use to defend this explanation for the rise of the passive infinitive very opaque and the evidence unconvincing so I will not discuss it here.

¹⁴The story is, of course, a little more complicated than this. *daunđerōus* shows up before the fourteenth century in one example from 1230 with the meaning ‘domineering’ or ‘overbearing’ (MED 1952-). The earliest example of *cōvenāble* is from 1275, all other examples appear after 1350 (MED 1952-).

these adjectives is that they show up in the fourteenth century, in English, in all three of the patterns mentioned above: (1) the *easy*-type usage, (2) the *eager*-type usage and (3) with a passive infinitival complement.

(85)-(88) illustrates the distribution of the French loans *esi*, *(im)possible*, *profitable* and *cōvenāble* ‘appropriate’ in the late fourteenth to late fifteenth century (in English). (85a)-(88a) illustrate the *easy*-type usage of these adjectives. (85b)-(88b) illustrate the use of these adjectives with a passive infinitival complement. (88c) illustrates the use of *cōvenāble* as an *eager*-type adjective.

esi

- (85) a. & ðat his lymes tremeli for ðat is sygne of strengþe. And also ðouȝ he
& that his limbs tremble for that is sign of strength. And also although he

reste muche ðat he be **esi** to hold.
rest much that he be easy to hold

“& that his limbs quiver that is a sign of strength. And, also, although he rests much, he is easy to restrain”

(d. a1450 Horses P 89 [Source: Helsinki Corpus]) easy-type adjective

- b. þo maters schulen be to hem lizt and **eesi** to be vndirstonde.
the matters should be to them light and easy to be understood
“the matters should be easy for them and not difficult to understand”

(c1454 Pechok Fol. 15/7 [Source: MED (1952-)]) passive infinitive

(im)possible

- (86) a. Ouer þat olde dislocacioun & hardned is hard and as war **impossible** to
Over that old dislocation & hardness is hard and as were impossible to

cure [*Ch.(2): impossible to be cured].
cure

“It is impossible (for someone) to completely cure that old dislocation and physical hardness.”

(?a1425 *Chauliac(1) 102a/b [Source: MED (1952-)]) easy-type adjective

- b. Rehercing in the sayde boke how Philosophie appiered to him shewyng the mutabilite of this transitorie lyfe / and also enformyng howe fortune and happe shold bee vnderstonden / with the predestynacion and prescience of God as

moche as maye and ys **possible** to be knowen naturelly [with the predestination and prescience of God as much as may and is possible to know naturally] / as a fore ys sayd in this sayd boke

(c1477-84 Caxton Prologues P 36 [Source: Helsinki corpus]) passive infinitive

profitable

- (87) a. Fire hoote iren & rede is nought **profitable** to kerue nor kutte til it bigynne to
Fire hot iron & red is not profitable to carve nor cut til it begins to

wexe white
become white

“A fire hot and red iron is not effective to carve or cut until it becomes white.”

(a1398 Trev. Barth 200a/b [Source: Fischer (1991:178)]) easy-type adjective

- b. He was ful **prophetable** In slike a hous to be souerayne
He was fully profitable in such a house to be sovereign
“He was fully able to be sovereign in such a house”

(c1440(a1401) Life Bridlington in NM 71.p. 144 [Source: Fischer (1991:178)])
passive infinitive

cōvenāble

- (88) a. Fastinge is (...) right **couenable** to swage the yre of God
Fasting is (...) right appropriate to assuage the ire of God
“Fasting is ... very appropriate to assuage the ire of God

(?1450 Knt.Tour-L. 13/35 [Source: Fischer (1991:178)]) easy-type adjective

- b. Under suche peines as shal be þought **convenable** to be executed freely and leefully.
Under such pains as shall be though appropriate to be executed freely and agreeably
“Under such punishments as shall be thought appropriate to execute freely and lawfully”

(d1429 Proc.Privy C.3.331 [Source: MED (1952-)]) passive infinitive

- c. (...) þat he myght be **conabill** To serue God in strenth stabill
(...) that he might be qualified to serve God in strength stable
“... that he might be qualified to serve God in enduring strength”

(?c1450 St.Cuth 1381 [Source: Fischer (1991:178)]) eager-type adjective

The parallelism between the patterns with the native English adjectives in (82-84) and the use of French loans in English in (85-88) in the fourteenth and fifteenth century is striking.

This amphibiousness survives into Modern English. Denison (1997:185) notes that the latest such example for *easy* ‘not unwilling, ready’ in the OED is 1738 (although the example he cites as evidence does not obviously support this assertion: *How easy to forgive!* (d.1738 Wesley Psalms cxvi. 5 [Source: OED])).

(89) Her majesty seemed to all to shine though courtesy: but as shee was not **easy** to receive any to especiall grace,

(d. 1627 Annals of Elizabeth P 8) eager-type adjective

Similar examples can be found with *hard* and *difficult* as late as the nineteenth century.

(90) This devil...may be alive,-for I believe some common things are **hard** to die.

(d. 1849-50 Dickens, David Copperfield xlvi.574) eager-type adjective

(91) Lady Bellaston will be as **difficult** to believe anything against one who [etc.].

(d. 1749 Fielding Tom Jones xiv. ii.) eager-type adjective

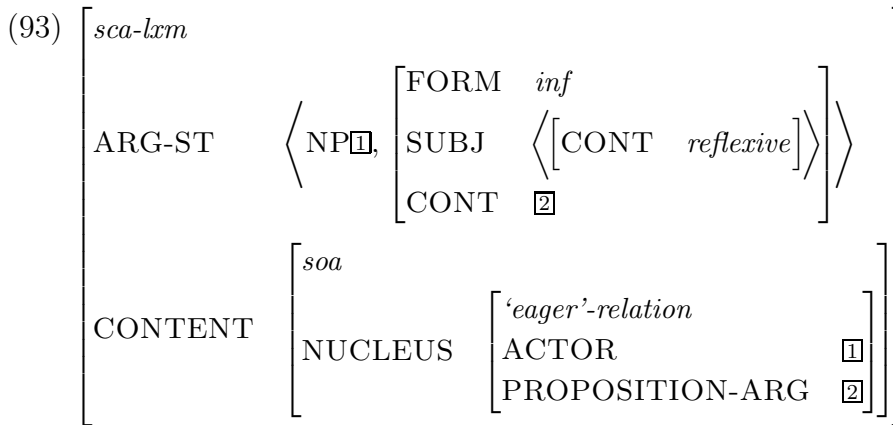
In sum, I argued in this section that the distinction between *easy* and *eager* type adjectives was lost in the fourteenth century. In the next section I show how this set the stage formally for a clausal reanalysis of the complement of *easy*-type adjectives.

Repercussions of the *easy/eager* collapse As I just showed, evidence for the distinctiveness of *easy* and *eager*-type adjectives was lost in the fourteenth century. Native English words (*hard*, *light*, *ethe*) that had been formally distinguished in English from *eager*-type adjectives like *redi* ‘ready’, also had uses as *eager*-type adjectives starting in the late fourteenth century. Now I lay out what I think the change looked like formally.

In Old English/Early Middle English, *eager*-type adjectives were subject control adjectives much like those in Modern English. (93) gives a partial lexeme entry for subject control adjectives in Old English/Early Middle English. The example in (92) (from Fischer (1991:170)) illustrates the use of the Old English *eager*-type adjective *geornfull* ‘eager/earnest’ (Hall 1962). Note that the coindexation of the first argument on the ARG-ST list and the unexpressed reflexive subject of the second argument follows from Principle A of the Binding Theory (*sca-lxm* = subject control adjective lexeme).

(92) þæt þu swiðe **geornfull** wære hit to gehyranne
 that you very eager were it to hear
 “that you were very eager to hear it”

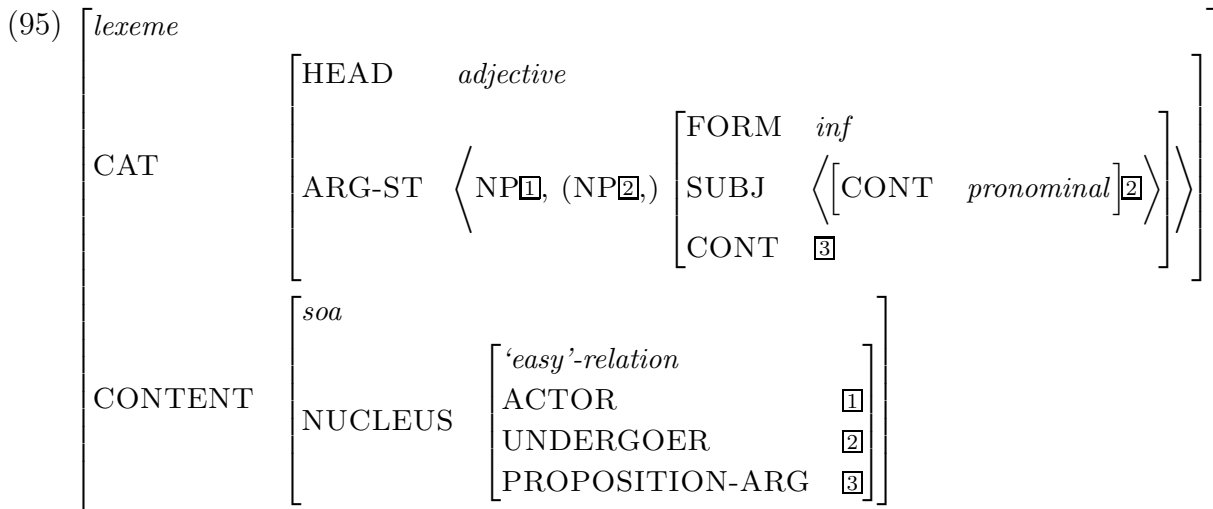
(c880 Bo 22.51.6 [Source: Fischer (1991:170)])



(95) illustrates a partial lexical entry for *easy*-type adjectives in Old English and Early Middle English.¹⁵ First, note that that I am claiming the *easy*-type adjectives denoted a three-place relation in Old English/Early Middle English (as I argued they do in Modern English (see section 2)); see Chung and Gamon (1996). Second, note that I am claiming that the ARG-ST value of *easy*-type adjectives in Old English and Early Middle English is a three-membered list. The second member of the list, corresponding to the UNDERGOER in the semantics, is optional (compare (95) with the entry for Modern English *easy* in Pollard and Sag (1994:167)). Note that in early Middle English the second argument would be, for some writers, a PP with an argument marking preposition as its head.

(94) Vor he was simple and milde and eþ [vr. eisi; B:epore, esier] to ouercome.
 For he was simple and mild and easy to overcome
 “He was simple and mild and easy to beat.”

(c1325(c1300) Glo. Chron.A 6693 [Source: MED (1952-)])



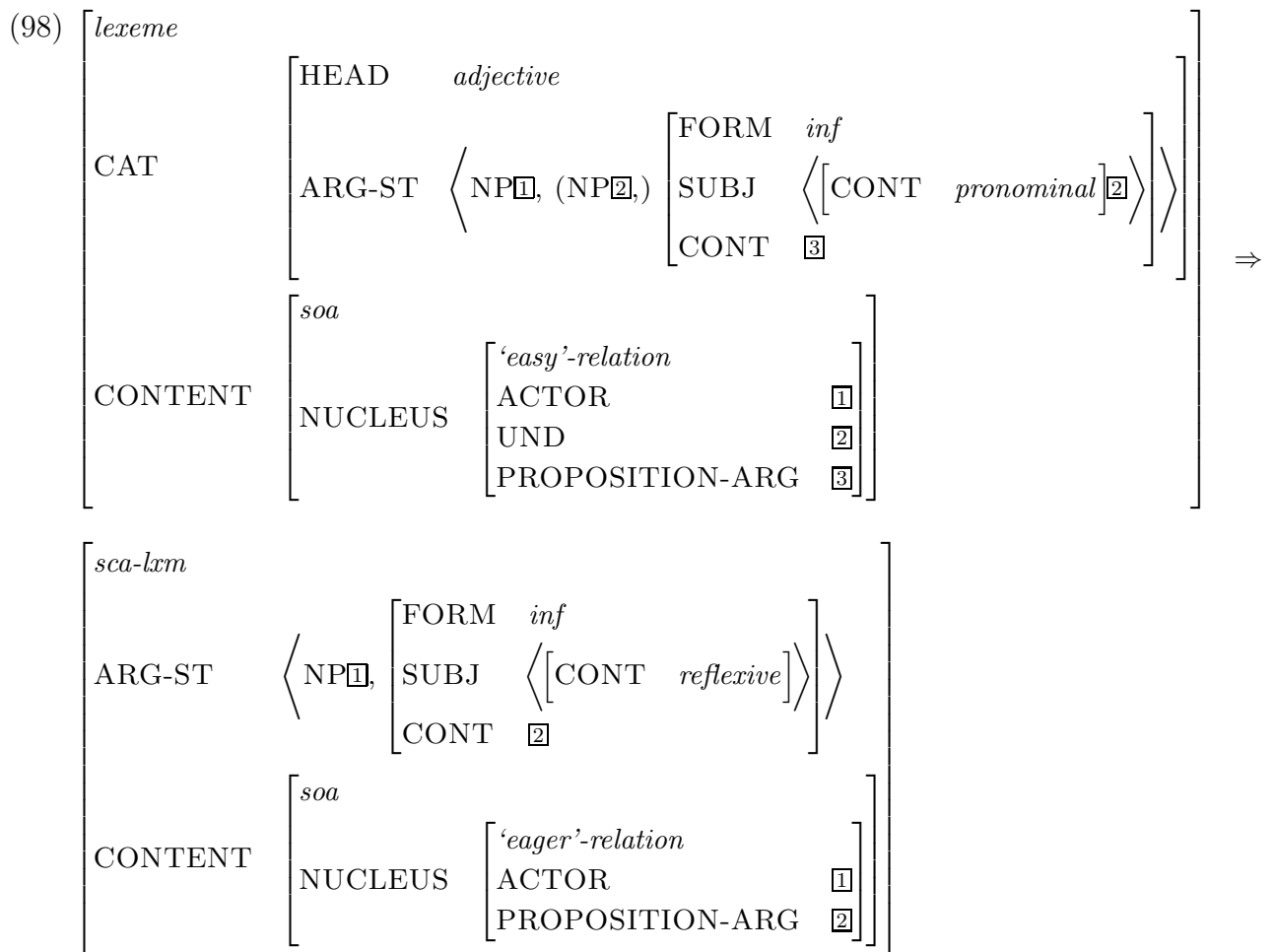
¹⁵Note that I have left out the SLASH information. Wurff (1990), Demske-Neumann (1994), Goh (1999) and others have argued that the relation between the extracted argument and the subject of *easy*-type adjectives is a bounded dependency in Old English/Early Middle English. I leave this for future research.

(96) and (97) illustrate two lexical entry descriptions captured by (95). In (96), the UNDERGOER argument is not an element on the ARG-ST list of the *easy*-type adjective and the unexpressed embedded subject has an arbitrary pronominal interpretation (i.e. PRO_{arb}). In (97), the UNDERGOER argument is present on the ARG-ST list and co-indexed with the unexpressed reflexive subject of the third argument. Since the semantics is the same for both entries I have left it out.

$$(96) \left[\begin{array}{l} \textit{lexeme} \\ \text{ARG-ST} \left\langle \text{NP}_{\mathbf{1}}, \left[\begin{array}{l} \text{FORM} \quad \textit{inf} \\ \text{SUBJ} \quad \left\langle \left[\text{CONT} \quad \textit{ppro} \right]_{\mathbf{2}} \right\rangle \right\rangle \right. \\ \left. \text{CONT} \quad \mathbf{3} \right. \end{array} \right] \right\rangle \end{array} \right]$$

$$(97) \left[\begin{array}{l} \textit{lexeme} \\ \text{ARG-ST} \left\langle \text{NP}_{\mathbf{1}}, \text{NP}_{\mathbf{2}}, \left[\begin{array}{l} \text{FORM} \quad \textit{inf} \\ \text{SUBJ} \quad \left\langle \left[\text{CONT} \quad \textit{reflexive} \right]_{\mathbf{2}} \right\rangle \right\rangle \right. \\ \left. \text{CONT} \quad \mathbf{3} \right. \end{array} \right] \right\rangle \end{array} \right]$$

(98) illustrates the lexical relation I claim originated in late Middle English (correlated with an influx of French loans like *(im)possible*, *profitable*). Each three-place denoting *easy*-type adjective was now lexically related to a subject control adjective.



There were probably lexical exceptions to the relation in (98). However, all the *easy*-type adjectives I have investigated appeared in the two patterns after the fourteenth century.

In Late Middle English/Early Modern English the evidence for the optional argument in (95) was infrequent. In (99), the PP *to hem* is an adjunct which modifies the main clause like a purposive PP in Modern English. The subject of *lygt* ‘not difficult’ and *eesi* ‘easy’ controls the subject of the embedded infinitival clause.

- (99) þo maters schulen be to hem lygt and eesi to be vndirstonde.
 the matters should be to them light and easy to be understood
 “the matters should be easy for them and not difficult to understand”

(c1454 Pecock Fol. 15/7 [Source: MED (1952-)])

Alongside of the *eager*-type adjectival usages of adjectives like *eesi* were *easy*-type adjectival usages. The rise of these two-handled usages of adjectives which were formerly grammatically distinct motivated the loss of degree of saliency for the earlier lexical entry of *easy*-type adjectives in (95) with an optional second argument. This opacity set the stage for the clausal reanalysis of the complement of *easy*-type adjectives. The

older analysis in (95) was less attainable by learners due to the competing uses of these adjectives.

While the two-handed usage of *easy*-type adjectives starting in Late Middle English/Early Modern English was perhaps an enabling cause (in the sense of Kiparsky (1996)) of the clausal reanalysis of *tough*-complementation, the existence of a period of attenuated evidence for the older usages of *easy*-type adjectives could not be a full explanation of the development of modern *tough*-complementation. It is clear that *easy* and *eager*-type adjectives are grammatically distinct in Modern English. At some point in Modern English the lexical relation in (98) was lost (with some archaisms surviving into modern English like *ready* and *fit*). A piece of the story told so far is missing. Why didn't the grammatical indistinctiveness of *easy*-type adjectives survive into (late) Modern English? Why were the active, *easy*-type forms the more common variant in Early Modern English (Rissanen 199?) and now in Modern English?

In the next section I argue that an independent development in the history of English triggered the clausal reanalysis of *tough*-complementation. I argue that the complementizer use of *for* in *tough*-complementation arose on analogy with the reanalysis of *for/to* phrases in other constructions.

3.2 *for/to*-phrases and *tough*-complementation

In the previous section I established that the evidence for the older grammatical distinctiveness of *easy*-type adjectives was attenuated in Late Middle English/Early Modern English. Here I show that the new, clausal analysis of *tough*-complementation arose on analogy with the reanalyzed clausal use of *for/to* phrases in other constructions.¹⁶ First I lay out a historical description of the reanalysis of *for/to* phrases.¹⁷ Second I argue that the reanalysis of *tough*-complementation was a generalization of the use of *for* as a complementizer in these other constructions.

Mustanoja (1960:378) points out that “the original local meaning ‘before’ [of *for*-BC] provides a starting-point not only for the temporal use, but for many other derived functions...”; e.g. standing before a person, standing in front of a person as his champion, representative or substitute, and others. In Old English, *for* and *fore* are used indiscriminately for these purposes. The use of *for* for expressing purpose or destination is found in Old English, although it is less common than in Middle English.

In Middle English, there is some differentiation of *for* and *fore*. In the course of Middle English, *for* develops another temporal meaning, that of duration (Mustanoja

¹⁶It is impossible to read the clausal reanalysis of *tough*-complementation off of the historical data. The diagnostics I used to identify the clausal properties of *tough*-complementation in Modern English (e.g. parasitic gapping) are not the sort of phenomena one can look to a corpus for. Thus, this section will have an air of delicate speculation that, I believe, was not present in section 3.1. Further research, however, may take this analysis out of the realm of speculation.

¹⁷This description relies heavily on Mustanoja (1960) and Visser (1963-1973). Fischer (1990) and van Gelderen (1993) were also useful resources. A detailed examination of the historical development of *for/to* phrases is beyond the scope of this study. Note that nowhere do I explain **why** *for/to* phrases were reanalyzed as a clause.

1960:383). Also, the benefactive use of *for* shows up in Early Middle English.

Beginning in Late Middle English there was a split in meaning and category between the prepositional use of *for* (*inter alia* ‘purposive’, ‘benefactive’) and a **marker** use. A **marker** is defined as a member of a class of lexical items which formally mark the items with which they combine without being directly associated with a meaning (Carlson 1983:78): “meanings associated with function morphemes are in fact part of the structure of a phrase itself”. The marker usage we are interested in here is the complementizer use of *for*. There are four pieces of evidence that *for* took on a marker usage beginning in Late Middle English: (1) impersonal constructions, (2) *for/to* phrases as adjuncts, (3) *for/to* phrases as subjects and (4) *for/to* phrases as the complement of certain verbs. I illustrate each of these developments in turn.

***for/to* phrases with impersonal expressions** One argument in favor of the new marker use of *for* is from impersonal expressions. In the 14th century *for* became possible in conjunction with an infinitival clause following an impersonal expression (Mustanoja 1960:383)).

(100) it is no maystrye **for a lord To dampne a man withoute answere of word**
it is no mystery[?] for a lord to damn a man without answer of word
“It’s no mystery for a lord to damn a man without a word”

(c1385 Ch. LGW 386, *G*-text [Source: (Mustanoja 1960:383)])

(101) wher it be leeful **for a man to leve his wijf**
where it be lawful for a man to leave his wife
“where it is lawful for a man to leave his wife”

(‘si licet homini dimittere uxorem suam’, c1388 Wyclif Matt. xix 3 [Source: (Mustanoja 1960:383)])

***for/to* phrases as adjuncts to nouns** Visser (1963-1973:987) notes that the first use of *for/to* phrases as adjuncts to nouns appeared in the fourteenth century.

(102) make ȝe redi a hors **for poul to ride on**.
make ye ready a horse for Paul to ride on
“Prepare a horse for Paul to ride on.”

(c1380 Wyclif Acts [Source: Visser (1963-1973:988)])

(103) unnethe was ther space **For me to stonde**, so ful was al the space.
scarcely was there space for me to stand, so full was all the space
“Scarcely was there space for me to stand, so full was all the space.”

(c1381 Chaucer Parlt. Foules 314 [Source: Visser (1963-1973:988)])

for/to phrases as subjects *for/to* phrases first appeared as subjects in the sixteenth century (Visser 1963-1973:957).

(104) **For us to levy power Proportionate to th'enemy**, is all unpossible. (d1594 Shakesp. Richard III III, ii, 2 [Source: Visser (1963-1973:957)])

(105) **For nature so preposterously to err... sans witchcraft** could not (d1604 Shakespeare Othello I, iii, 62)

for/to phrases as a complement of verbs Visser (1963-1973:2244-2248) notes only eight verbs before the eighteenth century which selected for a *for/to* phrase complement: “Apart from a few exceptions [e.g. with *pray for* (Chaucer), *suffer for* (1551 Robynson), *stay for* (Shakespeare), *press for* (1659 Pepys), etc.], the idiom is hardly ever met with before the beginning of the twentieth century, or the last years of the nineteenth century” (Visser 1963-1973:2244-2245). The earliest example Visser (1963-1973) cites is from Chaucer following *preyen for* ‘pray for’.

(106) Whan man or womman preyen for folk to auaucen hem oonly for wikked fleshly
When man or woman pray for folk to promote them only for wicked fleshly

affeccioun (...) that is foul Symonye.
desire (...) that is foul simony

“When a man or a woman prays for clergy to promote them only for wicked fleshly
desire ... that is foul simony”

(c1390 Chaucer CT Pars (Manly-Rickert) I 786 [Source: Visser (1963-1973:2247)])

The rise of clausal *for/to* phrases as a complement of verbs occurred slowly, verb by verb, very rare before the twentieth century (van Gelderen 1993:133).

tough-complementation and for/to phrases Unambiguous uses of the complementizer *for* did not appear until the sixteenth century (e.g. the use of *for/to* phrases as subjects).¹⁸ The new marker use of *for* as a complementizer was enforced gradually in English, appearing only sporadically as the head of a verbal complement before the nineteenth century (van Gelderen 1993:133). What I would like to argue here is that

¹⁸Stockwell (1976:33) notes a passive use of a *for/to* phrase from the sixteenth century, roughly glossed as *It was important for him to be relieved of the responsibility* as conclusive evidence for the marker reanalysis of *for* in the early sixteenth century. Stockwell does not give the source for this example. I have not been able to track down Stockwell’s example. (i) illustrates a passive use of a *for/to* phrase from the early sixteenth century:

(i) Let me speak for my Life, it can be no hurt for him to be brought; he dares not accuse me.

(d.1603 The Trial Of Sir Walter Raleigh P I,215.C1 [Source: Helsinki Corpus])

the clausal reanalysis of *tough*-complementation arose on analogy with the use of *for* as a complementizer in other constructions.

(107) provides evidence that *easy*-type adjectives selected for PPs headed by *for* as early as the fifteenth century. Note that *heavy* ('hard to accomplish, difficult') is a native English word [OE *hefig*].

(107) Curious endityng and hard sentence is ful **hevy** at onys for such a child to lerne.
Curious description and hard sentence is very heavy at once for such a child to learn.
"Subtle description and flawless expression is very difficult for a child to learn at once."

(a1450(1391) Chaucer Astr. introd. 53 [Source: MED (1952-)])

At this time (the middle of the fifteenth century) the evidence for a clausal constituent analysis of the *for/to* phrase in *tough*-complementation was meager. (107) had a single constituent analysis with *for* as a preposition.

As discussed in Section 3.1, *easy*-type adjectives were two-handed until the late nineteenth century. Fischer (1991:206) claimed that by the end of the Early Modern English period most adjectives "lost their grammatical ambiguity"; i.e. *easy*-adjectives no longer were lexically related to their *eager*-type adjectival counterparts. However, there is evidence that certain adjectives had both *easy* and *eager*-type uses until (at least) the late nineteenth century.

(108) The riddle of her flushed cheek ... was **hard** to read.

(d1888 Mrs. Humphry Ward Rob. Elsmere (Nelson's Libr.) 391 [Source: Visser (1963-1973:992)]) *easy*-type adjective

(109) This devil...may be alive,-for I believe some common things are **hard** to die.

(d. 1849-50 Dickens, David Copperfield xlvi.574) *eager*-type adjective

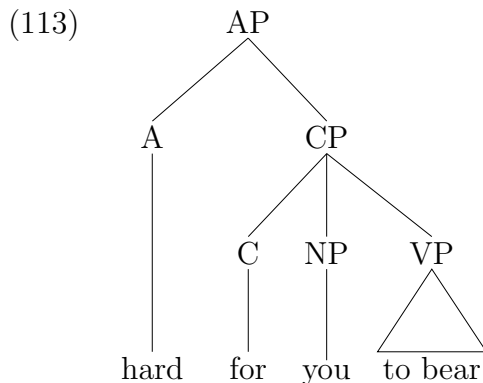
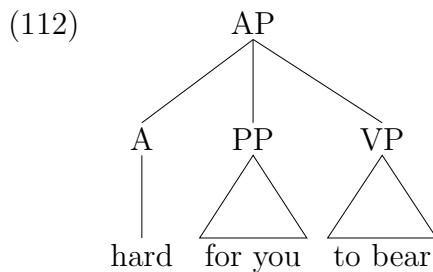
Aside from archaisms like *ready* and *fit*, *easy*-type adjectives and *eager*-type adjectives are grammatically distinct after the late nineteenth century. Around the same time the complementizer use of *for* shows up as the head of the CP complement of a number of verbs (e.g. *aim for*, *arrange for*, *ask for*, *beg for*, *long for* all make their appearance starting in the middle of the nineteenth century; see Visser (1963-1973:2245-2248)). This temporal overlap suggests the following story: the complementizer use of *for* in *tough*-complementation arose on analogy with the use of *for* as a complementizer in a number of contexts, including verbal complementation, in the late nineteenth/early twentieth century.

I schematize this change in (110). The reanalysis of prepositional *for* as a marker in other constructions was the structural source for the dual constituent analysis of *tough*-complementation after *easy*-type adjectives in the late nineteenth century. (111) is the sort of example I claim had a dual constituent analysis in the late nineteenth century (illustrated in (112) and (113)).

(110) $easy \left[{}_{PP} \textit{for} \left[\textit{NP} \right] \left[\textit{to VP} \right] \right] > \left\{ \begin{array}{l} \textit{easy} \left[{}_{CP} \textit{for} \left[\textit{NP} \right] \left[\textit{to VP} \right] \right] \\ \textit{easy} \left[{}_{PP} \textit{for} \left[\textit{NP} \right] \left[\textit{to VP} \right] \right] \end{array} \right\}$

(111) Guy, old fellow, it is not so much that this is hard for me to bear as that it is **hard** for you to bear.

(d.1872 Gilbert, Sir W. S. ON GUARD. An entirely Original Comedy, IN THREE ACTS Act III. [Source: English Prose Drama (Humanities Digital Information Service)])



3.3 Summary: The Historical Development of *tough*-complementation

In this section I argued that the mixed properties of modern *tough*-complementation discussed in Section 2 have their source in two changes in the history of English syntax (given in (114):

- (114) a. The evidence for the older (bare VP) argument structure of *easy*-type adjectives became attenuated due to the collapse of the grammatical distinction between *easy* and *eager*-type adjectives in the late 14th century.
- b. Modern *tough*-complementation arose as a generalization of clausal *for/to* phrases in other constructions.

Note that neither of the changes given in (114) provides an explanation of the mixed properties of *tough*-complementation independent of the other. Only once the evidence for the older use of *easy*-type adjectives was attenuated was the generalization of the clausal use of *for/to* phrases in other constructions able to penetrate *tough*-complementation.

Table 1 summarizes the historical stages in the development of *tough*-complementation described in this section (AS = ARG-ST).

Table 1

Stage	Description	<i>easy</i> -type adjectives	<i>eager</i> -type adjectives
Old English/Early Middle English	Distinct classes of <i>easy</i> and <i>eager</i> -type adjectives	AS<NP,(NP,)VP>, three-place semantic relation	AS<NP,VP>, two-place semantic relation
Late Middle English/Early Modern English	All <i>easy</i> -type adjectives have <i>eager</i> -type usages (see (98))	same	same
Modern English (present)	Distinct classes of <i>easy</i> and <i>eager</i> -type adjectives, <i>for/to</i> phrases (CP) penetrate <i>tough</i> -complementation as an analogical generalization (late 1800s)	AS<NP,[VFORM inf]>, three-place semantic relation	AS<NP,[VFORM inf]>, two-place semantic relation

4 Conclusion

In conclusion I have argued that the mixed properties of *tough*-complementation are a byproduct of specific changes in the history of English syntax. *easy*-type adjectives have denoted a three-place relation throughout the history of English while their argument structure has changed due to local and independent changes in the history of English.

A Appendix A

Table 1 lists the *easy*-type adjectives that I discuss in Section 3.

Table 1

	<i>Word: Old English</i>	<i>Gloss</i>	<i>Word: Middle English/Early Modern English</i>	<i>Gloss</i>	<i>Source</i>
1.	wurðe	'worthy'	worthy		Old English
2.	earfoð(e)	'difficult'	arveth	'difficult'	Old English
3.	ēaþe	'easy'	ethe	'easy'	Old English
4.	leohþ	'easy'	liht/light	'easy'	Old English
5.	hefig	'difficult'	hevi	'difficult'	Old English
6.	heard	'hard'	hard		Old English
7.			drēdeful/dredful	'dreadful'	Old English (v. <i>ondrēdan</i>)
8.			esi(e)	'easy'	French
9.			difficult		French
10.			(im)possible		French
11.			daungerous	'dangerous'	French
12.			profitable	'useful, effective'	French
13.			cōvenable	'appropriate'	French
14.			necessari	'necessary'	French

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